

JFQ



**Lessons from
Kosovo**

**Military
Transformation**

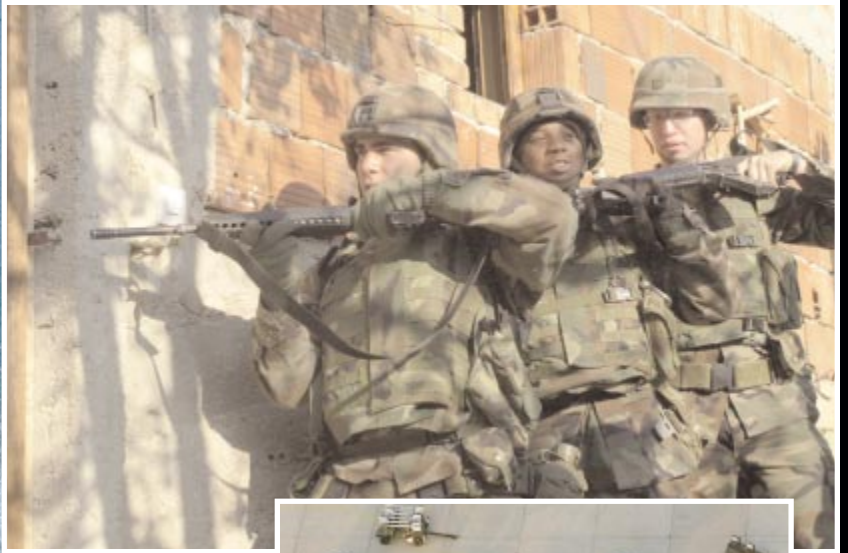
**Effects-Based
Operations**

**POWs and Missing
Personnel**

**Installation Force
Protection**

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Spring

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The only thing harder than getting a new idea into the military mind is to get an old idea out.

—Basil Liddell Hart



A Word from the



B-52 returning from
Afghanistan.

1st Combat Camera Squadron (Cadric H. Rudisil)

Chairman

In the last issue of *Joint Force Quarterly*, I outlined my three top priorities as Chairman—winning the global war on terrorism, improving joint warfighting capabilities, and transforming the Armed Forces. In this issue, I want to discuss in more detail my thoughts on transformation, the third priority.

Transformation has become one of the hottest topics inside the Beltway—and with good reason. Highlighting the urgent need to protect America from terrorism, President Bush, speaking at the Citadel last December, declared that his

first priority was accelerating transformation. With the President setting the goal, Secretary Rumsfeld is aggressively taking action to change the Department of Defense on many fronts, from revamping military strategy to streamlining the planning, programming, and budgeting system and adopting better business practices.

The area of transformation that I am most concerned about is *military* transformation, a much narrower slice of the larger DOD effort. During testimony before the House and Senate

(continued on page 4)

1 A Word from the Chairman

by Richard B. Myers

**8 From the Field and Fleet:
Letters to the Editor**

**12 Lessons from the War in
Kosovo**

by Benjamin S. Lambeth

**20 Military Transformation and
Legacy Forces**

*by Williamson Murray and
Thomas O'Leary*

28 Europe's Military Revolution

by François L.J. Heisbourg

**33 The Republic of Korea
Approaches the Future**

by Jiyul Kim and Michael J. Finnegan

**41 Australia and the Quest for
the Knowledge Edge**

by Michael Evans

**52 Seeking Synergy: Joint
Effects-Based Operations**

by Price T. Bingham

**60 Operational Deception in the
Information Age**

by Milan N. Vego

**67 The Evolution of Peace
Operations Doctrine**

by Richard B. Lovelock



**74 Creating a New Path for Joint
Education**

by Robert M. Antis and Claudia H. Clark

**82 Recovering and Accounting
for Prisoners of War and
Missing Personnel**

by Thomas E. Erstfeld

**89 Closing the Barn Door—
Installation Force Protection**

by John L. Cirafici

94 Planning War in Peacetime

by Michael C. Desch

PHOTO CREDITS



The cover of this issue shows AH-1W, Enduring Freedom (USS *Bonhomme Richard*/Spike Call). The front inside cover features CH-46 hoisting emergency personnel at Apra Harbor, Guam (Fleet Imaging Command, Pacific/Marjorie McNamee); soldiers clearing house near Kamenica, Kosovo, during Joint Guardian (55th Signal Company/Christina Ann Bennett); F-15Es on line being readied for Enduring Freedom (U.S. Air Force/Dave Nolan); and Marine tanks on Egyptian range, Bright Star '01/'02. The table of contents depicts Land Warrior fighting system (Fort McPherson/Susan Norvick) and P-3 departing (Fleet Combat Camera Group, Pacific/Arlo K. Abrahamson). The

back inside cover captures E-3 AWACS taking off from Elmendorf Air Force Base, Alaska, Northern Edge '01 (U.S. Air Force/Wayne Clark). The back cover pictures USS *Curtis Wilbur* in the North Arabian Sea for Enduring Freedom (U.S. Navy/Ted Banks); amphibious assault vehicle on Red Beach, Kernel Blitz (13th Marine Expeditionary Unit/Fidencio J. Hernandez); F-15C climbing from Kadena airbase, Japan, Cope North '02-1 (18th Communications Squadron/Marvin Krause); and M1 tank during force-on-force training, Bright Star '01/'02 (55th Signal Company/Robert Hyatt).



■ OF CHIEFS AND CHAIRMEN

105 George Henry Decker

■ THE JOINT WORLD

107 Doctrine and Lessons Learned

■ OFF THE SHELF

110 War by Any Name:
A Book Review
by Kalev Sepp

111 The Fight for Peace:
A Book Review
by Geoffrey D.W. Wawro

113 MacArthur's Air War:
A Book Review
by Thomas E. Griffith, Jr.

114 Military History
Reconsidered:
A Book Review
by Holger H. Herwig

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May 2002

Gen Richard B. Myers, USAF
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(continued from page 1)

Armed Services Committees in February, I said that the goal of military transformation is fostering changes that result in a dramatic improvement over time in the way combatant commanders wage war. First, we must acknowledge that such improvement requires more than new technology; it must involve change across the Armed Forces in areas such as doctrine, organization, training, people, and facilities. Second, it calls for a cultural change in our thinking and use of our capabilities to achieve more effective results. Third, military transformation requires improved interoperability, flexibility, and adaptability to support and achieve national security objectives in a dynamic international environment.

Having established the broad outline for the process of military transformation, the next step is determining how to achieve it. In the near term, we need to focus on improving joint linkages, fusing combat power, and eliminating gaps and seams among combatant commands, services, and supporting defense agencies. We must improve joint command, control, communications, com-

**not surprisingly, it is easier
to study past revolutions than to
create or control new ones**

puters, intelligence, surveillance, and reconnaissance (C⁴ISR) capabilities to better connect all these entities in the battlespace. Finally, we need to synchronize and leverage ongoing service transformation through continuous joint experimentation under U.S. Joint Forces Command (JFCOM). I firmly believe that by integrating combat power and the core competencies of the services we will accelerate transformation and create the changes necessary to address an array of both current and future threats to national security.

The need for change is not new. History is replete with militaries that deliberately pursued new ideas, while in more recent years much has been written about a revolution in military affairs (RMA). *JFQ* alone has published over thirty articles on all aspects of the subject. Not surprisingly, it is much easier to study past revolutions than to create or control new ones. RMAs may result from deliberate actions taken by necessity, but rarely are their outcomes preordained. Prior to World War II, the Marines experimented with combined arms warfare for amphibious operations, the U.S. and Japanese navies developed carrier-based aviation, and the German army fielded combined arms



Joint direct attack munition on *USS Theodore Roosevelt*, *Enduring Freedom*.

forces—each illustrating a deliberate effort to transform military capabilities. The motivation to improve warfighting was provided by what each nation considered to be the challenge to its security. As dramatic as these examples are, none involved a linear process from the initial concept to full realization of enhanced military capabilities. The organizations involved had one thing in common: an institutional willingness to experiment and change. I am convinced that the deliberate steps we have taken to synchronize and support service and joint transformation will create that same mindset. I am also convinced that the joint experimentation process at JFCOM will have a central and sustaining role in military transformation.

Summer 2002 should provide a watershed for joint experimentation. JFCOM is working closely with the services, U.S. Space Command, U.S. Special Operations Command, and U.S. Transportation Command to combine several transformation initiatives in the largest joint field experiment ever conducted, Millennium Challenge '02 (MC 02). This experiment is designed to improve C⁴ISR by evaluating warfighting concepts and related



tactics, techniques, and procedures, and improve our ability to achieve rapid, decisive effects throughout the battlespace.

As a result of previous experimentation insights, current operational demands, and lessons learned, JFCOM has created a standing joint force headquarters. A central component of MC 02 and future experiments, this headquarters is part of an investigation into how to eliminate the ad hoc nature of current operations, improve joint interoperability, and enhance operational effectiveness. The insights gained from the experiment will be reflected in recommendations on doctrine, organization, training, leader development, and other areas that impact transformation.

Jumping near
Ulan Batar, Mongolia.



353rd Special Operations Group (Michael Farris)

Experimentation is crucial, but it is not the only transformation path. Modernization and recapitalization also play a part. While sudden doctrinal, organizational, and technological breakthroughs are possible through experimentation and should be vigorously pursued, history suggests that there is also a linkage between transformation and incremental modernization of key

the requirement to maintain readiness must be balanced with modernization investments and the need to accelerate transformational changes

programs. The development of modern firepower is an example. There have been many small, deliberate steps to enhance weapon systems during the past century. These incremental improvements have led to three major transformational leaps in military effectiveness. The first was the development of weapons such as automatic small arms, machine guns, and tanks—coupled with development of both wire and wireless communications—which enabled operational and tactical commanders to mass both forces and firepower with unprecedented effect on the battlefield. Further developments in weapons, to include rockets, cruise and ballistic missiles, and nuclear weapons—linked by satellite and digital

communications technology—led to the second transformational leap, allowing commanders to mass firepower using dispersed forces.

Modernization efforts over the past thirty years are leading to a third transformational leap. We are already exploiting the potential of precision-guided munitions, using the global positioning system (GPS) to guide joint direct attack munitions (JDAMs) on targets with deadly accuracy. Thus we envision combatant commanders being able to achieve mass effects on an enemy without having to mass either forces or firepower.

On occasion, we can almost immediately foresee radically new military capabilities brought about by technological improvements in a modernization program (for example, with stealth technology). From concept to acquisition, planners envisioned the operational impact of stealth-capable aircraft defeating robust integrated air defense systems. This important advancement coupled with precision-guided munitions has dramatically improved joint warfighting capabilities.

But usually it is difficult to perceive the broader potential of technologies in the concept stage. More often it takes incremental development and refinement to realize their transformational qualities. GPS represents this latter type of change. Though an important development, its use to enable precise navigation in operations around the globe did not, by itself, dramatically improve warfighting. It took further development and companion technologies to synchronize the timing of fires and communications and the movement of forces, as well as to pinpoint the delivery of ordnance. These advances in combination have vastly improved joint warfighting capabilities.

Whether transformation comes in incremental steps or radical leaps, it does not occur in a vacuum. As the world changes, so do the threats. The standing requirement to maintain readiness for today's conflicts and potential adversaries must be balanced with modernization investments and the need to accelerate the introduction of transformational changes.

The global war on terrorism has spurred innovative thinking, which may in turn allow us to optimize many modernization programs—taking older systems in unforeseen directions. We have used so-called Cold War relics such as B-52s, designed for intercontinental strategic strikes, and P-3s, intended to hunt submarines, in novel ways. B-52s armed with JDAMs now provide close air support. P-3s, flown in tandem with Joint Stars and unmanned aerial vehicles, provide



U.S. and Afghan forces,
Operation Anaconda.

real-time intelligence, reconnaissance, and targeting data to Army, Marine, and Special Operations Forces units. B-52s and P-3s are not, in and of themselves, transformational. But how they have come to be used does represent a transformation. Modernization and the innovative use of C⁴ISR have dramatically improved the way U.S. Central Command has been able to fight the war, including the shortening of sensor-to-shooter decision cycles through the use of real-time data collected from a web of sensors.

Recent combat operations in Afghanistan illustrate how modernization programs contribute to transformation and dramatically improved capabilities for combatant commanders. Continued modernization of complementary joint-capable systems and platforms and additional improvements in C⁴ISR and other emerging technologies is crucial. We seek greater operational flexibility through plug-and-play capabilities, quickly mixing and matching forces as conditions dictate. We seek further integration of warfighting systems and development of standing joint force headquarters for all combatant commands. Finally, we seek to experiment with new ideas

and capabilities to validate and explore other approaches to transformation.

I look forward to MC 02 and the work by the standing joint force headquarters to improve joint warfighting. These efforts will contribute greatly to transformation and better prepare us to face a complex array of threats. More importantly, I look forward to the ideas of the men and women in the Armed Forces, pursued on the frontlines of the global war on terrorism and through forums such as *Joint Force Quarterly*. Creativity is the fuel that will power innovation and improvements in joint warfighting and military transformation throughout the 21st century.

RICHARD B. MYERS
Chairman
of the Joint Chiefs of Staff

Letters . . .

INTERWAR YEARS

To the Editor—Frederick Kagan has written another excellent synthesis of history and derived wisdom. His "Strategy and Force Structure in an Interwar Period" (*JFQ*, Spring/Summer 01) is both well supported and direct in its advice. There is, however, a crucial gap in the logic underpinning his recommendations.

Kagan outlines his recipe for accomplishing readiness (shaping, maintaining, and preparing) while simultaneously acknowledging but skipping lightly over the crucial point that almost no democracy accomplishes this task in the absence of an identified and sustained threat. In other words, he is preaching to the choir while neglecting the rest of the flock. What confronts the United States is not a lack of resources but rather the absence of sustained political will.

Perhaps it is time thinkers and actors on the national stage consider other methods to act on Kagan's thoughts on readiness. While actions such as those pursued by the Creel Commission would likely be illegal today, other routes can be explored. Kagan is undoubtedly correct in saying that this is an interwar period. The conundrum is bringing that realization to the national security community and selling it to the rest of America.

—MAJ Robert Bateman, USA
Center for Strategic and International Studies

To the Editor—While I agree with Frederick Kagan's overall message—that the United States must have the goal of "prolonging the current epoch of peace and prosperity as long as possible and being ready to fight and win the conflict that will ultimately end it"—I question some of his assertions as well as his seemingly contradictory conclusion about the best way to accomplish that goal.

First, I am astonished at Kagan's limited definition of what it means "to shape" the global environment. In his view, America "must continually shape the international environment by the use of force or its threat, and by stability and peace operations when appropriate." He advocates "aggressive involvement" as "the best way" to accomplish these three tasks. I think he has his priorities backward. While it is true that, as the national military strategy states, "The Armed Forces help shape the international environment primarily through their inherent deterrent qualities," that deterrent capability provides a backdrop to the true means of shaping the environment: "foster[ing] the institutions and

international relationships that constitute a peaceful strategic environment by promoting stability; preventing and reducing conflict and threats; and deterring aggression and coercion."

Next, Kagan decries withdrawing forces from overseas in favor of long-range strike capabilities because that "would immediately increase instability by signaling that America is no longer committed to the peace." As evidence, he points to past aggression by North Korea, North Vietnam, Iraq, and Serbia. But what he fails to recognize is that the US global presence was greater, not less, when that aggression occurred and it did not deter it.

In writing off U.S. nuclear capabilities as having become "largely irrelevant to regional security," Kagan reveals the greatest fault of his argument: a singular focus on fighting the last war (indeed, perhaps even a war of 60 years ago). We would be naïve not to realize that inherent in the U.S. abandonment of the strategy of two nearly simultaneous major regional conflicts is the option of resorting to nuclear weapons should an aggressor exploit the U.S. preoccupation elsewhere.

Fourth, in discussing force structure, Kagan argues that "the real test will be how many troops are ready to go without notice at any time." But the real test is how rapidly the military transportation system can get those troops to the battlefield. The problem with force structure is not the number of divisions or air expeditionary forces, but whether we have adequately addressed throughput.

Finally, Kagan concludes that the Army should adopt a brigade-sized model similar to that recommended by Douglas Macgregor in *Breaking the Phalanx*. But he wants to have things both ways, claiming that "any force short of 15 divisions" would be insufficient for the future but then argues that the division is a relic of the Cold War that must be abandoned.

While the historian Kagan seems to want the Nation to prepare to again defeat the forces of Nazi Germany, history suggests that the best way to prolong an epoch of peace and prosperity is through prevention, early intervention, and deterrence. The joint force has a critical role in all three.

—MAJ Peter C. Giotta, USA
Joint Military Intelligence College

To the Editor—The guiding tenets of national security strategy—shape (the international environment), respond (to the full spectrum of crises), and prepare now (for an uncertain future)—are being put to the test as events unfold in the wake of the terrorist attacks of September 11, 2001. Frederick Kagan argues in "Strategy and Force Structure in an Interwar Period" that "military preparedness is urgent in periods of apparent peace just like during periods of tension." How right he is.

Allied efforts to defeat al Qaeda and Taliban, and subsequent operations to root out terrorist cells in Yemen, the Philippines, Somalia, Sudan, and possibly other countries, do not demonstrate America's unpreparedness for war or a lack of military readiness. But that's not the point. Operation Enduring Freedom is not the kind of two-front major theater war Kagan had in mind.

Events in Afghanistan bear out Kagan's comments on shaping, which aims to maintain "peace and stability in regions of vital national interest" lest a power vacuum occur "when traditional structures collapse." Yet after the defeat of the Soviets in Afghanistan, what vital interests remained? As it turned out, there were several thousand vital interests, but those did not become apparent until later.

The functions of shaping are engagement and deterrence. Engagement helps demonstrate U.S. commitment and resolve while fostering conditions conducive to the spread of democratic capitalism. Deterrence, on the other hand, is demonstrated only by failure. Cold War thinking survives when it comes to deterrence: "Nuclear phantoms still survive in our minds," quipped a Russian panellist at a conference on emerging threats. We've known for some time that it takes something other than a nuclear arsenal to deter terrorist aggression, and shaping with boots on the ground forward presence is part of the deterrence equation.

Interestingly, the war against terrorists illustrates another of Kagan's points: "A great power that can meet only one major challenge at a time makes it more likely that a second enemy will take advantage of that power's preoccupation with the first." He offers that the "focus on the European conflict in 1941 was a precondition to the Japanese attack on British and American possessions in the Pacific."

Boots on the ground also serve another purpose when it comes to employing long-range precision weapons. As Operation Enduring Freedom shows, and as Kagan argues, no matter how capable airpower might be, it is even more so when applied in a joint way, with combatants on the ground to accurately target enemy positions.

Although the war against terrorists must occupy much of our energy and resources, it is a major regional war—or two simultaneously—that worries Kagan. We must currently execute the toughest parts of national security strategy. While involved in a fight, we must also continue shaping activities. In addition, we must prepare by transforming the force to meet future threats. Even more worrisome is that too much emphasis might be placed on technology without considering innovations in organization and doctrine.

Emphasizing the need to maintain readiness during transformation, the author cites organizational changes the Air Force and Marine Corps have already made. He calls on the Army to do the same

and “abandon the Cold War model of Army organization.” The division structure does not accord with the way we currently train or operate, which focuses on brigade training and deployments. This is likely to result in a volatile readiness mix within divisions called upon to fight in a major conflict.

At the core of Kagan’s force structure argument is what he describes as an “unfounded assumption: in 1990 the active components of the Armed Forces were prepared to defeat a Soviet attack and, since that threat was clearly much greater than any threat or combination of threats today, the military in this interwar period should be smaller and less costly. This assumption does not accord with historical reality; it prejudices the question of what force structure we need, coming to what is clearly a wrong answer.”

A relative lack of funding and resources for militaries is a longstanding issue, especially in democratic countries. Rueful of America’s wealth, an Italian general observed at a NATO reserve forces conference, “You have the first and second best military in the world.”

Kagan is right to call for increased resource allocation during interwar years. That the largest increase in defense spending in 20 years had to come on the heels of a national catastrophe is somewhat ironic. But it may be sufficient to put our defense orientation, posture, and transformation activities on the right track.

—Charles F. Hawkins

Historical Evaluation and Research
Organization

To the Editor—The interwar years show that democracies are slow to recognize and prepare for danger, according to Frederick Kagan. In fact, they demonstrated the reverse. Britain and France confronted Germany in 1940 with superior material strength. The Germans had 2,439 light and medium tanks, of which over 1,700 were light, against 3,079 Allied tanks, most of which were medium or heavy; 7,378 German artillery pieces faced 13,974; 3,369 Nazi aircraft faced 4,981; and 135 *Wehrmacht* divisions confronted Allied 152. Nor should one forget the immense investment in the Maginot Line. Further, contrary to the myth of German might cultivated by the Nazis, the relative strength of antagonists was much the same throughout the 1930s. The Nazi domination of Europe cannot be attributed to either an untimely recognition of the threat or an unwillingness to meet it.

So why were the Germans not deterred? The answer is Adolf Hitler. Gerhard Weinberg makes it clear that der Führer was absolutely bent on war, not merely as a means to his insane objectives but as an end in itself. Such a monster was not to be deterred, only destroyed.

While defeating the Nazis was the only option, World War I and abortive attempts to enforce the Versailles treaty had eroded any possibility of public support for preventive war. For over sixty years, Neville Chamberlain and Munich have served as the paradigms of “peace at any price.” Chamberlain, however, fully represented the temper of his people in 1938. Britain had gone to war in 1914 because it felt the costs of German hegemony over Europe to be unbearable.

The lessons of history are often complex and are seldom easily applied. More specifically, the evidence suggests that, in this instance at least, democracies were able to recognize and respond to the threat within the context of their normal political processes. The fact that their generals could not put this power to use should not obscure that fact. A more subtle interpretation of the record suggests that the trip wires for preventive war, the strictures of Versailles, were poorly calculated to maintain public support. Further, though Hitler fortunately remains unique, it would appear that criminals and madmen are not easily deterred by a rational calculation of the odds; they can only be defeated.

Public support—the willingness to “pay any price, bear any burden”—was, is, and should remain the foremost bulwark of international stability. A hyperactive, overly interventionist foreign policy that drains resources and mires the Nation in moral ambiguity only exhausts that stout willingness to do what is both right and necessary.

—MAJ Wade Markel, USA
Army Transformation Office

RETHINKING SO/LIC

To the Editor—I read “Special Operations Forces after Kosovo” by Charles J. Dunlap, Jr. (*JFQ*, Spring/Summer 01–02) with great interest. Against the background of Kosovo and Afghanistan, the co-operation between Special Operations Forces and the Air Force could serve as a model for new operational concepts. These operations have shown that modern information technology provides the responsible commanders the optimal means to coordinate such actions. The preeminent strategic importance of air operations has become evident.

The vision Giulio Douhet—the airpower theorist of the interwar period—formulated 1921 in *The Command of the Air* could be reality in a few years. Although it is difficult to compare wars—remembering Clausewitz’s observation that they are like chameleons—the offensive operations in Afghanistan may allow the conclusion that the Air Force—as an instrument of asymmetric warfare—is able to have decisive impacts on the outcome of wars.

Due to the opportunities given by modern networks of systems for reconnaissance, command and control, and the engagement of

weapons, the areas of operation become transparent. These systems in combination with unmanned aerial vehicles clearly show that we can speak of a real revolution in military affairs. But technological conditions are only part of what is needed. As Admiral Bill Owens pointed out in *Lifting the Fog Of War* and in a speech to the Clausewitz Society in Berlin, it will be important to combine technology with coherent doctrine.

In the future, the wider spectrum of engagement of the Air Force against maneuvering tank units could shift the weight from maneuver to firepower. Against the background of synchronized operations between the Air Force and Special Operations Forces, linear battles such as we observed during the Persian Gulf War will become less meaningful. The Army—driven by the vision of General Eric K. Shinseki—has drawn sound conclusions from that new situation. The lean structures of the new interim brigades and especially their means for reconnaissance and intelligence are similar to the organization of Special Forces. With planned new equipment, these Army forces could become active at the same time through the whole depth of an area of operations and work closely with the Air Force. Robert Scales describes such operations in a monograph called “Future Warfare Anthology,” published by the U.S. Army War College in 2001. Technology and doctrine alone are not sufficient. It needs commanders on all levels who are able to manage the huge amount of information and—for the conduct of an operation—to distinguish important from superfluous information.

—Bruno Lezzi
Neue Zürcher Zeitung

To the Editor—As a former director of Operations, Plans, and Policy for U.S. Special Operations Command, I am compelled to comment that “Special Operations Forces after Kosovo” by Charles Dunlap is a thinly-veiled service-centric attack by a non-SOF officer on Army Special Operations Forces: rangers, Special Forces, psychological operations, and civil affairs. The author’s appreciation of the future of SOF ground operations is limited to “snatch missions.” His assumption that unconventional warfare is a dying concept is thoroughly disproven in Afghanistan. His understanding of PSYOP is limited to the tactical (broadcasts and leaflets), and he desires to civilianize civil affairs, not understanding its combat roles of campaign deconfliction and support and management of displaced personnel and prisoners. Finally, he states that SOF shouldn’t execute counterdrug missions, one of the better training vehicles for Special Forces. Such are the results when one draws sweeping conclusions from a small conflict.

—MG Geoffrey C. Lambert, USA
U.S. Army Special Forces Command

To the Editor—Charles Dunlap began his article by asserting that “Allied Force was the first major operation in which aircraft achieved victory without the need for a land campaign.” This is patently wrong and only serves to undermine the spirit of joint operations.

Despite claims about precision and ability, airpower did not force the enemy to abandon the battle. That was achieved by the credible threat, indeed the reality, of engaging U.S. ground forces, as embodied by Task Force Hawk. Slobodan Milosovic did not give the order to withdraw until the Russians told him U.S. ground forces were coming and that if his forces did not withdraw, Russia could not help them. The fact that Serb forces largely withdrew—intact—is a testimony to the inability of airpower to destroy tactical combat forces in the field despite its effectiveness when it went “downtown,” destroying strategic targets such as bridges, road and rail networks, and the power supply.

The Allied Force Munitions Assessment Team and Joint Intelligence Team Survey concluded that airpower expended some 14,000 bombs—mostly precision guided munitions (PGMs)—against combat forces in the field and destroyed 14 tanks, 18 armored personnel carriers, and 20 artillery/mortars—not much of a return on our investment and not a very effective means of providing fire support to special operations forces.

Of the 6,766 sorties planned, over half were aborted due to weather and a third were adversely affected by weather. Fewer than half of the targets were effectively engaged. Moreover, from 15,000 feet pilots cannot tell a tank from a derelict car with a pipe sticking out of the windshield. The report stated: “Almost completely unchallenged, Yugoslav forces could disperse and hide. . . . When revealed, slowness in the sensor-controller-shooter sequence often gave them enough time to relocate [and hide] before attacks began.”

With the documented inability of airpower to be 24/7 and all-weather, the only remaining means of supporting joint Special Forces in the littorals is with naval surface fire support (NSFS).

The difficulty of meeting NSFS needs stems from the Navy’s inability to provide a volume of fires: a large enough platform (ship) to carry both multiple guns and sufficient ammunition, and a weapon system that delivers a large enough payload with the lethality to destroy armored or hardened targets in a manner that is tactically responsive and affordable in large quantities. In short, that is the problem with missile solutions for NSFS. The Marines know their requirements can be met with reactivated battleships. General James Jones stated, “I regret we took them [battleships] out of service before we had actually fixed the naval surface fire support problem.” Unfortunately, the purse strings are held by a

Navy plagued by a groundless, indeed irrational, prejudice against battleships.

The NSFS gap can be quickly and affordably closed by extensively modernizing *USS Iowa* and *USS Wisconsin* to create a new class, the battleship guided-missile (BBG). This could be accomplished in about a year for \$1 billion—the original cost of the ill-fated *USS Cole*. Each BBG would provide 96 much needed Tomahawks much sooner with an ability to perform more missions and at half the cost of alternatives.

In September 1992, the Navy officially shifted from a blue water to a brown-water (littoral warfare) strategy. With this shift, the Navy acquired an increased responsibility for providing troops ashore with reliable, tactically-responsive, accurate, high-volume NSFS under all conditions. Without this support, our troops ashore run the risk of needless heavy casualties, being defeated, or both.

—Major Tracy A. Ralphs, USAR
Suffolk, Virginia

To the Editor—The article by Charles Dunlap has been partially overtaken by events. The Afghan campaign has taught the defense establishment and the citizens who fund it more about modern Special Operations Forces (SOF) than any informed analysis ever could. A picture of bearded Special Forces soldiers on horseback, carrying laptops in their rucksacks, is worth a thousand words.

A major lesson of Afghanistan is that SOF are the glue that enables joint, interagency, and multinational forces to function as a team. Linkage with American aircraft, the Northern Alliance resistance, CIA operatives, and NATO special forces troops illustrated what the SOF community has known all along: humans are still more important than hardware. Rather than being marginalized, Special Forces have been brought to the center of the new security architecture.

What is surprising about Dunlap’s article is that it comes from the Air Force, the service that eliminated Special Operations from its doctrine during the 1980s. Indeed, the consistent refusal of its leaders to buy special operations aircraft was a key reason that Congress finally had to direct the formation of U.S. Special Operations Command. It is gratifying to hear that the service has accepted SOF (even its own) as a legitimate player in joint operations.

It is equally gratifying that the CIA has realized that technology cannot replace human sources of intelligence. Another picture Americans will not soon forget shows CIA agent Johnny “Mike” Spann inside the Mazar-e-sharif prison just before he was murdered by terrorists. SOF is the link between the CIA and DOD on the ground.

Two things make SOF special: the capability to insert small numbers of highly trained, independent

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thinkers behind enemy lines to train and advise guerrilla forces in their own languages, and the capability to conduct surgical operations in confined spaces. Starting with hostage rescue, certain units have developed the tactics for attacking an enemy where no technology can get them—in underground bunkers and caves. The genesis of this adaptation appeared a decade ago with the threat of weapons of mass destruction developed and controlled underground.

Dunlap is rightly concerned about SOF being spread too thin, a very real danger in a community whose mantra is *quality, not quantity*. If the community cannot grow beyond bureaucratic and physical limits, the challenge of retaining focus must be met through specialization within SOF. SEALs are still in the mountains and Green Berets are still in the water. A key advantage of joint organization has been squandered.

Islands have always functioned as engines of evolution. The bureaucratic isolation of Special Operations Forces has produced an evolution in joint-mindedness from which all can learn. The paradox of a community apart becoming the glue for others can be explained by good leadership, joint doctrine, and realistic training with foreign militaries and in joint exercises around the globe.

—CAPT Paul Shemella, USN (Ret.)
Naval Postgraduate School

EXPERIMENTATION

To the Editor—In “Reassessing Joint Experimentation” (*JFQ*, Spring/Summer 01–02), Thomas Cooke gets to the heart of the problem with future experimentation. The problem is hampered by the debate between those who want to take us into the unknown and those who want to build bridges from the current to the future force. Cooke uses the word *revolution* without an adequate definition. A revolution in military affairs requires a catalyst. In the past it has been technologies such as the stirrup, horse, gunpowder, flight, or wireless communications. What is the enabler today for a revolution in warfighting? The major area that offers promise is information technology.

Joint Vision 2010 and *Joint Vision 2020* attempted to harness information technology to take the joint force into the 21st century. Those familiar with the program believed joint experimentation should focus on those joint C⁴ISR capabilities that information technology will change and that will empower the force to apply the military art in a different way. Many also believed new capabilities that would be a part of this new joint force are the purview of service experimentation programs/labs. Piggybacking on service experiments was a wise way to enhance joint C⁴ISR capabilities and also to allow the services to verify their experimentation in support of joint operations. Cooke’s arguments on

the conflict between using planned exercises for experimentation are valid and point out the competition for assets between the need to train and the need to experiment. However, in a budget-constrained environment, this conflict cannot easily be resolved. The article also astutely points out that there is inappropriate competition among CINCs over experimentation.

I applaud Cooke for a well-written and thought-provoking article. However, this debate has gone on for seven years and is a primary reason the program has had so many starts and stops. It is time for those with such ideas to provide *concrete* thoughts on the asymmetric threat that would drive us to revolutionary change and explain *how* to get to the future they envision.

—Col John A. Clauer, USMC
Philadelphia Consortium (Villanova
and University of Pennsylvania)

UNCONVENTIONAL STRATEGY

To the Editor—“A New Twist in Unconventional War: Undermining Airpower” by Gary Webb (*JFQ*, Spring/Summer 01) does a service by defining a mode of warfare that is very real but not widely recognized in the arena of air superiority. Recognition of the kind of war is being fought is a first step in winning it. For this he deserves our appreciation.

Many of Webb’s observations are insightful and useful. Veterans of operations over Iraq have complained about our strategy, and many of his assertions justify that concern. Our strategy is defensive, reactive, and expensive without having sufficient suppressive effect on Iraqi efforts to rebuild an offensive potential.

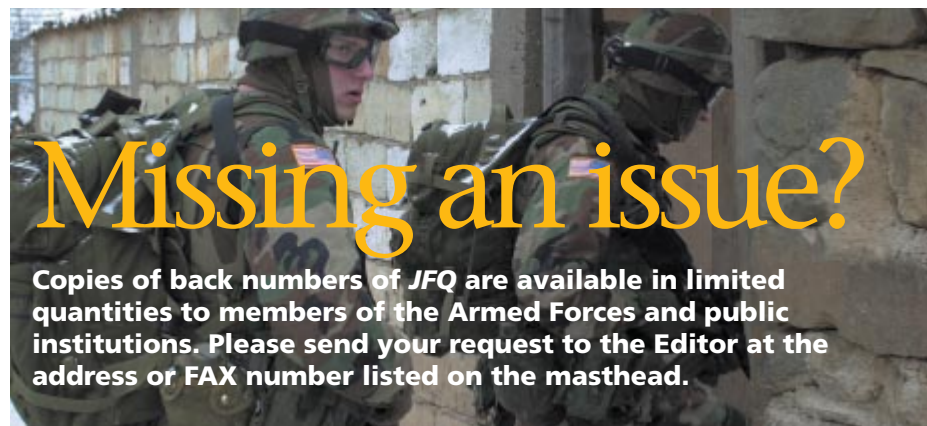
However, as the author proceeds into more detailed description and prescription, he wanders dangerously off track. He ascribes a Maoist-type approach to Iraqi guerrilla warfare, appearing to engage in what one CINC has called “data-free research.” He offers no evidence that the three-phase method is being used or is even known.

There are in fact other approaches a guerrilla fighter might use. At sea, there is a form of unconventional warfare that has been practiced and is currently being planned by potentially hostile but weak navies that I call delay, disruption, denial, and demoralization (D⁴). In this form of maritime warfare, the weaker side attempts to get a lucky hit on a key ship type in hopes of slowing things down to get some strategic wiggle room, possibly dissuading further enemy advance due to the lack of the ship’s combat potential, or maybe demoralizing the enemy populace due to the high casualties that normally attend the loss of a ship (everybody being aware of the Somalia debacle).

While it is easy to imagine the Iraqis pursuing a D⁴ strategy, one can also interpret their actions as opportunistic—just stirring up the environment to get us to make a mistake. Another possibility is that their actions are meant only for domestic consumption—to maintain military morale or popular legitimacy by standing up to the Americans. If Baghdad is acting on any of these motivations, it is hard to see how Webb’s strategy of indirect dominance would solve the problem. Moreover, as a strategy of reprisal, it does not appear that it would seize the initiative as he asserts. Webb goes on to state that the threat of retaliation may discourage further mischief. Again, he offers no basis for his thinking, and the sad history of the Israeli-Palestinian conflict is a cautionary example of the ineffectiveness of reprisal strategies.

Airpower is a potent and essential tool in the arsenal of democracy, but it is just one of many and should not be wielded in isolation. Hacking our way through the Gordian knot of Middle East politics will require more than the blunt instrument of military force. Webb’s recognition of a guerrilla mode of air warfare is both brilliant and useful, but his concept of indirect dominance gets us off track.

—Robert C. Rubel
Naval War College



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Escorting Serb detainees to Kosovo-Serbian border.

2nd Marine Division (Craig J. Shell)

Lessons from the War in Kosovo

By BENJAMIN S. LAMBETH

Allied Force, the most intense and sustained military operation in Europe since World War II, represented the first extended use of force by NATO as well as the first major combat operation conducted for humanitarian objectives against a state committing atrocities within its own borders. At a cost of more than \$3 billion, it was also expensive. Yet in part because of that investment, it was

an unprecedented exercise in the discriminate use of force, essentially airpower, on a large scale. There were highly publicized civilian fatalities; yet despite 28,000 high-explosive munitions expended over 78 days, no more than 500 noncombatants died as a direct result, a far better performance in terms of civilian casualty avoidance than either Vietnam or Desert Storm.

But Allied Force was a less than exemplary exercise in U.S. and NATO strategy and an object lesson in the limitations of Alliance warfare. A balanced appraisal must accordingly account not only for its signal accomplishments, but its shortcomings in planning and execution, which nearly made it a disaster.

Benjamin S. Lambeth is a senior staff member at RAND and the author of *NATO's Air War for Kosovo: A Strategic and Operational Assessment*.



55th Signal Company (Lorenzo A. Sam)

Administering first aid to Serbs in Kosovo.

Allied strikes against dispersed and hidden forces were largely ineffective, in part because of the NATO decision at the outset to forgo even the threat of a ground invasion. Hence Serb atrocities against the Kosovar Albanians increased even as air operations intensified. Some observers claimed that the bombing actually caused what it sought to prevent. Yet it seems equally likely that Milosevic would have unleashed some form of Operation Horseshoe, the ethnic cleansing campaign, during the spring or summer of 1999 in any event. Had NATO not finally acted, upward of a million Kosovar refugees may have been stranded in Albania, Macedonia, and Montenegro with no hope of return.

Although Allied air strikes were unable to halt Milosevic's campaign before it was essentially accomplished, they completely reversed its effects in the aftermath of the cease-fire. More than

by any reasonable measure, Milosevic's bowing to NATO amounted to his defeat

600,000 of the nearly 800,000 ethnic Albanian refugees from Kosovo returned home within two weeks of the air war's conclusion. By the end of July, barely a month later, only 50,000 displaced Kosovar Albanians still awaited repatriation. By any reasonable measure, Milosevic's bowing to NATO amounted to his defeat, and his accession to the cease-fire left him worse off than had he accepted the Rambouillet conditions, under which Serbia was to keep 5,000 security forces in Kosovo. Thanks to the settlement reached before the cease-fire, however, there are now none. Moreover, on the eve of Allied Force,

Milosevic insisted as a point of principle that no foreign troops would be allowed on Kosovar soil. Today, with some 42,000 soldiers from 39 countries performing daily peacekeeping functions, Kosovo is an international protectorate safeguarded by both the United Nations and NATO, rendering any Serb claim to sovereignty over the province a polite fiction.

Second, the Alliance showed that it could function under pressure even in the face of hesitancy by political leaders of member states. In seeing the operation to a successful conclusion, it did something it was neither created nor configured for. The proof of success was that cohesion held despite the combined pressures of fighting a war and actually going into Kosovo with no fixed exit date even while bringing in new members.

Finally, for all the criticism directed at less steadfast Allies for their rear-guard resistance and questionable loyalty during the air war, even the Greek government held firm to the end, despite 90 percent of its population supporting the Serbs through large-scale street demonstrations. True enough, there remain unknowns about Allied steadfastness in future confrontations along Europe's eastern periphery. Yet NATO maintained the one quality essential to Allied Force—integrity as a fighting cooperative.

Grinding Away

Despite its accomplishments, enough discomfiting surprises emanated from Allied Force to suggest that air warfare professionals should give careful thought to what still needs to be done to realize its joint warfare potential instead of basking in airpower's largely singlehanded success. Many of the surprises entailed tactical shortfalls. Examples abound: the targeting process was inefficient, command and control arrangements were complicated, and enemy integrated air defense system challenges indicated much unfinished work in planning suppression of air defense. In addition, elusive enemy ground forces belied the oft-cited claim that airpower has arrived at the threshold of being able to find, fix, track, target, and engage any object on the surface of the earth.

There were likewise failings in strategy and operations. First, despite its successful outcome, the bombing effort was a suboptimal application of airpower. The incremental plan NATO leaders chose risked squandering much of the capital that had built up in airpower's account following its ringing success in Desert Storm. The comment made by General Wesley Clark, Supreme Allied Commander Europe (SACEUR), that coalition forces would "grind away" at Milosevic rather than hammer him hard, attested to the watered-down nature of the strikes. By meting out the raids with such hesitancy, leaders remained blind

to the fact that airpower's very strengths can become weaknesses if used in ways that undermine its credibility. The first month of underachievement likely convinced Milosevic that he could ride out the assault.

Indeed, the way the operation commenced violated two of the most enduring axioms of military practice: surprise and keeping the enemy unclear of one's intentions. A strategy that preemptively ruled out a ground threat and envisaged only gradually escalating air strikes was a guarantee for trouble downstream, even though it was the only strategy that seemed politically workable.

In fairness to the U.S. and NATO officials most responsible for air operations planning, many of the differences between Allied Force and the more satisfying Desert Storm were beyond Allied control. Bad weather was the rule. Variegated and forested terrain hampered sensors. Serb surface to air missile operators were more proficient and tactically astute than the Iraqis. Alliance complications were far greater than the largely inconsequential intracoalition differences during the Persian Gulf War. Finally, because the goal

and staying power. By opting instead to accelerate ethnic cleansing, he not only united the West but also left NATO with no alternative but to dig in for the long haul, both to secure an outcome that would enable the repatriation of displaced Kosovars and to ensure its continued credibility as a military alliance.

Efforts during the first month were badly underresourced because of the prevailing assumption among NATO leaders that the operation would last just two to four days. The consequences included erratic target nomination and review, too few combat aircraft for both night and day operations, pressure for simultaneous attacks not only on fixed infrastructure targets but on fielded Yugoslav armed forces, an inadequate airspace management plan, and no flexible targeting cell in the combined air operations center (CAOC) for meeting General Clark's sudden demands for attacking fielded forces in the engagement zone. All these problems were a reflection not on NATO mechanisms for using airpower *per se*, but on strategy choices either made or forgone by political leaders.

Capabilities for detecting and engaging fleeting ground targets improved as the Kosovo Liberation Army (KLA) became more active. Nevertheless, persistent problems with the flexible targeting effort spotlighted deficiencies. The CAOC went into the operation without an on-hand cadre of experienced target planners accustomed to working together. Accordingly, leaders were forced to resort to a pick-up team during the first month of operations against Yugoslav forces. The fusion cell also frequently lacked ready access to all-source reconnaissance information.

The nature of the operation and the way it was conducted from the highest levels in Washington and Brussels placed unique stresses on the ability of Lieutenant General Michael Short, USAF, the combined forces air component commander (CFACC) to command and control air operations. For example, leaders had to contend with continuous shifts in political priorities and SACEUR guidance as well as myriad pressures occasioned by a random flow of assets to the theater, ranging from combat aircraft to staff augmentees in the CAOC. These problems emanated from a lack of consensus on both sides of the Atlantic as to the military goals at any given moment and what it would take to prevail. The *de facto* no friendly loss rule, stringent collateral damage constraints, and the absence of a ground threat to concentrate enemy troops into easier targets further limited the rational employment



55th Signal Company (Judy Ryan)

Kosovo Protection Corps during mass funeral.

was to compel rather than destroy, it was difficult to measure daily progress without a feedback mechanism to indicate the effect of the bombing on coercing Milosevic.

That said, the central question has less to do with platform or systems performance than with basic strategy choices NATO leaders made and what they suggest about lessons forgotten from previous conflicts. Had Milosevic been content to hunker down and wait out the bombing, he could have challenged long-term Allied cohesion

F-14 aboard *USS Theodore Roosevelt*.



U.S. Navy (Donna McKissic)

of in-theater assets and placed a premium on accurate information and measures that took a long time to plan and carry out. One realization driven home was the need for targeting cell planners to train together routinely before a contingency.

The greatest frustration of Allied Force was its slow start and creeping escalation. A close second entailed uniquely stringent rules of engagement that constrained combat sorties. Indeed,

Dark Future

Although Allied Force did not exhibit the ideal use of airpower, it suggested that gradualism may be here to stay if U.S. leaders opt to fight more wars for amorphous interests with a disparate set of allies. Gradualism suggests that airmen will need discipline whenever politicians hamper the application of a doctrinally pure campaign strategy. War is ultimately about politics, and civilian control of the military is in the democratic tradition. While warfighters are duty-bound to argue the merits of their recommendations to civilian superiors, they also have a duty to make the most of the hands they are dealt in an imperfect world. Senior civilian leaders have an equal obligation to stack the deck so the military has the optimal hand to play and the fullest freedom to do its best. That means expending the energy and political capital needed to develop and enforce a strategy that maximizes the probability of military success. Most top civilian leaders on both sides of the Atlantic failed to do that in Allied Force.

On the plus side, the success of the war suggested that U.S. airpower may have become capable enough to underwrite a strategy of incremental escalation despite inherent inefficiencies.

gradualism may be here to stay if U.S. leaders opt to fight more wars for amorphous interests with a disparate set of allies

the dominance of political inhibitions was a unique feature. Because the air war was an essentially humanitarian operation, neither the United States nor the European Allies saw their security interests threatened by ongoing events in Yugoslavia. The perceived stakes were not high at the outset, so committing early to a ground offensive was out of the question. Moreover, both the anticipated length of the bombing and the menu of targets were bound to be matters of heated contention.

Boarding CH-53D,
USS *Keasarge*.



U.S. Navy (Richard O'Connor)



Fleet Combat Camera, Atlantic (Brian McFadden)

Kosovar refugees at
Camp Hope, Pier,
Albania.

What made the gradualism of Allied Force more bearable was that the NATO advantages in stealth, precision standoff attack, and electronic warfare allowed the Alliance to fight a one-sided war with near impunity and achieve the desired result even if not in the ideal way.

With the air weapon now largely perfected for such established situations as halting massed armored assaults, it needs to be further refined for handling messier, less predictable, and more challenging combat situations—elusive or hidden enemy ground forces, restrictive rules of engagement, disagreeable weather, enemy use of human shields, lawyers in the targeting loop as a matter

of practice, and diverse allies who have their own political agendas—all of which were features of the Kosovo crisis. Moreover, although NATO political leaders arguably set the bar too high with respect to collateral damage avoidance, it seems the Western democracies have passed the point where they can contemplate using airpower, or any force, in ways as unrestrained as World War II bombing. That implies that along with new precision-attack capability goes new responsibility, and air warfare professionals must now understand that they will be held accountable.

One can fairly suggest that both SACEUR and CFACC were equally prone throughout Allied Force to remain wedded to excessively parochial views of their preferred target priorities, based on implicit faith in the inherent correctness of service doctrine. Instead, they might more effectively have approached Milosevic as a unique rather than generic opponent, conducted a serious analysis of his particular vulnerabilities, and then tailored a campaign plan aimed at attacking those vulnerabilities directly, irrespective of canonical land or air warfare solutions for all seasons.

Finally, the probability that future coalition operations will be the rule rather than the exception suggests a need to work out ground rules before a campaign, so operators, once empowered,

can implement the agreed plan with minimal political friction. As it was, Allied Force attested not only to the strategy legitimization that comes from the force of numbers a coalition provides, but also to the limitations of committee planning and least-common-denominator targeting.

The Ground Option

One of the most important operational and strategic realizations was that a ground component to joint campaign strategies may sometimes be essential to enable airpower to deliver to its fullest potential. General Richard Hawley, USAF, the former commander of Air Combat Command, was one of many senior airmen who admitted that the *a priori* decision by the Clinton administration and NATO political leaders not to employ ground forces undercut air operations: "When you don't have that synergy, things take longer and they're harder, and that's what you're seeing in this conflict."¹

Had Yugoslav forces faced an imminent ground invasion, or even a credible threat of one later, they would have been obliged to move troops and supplies over bridges that NATO aircraft could have dropped. They also would have been compelled to concentrate and maneuver in ways that made it easier to find and attack them.

Earlier, Samuel Berger, the National Security Adviser to the President, maintained that taking ground forces off the table had been right because anything else would have prompted an immediate public debate both in the United States and abroad which could have split the Alliance. Yet there was a huge difference between acknowledging that a land offensive could be perilous and categorically ruling one out before the fact. Considering a land offensive would have been demanding enough under the best of circumstances because of basing, airlift, and logistic problems; but denying the possibility of one was a colossal strategic mistake in that it gave Milosevic the freedom to act against the Kosovar Albanians and determine when the war would end. The anemic start of Allied Force because of the lack of an accompanying ground threat created opportunity costs that included failure to exploit the shock potential of airpower and to instill in Milosevic an early fear of more dire consequences to come. It encouraged enemy troops to disperse and hide while they had time, extended *carte blanche* to accelerate atrocities, and relinquished the initiative.

As for the oft-noted concern over an unbearable level of friendly casualties from ground action, there likely would have been no need to actually commit NATO troops to battle. The



B-52H taking off from RAF Fairford.

100th Communications Squadron (Randy Mallard)

mere fact of a serious Desert Shield-like deployment of ground troops along the Albanian and Macedonian borders would have made the enemy more easily targetable by airpower. It might also have lessened or deterred ethnic cleansing. In both cases, moreover, it could have enabled a quicker end to the war.

Even had Milosevic remained unyielding to the point where an opposed ground-force entry became unavoidable, continued air preparation of the battlefield might have prevented the residual enemy strength from significantly challenging land forces. Impending weather improvements and further air dominance would have enabled more effective air performance against targets, especially had KLA forces maintained enough pressure on the Serbs to bunch up and move.

The problems created by ruling out a ground option suggest an important corrective to the argument over airpower versus boots on the ground. Although Allied Force reconfirmed that friendly ground forces need no longer be inexorably committed to combat early, it also reconfirmed that airpower often cannot perform to its potential without a credible ground component in the campaign strategy. Airpower alone was not well suited to defeating Yugoslav forces in the field. Once the returns were in, it was clear that few kills were accomplished against dispersed and hidden units. Moreover, airpower was unable to protect the Kosovar Albanians from Serb terror tactics, a problem exacerbated by the stringent rules of engagement aimed at minimizing collateral damage and avoiding any NATO loss of life. As General Merrill McPeak, the former Chief of Staff of the Air Force elaborated, "In a major blunder, the use of ground troops was ruled out from the beginning. I know of no airman—not a single one—who welcomed this development. Nobody said, 'Hey, finally, our own private war. Just what we've always wanted!'" It certainly



Royal Canadian Mounted Police investigating mass grave site.

2: Marine Division (Craig J. Shell)

would have been smarter to retain all the options. . . . Signaling to Belgrade our extreme reluctance to fight on the ground made it much less likely that the bombing would succeed, exploring the limits of airpower as a military and diplomatic instrument.”²

Good Luck and Bad Weather

As for what should be learned from Allied Force, the head of the U.S. military contribution, Admiral James Ellis, made a good start in his after-action briefing to Pentagon and Allied officials, declaring that luck played the chief role. The commander of JTF

the commander of JTF Noble Anvil charged that NATO leaders “called this one absolutely wrong”

Noble Anvil charged that NATO leaders “called this one absolutely wrong.” Their failure to anticipate what might occur once their initial strategy of hope did not succeed caused most of the untoward consequences, including the hasty activation of a joint

task force, a race to find suitable targets, an absence of coherent campaign planning, and lost opportunities resulting from not adequately considering the unexpected. Ellis concluded that the imperatives of consensus politics made for an “incremental war” rather than “decisive operations,” that excessive concern over collateral damage created “sanctuaries and opportunities for the adversary—which were successfully exploited,” and that the lack of a credible ground threat “probably prolonged the air campaign.”³ It was only because Milosevic made a blunder no less towering than ruling out a ground option that the war had a largely positive outcome.

The Kosovo experience further suggested needed changes in both investment strategy and campaign planning. The combination of marginal weather and the unprecedented stress placed on avoiding collateral damage made for numerous delays between March 24 and mid-May, when entire air tasking orders had to be canceled and only cruise missiles and B-2s, with their through-the-weather capability, could be used. That spoke powerfully for broadening the



U.S. Air Force (Joe Cupido)

KC-135E refueling
Norwegian F-16A.

ability of other aircraft to deliver accurate munitions irrespective of the weather, as well as for ensuring adequate stocks. The extended bad weather underscored the limitations of laser-guided bombs and confirmed the value of global positioning system-guided weapons.

The munitions generally performed as advertised. Results, however, confirmed the need for a larger inventory of precision-guided munitions (especially those capable of all-weather target attack), as well as greater accuracy and more stand-off attack capability. At the same time, they indicated a continued operational utility for both unguided general-purpose bombs and cluster munitions for engaging soft military area targets deployed in the open. Other areas for improvement included interoperability across platforms, more multispectral sensors, higher-gain optical sensors for unmanned aerial vehicles, more data link interoperability, a wider range of bomb sizes, and weapons capable of conducting auto-bomb damage assessment. Still other force capability needs included better means for locating moving targets, better discrimination of real targets from decoys, and a way of engaging those targets with smart submunitions rather than costly precision-guided munitions and cruise missiles.

Viewed in hindsight, the most remarkable thing about Allied Force was not that it defeated Milosevic, but that airpower prevailed despite a risk-averse U.S. leadership and an Alliance often

held together only with paralyzing drag. Although airpower can be surgically precise, it is in the final analysis a blunt instrument designed to break things and kill people in pursuit of clear and militarily achievable objectives. Indeed, air war professionals have insisted since the Vietnam War that if all one wishes to do is send a message, use Western Union.

To admit that gradualism of the Allied Force sort may be the wave of the future for U.S. involvement in coalition warfare is hardly to accept that it is thus justifiable from a military standpoint. Quite the contrary, the incrementalism of the air war for Kosovo involved a potential price beyond the loss of valuable aircraft, munitions, and other expendables for questionable gain right up to the end. It risked frittering away the hard-earned reputation for effectiveness that U.S. airpower had finally earned in Desert Storm after more than three years of unqualified misuse over North Vietnam a generation earlier.

U.S. airpower as it has evolved since the mid-1980s can do remarkable things when employed with determination in support of a campaign whose intent is not in doubt. Yet to conjure up the specter of air strikes, conducted by NATO or otherwise, for the appearance of doing something without initially weighing intended targets or consequences, risks getting bogged down in an operation with no plausible theory of success. After years of false promises by its most outspoken prophets, airpower has become a vital instrument of force employment in joint warfare. Even in the best of circumstances, however, airpower can never be more effective than the strategy it supports.

JFQ

NOTES

¹ Bradley Graham, "General Says U.S. Readiness Is Ailing," *The Washington Post*, April 30, 1999.

² Merrill A. McPeak, "The Kosovo Result: The Facts Speak for Themselves," *Armed Forces Journal International* (September 1999), p. 64.

³ Elaine M. Grossman, "For U.S. Commander in Kosovo, Luck Played Role in Wartime Success," *Inside the Pentagon*, vol. 15, no. 36 (September 9, 1999), p. 1.

German machine gun
being deployed for
mock attack.



National Archives

Military Transformation and Legacy Forces

By WILLIAMSON MURRAY and THOMAS O'LEARY

The widespread belief that transformation involves uniform change and is driven towards a common goal reflects a misunderstanding of transformation and innovation. Moreover, to point at a date when transformation of a force will be complete is to miss reality, for by that time a host of factors will have changed—the strategic environment, technologies, defense budgets, and concepts that

underlie peacetime preparation for war. Transformation occurs in human organizations on an ongoing basis. Like their human masters, organizations that do not change die.

Two case studies—creation of combined arms formations spearheaded by tanks in the interwar German army and the American development of airpower tactics centered on precision and stealth during the Persian Gulf War—show how a relatively small number of transformed forces can greatly improve the entire force. There is also a belief that either technological change or new platforms are the primary drivers of transformation. History suggests otherwise. More

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important than new technology or weapon systems have been innovative concepts and the theoretical and doctrinal underpinnings of military organizations. Such a change lies in the ability of organizations to combine their experiences into a coherent picture of future war that is realistic and adaptable to changing realities. It then demands change in the widest sense: the transformation of the conceptual basis of future war throughout the force.

Technological change can help extend such a vision, but it is only an enabler. Without that coherent vision, developed into a broad, realistic doctrine that informs the force, transformation becomes platform-driven at best and an inadequate reaction to the external

stimuli of battle at worst. An example is the development of airpower doctrine by Britain and the United States during the interwar years. The Royal Air Force and U.S. Army Air Corps were so focused on the strategic bomber as the platform of choice that both missed the contributions airpower could make to joint warfighting. As a result, the Germans gained an advantage in the early battles of World War II through innovative use of combined-arms tactics involving infantry, tanks, and airpower.

noted, "War is an option of difficulties."¹ New ideas, however attractive, do not guarantee that a military can address the actual strategic and operational questions it will confront. Consequently, few planners are willing to bet all their resources on a single untried form of war. The Royal Air Force decision to invest most of its resources in strategic bombers, which flew in the face of any reasonable analysis of air combat in World War I, made British airpower singularly incapable of intervening in ground battles to defend France in May 1940. The loss of forty out of seventy bombers dispatched to attack bridges across the Meuse on May 14 suggests the dangers of betting on a single horse. Not only were the losses devastating, but the bridges survived.

A partially transformed force may possess formations, units, and capabilities that are incapable of synergy. Nevertheless, despite the considerable disparity between the *Wehrmacht Panzer* arm and the battered infantry units that made up most of the German army in 1944, the high command was able to knit together an effective scheme for defending Normandy. Here, a common, realistic warfighting doctrine was the thread holding forces with quite different capabilities together while maximizing their potential.

Let There Be Tanks

The Treaty of Versailles imposed crushing terms on Germany following its defeat in World War I. It set a limit of 100,000 men with 5,000 officers for the army and forbade weapon systems such as tanks, aircraft, submarines, and heavy artillery. Thus the military was denied crucial weapons that emerged from the war. How it addressed that predicament provides a study in intelligent innovation.

The army turned to learning the real lessons of the war under General Hans von Seeckt. By 1923 the Germans distilled their findings into a coherent doctrinal framework of combined arms tactics that emphasized decentralized leadership, mission-type orders, and ruthless training. Three *Reichsheer* senior generals refined the regulations in 1932. Of those officers, General Werner von Fritsch became the army commander in chief as German rearmament began the following year and General Ludwig Beck became chief of the Great General Staff, arguably the most prestigious position in the army. The resulting doctrinal manual, *Die Truppenführung*, was published in 1933 and became the basis for the approach to combat throughout World War II. While the army did not yet possess a single tank, *Die Truppenführung* explicitly foresaw armored fighting vehicles as a key to operational freedom—in other words, to translating the infantry exploitation of 1918 onto a wholly new plane.

militaries innovate during times of peace and within an atmosphere of ambiguity

Enablers and Intangibles

Enablers and Intangibles

In most cases, technology and platforms have been enablers that allow forces to maximize intangibles such as doctrine, training, and leadership. Moreover, history shows that militaries which best transformed their forces and then won major victories on the battlefield often possessed distinctly inferior platforms and technology. These examples reveal that the development, institutionalization, and refinement of a doctrinal framework for war that reaches across forces—however incomplete the technological transformation might be—are crucial.

Militaries innovate during times of peace and within an atmosphere of ambiguity. Leaders and planners rarely know when they will fight; nor do they always know who they will fight. Some questions are perennial. What will be the context of future war? What might its objectives be? How will enemy forces evolve and prepare? What tactical and technological changes might occur, and how might they influence the conduct of operations? The answers are unclear to those who transform forces in peacetime.

Leaders and their staffs consistently confront hard choices in peace as well as war. As General James Wolfe, the British conqueror of Quebec,

Adolf Hitler became chancellor in January 1933. In the initial years of the Nazi state, he focused on solidifying his dictatorship and overturning the provisions of the Treaty of Versailles. Knowing full well that his goals would lead to a general European war, *Der Führer* provided the services, including the new *Luftwaffe*, with blank checks to begin massive rearmament.

For the army, the processes could not take place within a theoretical framework. Germany confronted hostile neighbors, made doubly suspicious by the revolutionary nature of the new regime. Hitler recognized the possibility that they might take matters into their own hands by launching a preventive war. He warned senior generals during his first days in power that if France had any real leaders, it would attempt to throttle the Nazi regime at its birth. Thus the

not until 1938 did the Germans possess their first modern tanks

strategic imperative was a force that could defend *Reich* frontiers in the immediate future while preparing for a long-

term war of conquest. The initial force had to emphasize the army's current strengths and experience levels—conventional infantry and artillery.

Moreover, two difficulties militated against turning the entire army into a revolutionary, mechanized, combined-arms force: resources and the state of knowledge in the army as to mechanized tactics, operations, organization, and training. Germany had virtually no access to petroleum during the early stages of rearmament. The nearest major source was Romania, and the Romanians, along with the Czechs and Poles, were hostile to Germany. Thus a wholly mechanized army might have lacked fuel to even defend itself.

But equally important to planners was army inexperience with tanks after 1919. Heinz Guderian was shipped off to observe what the Swedes were doing when he was appointed as the General Staff officer in charge of armored warfare in 1926. As his memoirs make clear, it was the first time he had seen a tank.² Admittedly, the Germans maintained a secret military relationship with the Soviets during the late 1920s and early 1930s and were able to experiment with tanks and aircraft. But suspicion between them constrained what they could learn.

Thus, as rearmament began, the army possessed not a single tank, had few officers experienced with armored vehicles, and had only rudimentary designs for tanks on the drawing board. The first two vehicles that the German army received from Krupp, the Mark I (six tons and armed with machine guns) and the Mark II (ten

tons with a 20mm cannon), were obsolete when they entered serial production in 1934. Not until 1938 with the first Mark III (initially armed with only a 37mm cannon) and Mark IV (armed with a 75mm low-velocity gun) did the Germans possess their first modern tanks.

Nevertheless, even in 1940 the great majority of the German armored fighting vehicles would be Mark Is and IIs, while in 1941 obsolete Mark IIs and Czech tanks made up much of the *Panzer* equipment in the invasion of the Soviet Union. The most recent study of the Battle of France indicates an overall tank strength for the *Panzer* divisions of 2,439: 523 Mark Is, 955 Mark IIs, 106 Czech 35 (t)s, 228 Czech 38 (t)s, 349 Mark IIIs, and 278 Mark IVs. Opposing them were 674 modern French tanks in most respects superior to the Mark IIIs and IVs, with a further 2,535 tanks, the capabilities of which were similar to the more obsolete German models. The British contributed an additional 310 armored fighting vehicles, all superior to the Mark Is and IIs in virtually every aspect from armor to firepower.³ Thus the Allies had an advantage of over a thousand tanks when the 1940 campaign began.

The 1941 disparity between the *Wehrmacht* and the Red army was greater. Against a Soviet inventory of over 20,000 armored fighting vehicles, including awesome T-34s, *Panzer* divisions had only 3,255 tanks: 281 Mark Is,⁴ 743 Mark IIs, 157 Czech 35 (t)s, 651 Czech 38 (t)s, 979 Mark IIIs, and 444 Mark IVs. Thus over half of the armor in June 1941 was still obsolete.

Synergy Between Forces

Creative thinking about mechanized warfare more than compensated for the German lack of world-class tanks at the outset of World War II. In 1935 Fritsch and Beck were so impressed by the performance of tank units that they established the first three *Panzer* divisions as well as a number of independent tank battalions for infantry support and division-sized formations—called light divisions—that combined infantry, tanks, and cavalry to perform reconnaissance.

The army experimented with various armored formations in exercises from 1935 through 1938. At the same time, the General Staff was executing staff rides and wargames to test whether armored warfare could extend and speed the exploitation of breakthroughs. Beck conducted a staff ride in spring 1935 that featured a *Panzer* corps—before the army possessed an armored division. The General Staff studied possibilities for a *Panzer* army the following year. However, it was not until summer 1938 that leaders were confident enough about the capabilities of armored formations and access to petroleum to organize three more *Panzer* divisions. At the same time,



National Archives (The New York Times)

Invading Russia.

they did away with the independent *Panzer* battalions but kept the four light divisions—a combination of cavalry and motorized troops—to see how they would perform in the coming war.

Hitler attacked Poland in September 1939. Of 54 participating active and reserve divisions, only six were *Panzer*, while four were light and four were motorized infantry. The remaining forty were infantry or mountain divisions that differed little from German attack divisions on the Western Front in spring 1918. Yet that small *Panzer* force exploited crucial breakthroughs and destroyed any chance of a prolonged Polish resistance by the third day of the campaign. There had been considerable skepticism within the army over the ability of armored formations to exploit deep penetration, but the Polish campaign convinced most senior leaders of the capabilities of armored combined-arms forces.

The high command disestablished the light divisions and converted them into *Panzer* divisions immediately after the Polish campaign. Thus in the western campaign in May 1940, the *Wehrmacht* (including *Waffen SS*) consisted of 10 *Panzer* divisions, 8 motorized infantry divisions, and 118 regular infantry divisions. *Panzer* divisions made up 8 percent of the force, while the bulk of divisions were equipped and looked much

like other European formations. But the *Panzer* divisions offered capabilities for maneuver war that no other European army could match and *Wehrmacht* infantry divisions had the same doctrine and concept of operations as the armored force.

The synergy between the two forces proved devastating in the French campaign. *Fall Gelb* (Case Yellow, the code name for the offensive to destroy Western ground forces) rested on the assumption that the French would protect the Ardennes Forest with a relatively thin force while the bulk of Allied ground forces moved rapidly to defend Belgium. The Germans therefore planned to attack through the rugged Ardennes but needed to draw French attention elsewhere until they reached the Meuse River. Army Group B, under Colonel General Fedor von Bock, received that mission. Bock had three *Panzer* divisions (one assigned to the invasion of The Netherlands), as well as a picked force of paratroopers to attack the fortress of Eben Emael in

Belgium. Nevertheless, the bulk of his forces consisted of 26 infantry divisions which relied on horse-drawn equipment and marched to the sound of guns. While Army Group B hammered through northern Belgium, Colonel General Gerd von Rundstedt with Army Group A pushed three corps with seven *Panzer* divisions through the Ardennes. The mechanized forces were to immediately cross the Meuse when they reached it. If they failed to achieve a breakthrough, follow-on infantry forces would make the breach, allowing further exploitation by *Panzer* units.

The plan worked better than expected, so well in fact that General Heinz Guderian described it as “almost a miracle.”⁵ The Army Group B advance kept French attention focused on The Netherlands and northern Belgium. Bock’s thrust, aided by the skillful use of small paratrooper and glider-borne units, broke through Belgian and Dutch defenses. With the forward thrust of his infantry formations, Bock created the impression that the main German emphasis lay in the north—exactly where the French expected it.

A Victory for Legacy Forces

Meanwhile to the south, mechanized forces advanced through the Ardennes and reached the Meuse on the evening of May 12. The Germans launched their motorized infantry regiments (an integral part of each *Panzer* division) across the river the next day, breaking through the French

defenses within 24 hours. These infantry units, supported by artillery and sometimes *Luftwaffe* aircraft, made the initial breakthrough. Armor did not cross the Meuse until the engineers had constructed bridges fifteen hours after the initial crossing. Thus even the transformed, leading-edge *Wehrmacht* formations depended on legacy forces to achieve the crucial breakthrough, the first step in creating a breach *Panzer* units could exploit, although the attacking infantry suffered upwards of 50 to 70 percent casualties in the lead companies.

The ensuing exploitation, which carried the *Panzer* divisions to the Channel coast, cut off the Allied left wing, composed of the best French divisions and the entire British expeditionary force. The Allies extracted 330,000 troops from the resulting envelopment through the Dunkirk evacuation, but these forces lost all their equipment and much of their cohesion.

The German victory brought the collapse of France, while only the English Channel and Fighter Command saved Britain.

The 1940 campaign—one of the most devastating, one-sided victories in history—appeared to almost everyone except the Germans as a revolution in military affairs. In fact, it resulted from the combined efforts of legacy forces, which in terms of division-sized units made up 90 percent of the force structure, and the 10 percent transformed force. The French could not adapt to the tempo and exploitation posed by this combination. The glue that held both forces together was a doctrine emphasizing speed, decentralized mission-type orders, decentralized command and control, and rapid exploitation of opportunities.

Equally important was planning, in which the *Wehrmacht* utilized a combination of units with revolutionary capabilities to open the door to legacy forces and vice versa. Even in the north, small transformed units helped legacy forces. The glider-borne assault of eighty paratroopers, who took out the fortress at Eban Emael early in the offensive, enormously aided Bock's infantry advance while infantry units in the south, supported by artillery, largely enabled the breakthrough by Rundstedt's *Panzer* divisions in an operation that was fully in accordance with the German tactical practices of March 1918.

One could ask if the Germans might have done better by investing more in *Panzer* divisions.

Such Monday-morning quarterbacking overlooks the daunting ambiguities the Germans confronted as they began to rearm. We know how the *Panzer* divisions performed—they did not. With an economy ravished by the Great Depression, they made prudent choices and developed capabilities that nearly destroyed the European balance of power. Responding to the circumstances of the times, they developed a combination of new and legacy forces that proved all too effective on the early battlefields of World War II.

Dawning of Precision

When the Persian Gulf crisis exploded with the invasion of Kuwait in August 1990, American airmen were largely ignorant of the possibilities technological changes had brought about since the Vietnam War. A small percentage of the fighter force could employ precision-guided munitions (PGMs) while fewer had stealth capabilities. Yet the imaginative way in which a few air planners utilized these new technologies reveals how a small transformed group can enhance the overall capabilities of legacy forces.

Pundits depict the Gulf War as heralding a new era with its use of PGMs. It did not. The air campaign utilized 9,300 PGMs, but the two great 1972 air campaigns in Vietnam—Linebacker I and Linebacker II—dropped three times that number on targets in North and South Vietnam.⁶ Moreover, the greater accuracy of U.S. tactical aircraft was crucial in blunting the Easter offensive by the communists as well as to the devastating attacks that finally pushed Hanoi to the Paris Peace Accords.

Tactical air forces (Navy, Marine Corps, and Air Force) gave relatively little attention to precision weaponry between 1972 and 1990. The Navy and Marines made minimal efforts to adapt, and even the Air Force failed to highlight such capabilities in designing new aircraft. Virtually the entire F-16 fleet continued to use unguided munitions through the end of the Gulf War. When F-15Es showed up in Saudi Arabia in autumn 1990, they had no low altitude navigation and targeting infrared for night targeting pods despite their main mission being air-to-ground strike. Moreover, initial plans for F-111 deployment in August 1990 called for the D model, which had no PGM capabilities. Only through a last minute intervention by the Secretary of the Air Force were they replaced with PGM-capable F models.

The stealth situation was even more limited. The F-117 program had developed the first stealth aircraft, but only 59 had been produced. The program had remained in the black world through the end of the 1980s, with few people in the Air Force, including senior leaders, having been exposed to the aircraft or its capabilities.

the 1940 campaign resulted from the combined efforts of legacy forces and the 10 percent transformation force



U.S. Navy (Brad Dillon)

USS Missouri opening fire at Iraqi targets, Desert Storm.

The initial response of the Armed Forces to the Kuwait invasion was unimpressive. The Navy suggested resurrecting the route pack system, an operational approach that simply had divided Vietnam into Air Force and Navy sectors. The resulting air campaign lacked even elementary coordination and cooperation, minimized U.S. capabilities, and exacerbated interservice competition of the worst sort. Fortunately, the theater commander, General Norman Schwarzkopf, USA, rejected that approach and embraced a relatively new concept involving a single joint force air component commander (JFACC).

Parts of the Air Force showed little operational imagination about how the new technological possibilities could affect an air campaign against Iraq. Tactical Air Command (TAC), the forerunner of Air Combat Command, suggested the combination of a roll-back campaign with efforts to signal American resolve to liberate Kuwait. The plan represented a badly conceived replay of the Rolling Thunder air campaign against North Vietnam. The TAC proposal was to begin "with demonstrated attacks against high value targets . . . [and then escalation] as required until all significant targets are destroyed." The TAC briefing then stated that "this strategy allows time and opportunity for Hussein to reevaluate his situation and back out while there is something to save." The air effort would concentrate

on targets "that reduce [Iraq's] ability to project power . . . and infrastructure to support offensive operations."⁷ None of this demonstrated the slightest understanding that stealth combined with precision allowed a significantly different approach to air war.

Luckily, JFACC—Lieutenant General Chuck Horner, USAF—directed two airmen, Brigadier General Buster Glosson and Lieutenant Colonel David Deptula, to fashion a new operational approach to attacking Saddam. Both were imaginative planners who sought ways to leverage stealth and precision capabilities to improve the overall impact of legacy forces as well as new technologies. By early September they were in charge of a planning cell called the black hole because officers disappeared into it and did not return to their regular jobs.

The largest challenge confronting Glosson and Deptula was an integrated air defense system, which combined French and Soviet technology into an apparently formidable protection. They also had some of the most up to date Western and Soviet radars and missiles tied together by a sophisticated French computer system, code named KARI (Iraq spelled backwards in French). The duo rejected a roll-back approach in favor of an inside-out attack from the first. The initial

strike by Coalition aircraft would aim at taking down the communication centers in the middle of Iraq. Stealth would play the crucial role. And unlike many airmen, Glosson and Deptula believed that stealth F-117s could reach undetected deep into Iraq—all the way to Baghdad and the very heart of KARI.

Sowing Confusion

In planning the opening night's attack, Deptula provided an additional insight: What mattered was not the destruction achieved but the disruption and confusion sown throughout the air defense system. The first moves featured stealth F-117s dropping laser guided bombs (LGBs) and Navy Tomahawk land attack missiles (TLAMs) striking command and control nodes. After these strikes had disrupted air defense, non-

stealth forces would complete the take-down of the system. The emphasis on disruption showed most clearly in the attacks on the sector operating centers. Air Force intelligence had recommended the use

of upwards of six LGBs on each center to achieve complete destruction. But the black hole reasoned that one bomb on each would discourage the survivors from remaining in place to operate their systems.

The first attacks occurred 21 minutes before H-Hour, with Apache helicopters attacking frontier radar sites and opening the way for F-15Es, supported by EF-111 jammers, to strike Scud bases in western Iraq. By that time F-117s had reached Iraqi airspace and Navy ships had launched TLAMs. The first F-117 strike came nine minutes before H-Hour at the Nukhayb interceptor operations center (IOC), the reporting node with the best chance of picking up the F-15E mission aimed at the Scuds. At H-Hour, F-117s attacked the first targets in the capital region. Hits on the AT&T Building and the telecommunications center took CNN off the air and alerted planners in Riyadh to the strikes. Within the next six minutes other strikes hit the main air force headquarters twice as well as the air defense operating center, presidential palace, and Salman Pak IOC.

Shortly after the first F-117 strikes, TLAMs began to hit their targets throughout Iraq, including leadership, electric, Ba'th Party, and chemical facilities. By now the Iraqis knew they were under a full-scale attack but had no idea from which direction or with what weapons. At that point, the full weight of suppression of enemy air defenses (SEAD) attacked the Baghdad area. The assumption underlying this legacy force strike was that the opening F-117 and TLAM attacks disrupted defenses and at the same time brought them to full alert and readiness to engage the attackers.

The planners presented the Iraqis with what looked like a massive conventional air assault on their capital. Almost immediately after the F-117 and TLAM attacks, early warning radars indicated that large, non-stealth formations were approaching from two directions. It was seemingly the massive assault the Iraqis had expected the Americans would launch if they attacked at all. But in fact it wasn't fighter bombers, as it first seemed. Instead, both packages, including EA-6 and EF-111 jammers (to force enemy radars to come up to full power), consisted of SEAD aircraft. Those from the west came from carriers in the Red Sea while the package from the south consisted of Air Force F-4G Weasels. The Navy package fired off 25 tactical air-launched decoys within twenty minutes. BQM-74 drones, like the decoys, magnified the size of the attacking force as well as the closeness of attackers to Baghdad. Leading the Air Force package, the drones continued on to the capital, where they went into orbit.

All that activity was precisely what Air Force planners hoped for. At that point high-speed anti-radiation missile (HARM) shooters began firing. F/A-18s and A-7s from the Navy SEAD package fired off 45 HARMs in preset mode against known surface-to-air missile sites and six more at targets of opportunity, and the Weasels fired 22 missiles at operating sites, with ten assessed as destroying their targets.

At the same time the main SEAD packages were attacking Baghdad's air defenses, two similar packages struck, one against the air defenses near the Scud bases and the other in the east against the defenses around Basra. Again the initial moves spooked the Iraqis into full alert when their radars and sites were once more clobbered by large numbers of HARMs. As the Weasel wing commander noted, "The key is that very early on while the F-15s maintained air superiority, the Weasels maintained suppression of enemy air defense . . . because they beat them down quickly, efficiently, and the enemy knew if he turned his radar on he's dead. As a result of that, they are not turning their radars on. . . . They're firing their missiles off ballistically. For the most part they are completely ineffective."⁸

While we still lack a full accounting of what happened within the confines of the KARI system, there was clearly enormous chaos and misinformation among commanders and staffs responsible for air defense. They undoubtedly found it difficult to evaluate the damage. To add to their confusion, the second F-117 strike followed on the heels of the SEAD strike. With no apparent aircraft

what mattered was not the destruction achieved but the confusion sown



U.S. Air Force (Kimberly Yeargan)

F-117A ready for mission, Desert Storm.

overhead, bombs were again falling on headquarters and communications centers.

The entire KARI system collapsed during the first hours of the war, never to recover. The plan and its execution leveraged the technological and tactical possibilities of stealth and precision to maximize the more conventional possibilities of the remainder of Coalition air forces. The result was a devastating victory that largely eliminated the anti-aircraft capabilities on which Saddam had lavished so many resources for a decade. The fact that the attackers lost only one aircraft the first night (an F/A-18 to a MiG-29) underlines the extent to which clear conceptions had extended the transformed capabilities of the leading edge units to the entire force. The first night's attack on the

air defense system was the most decisive operational victory in the history of airpower.

The coming decades are likely to bring no significant increase in defense spending. Planners in the Department of Defense should think about transformation in terms of how best to combine new concepts of war with new technologies in order to extend capabilities rather than radically transforming the Armed Forces as a whole. By so doing, there is the possibility of moving into the future with the capabilities needed to meet a broad range of challenges. Such an approach would also allow for prudent changes that address the fundamental, unchanging nature of war, and the fact that human conflict is a life-and-death matter in which confusion, uncertainty, fog, and friction will always dominate the landscape. **JFQ**

NOTES

¹ See Fred Anderson, *Crucible of War, The Seven Years War and the Fate of Empire in British North America, 1754-1766* (New York: Alfred A. Knopf, 2000).

² Heinz Guderian, *Panzer Leader* (New York: Ballentine Books, 1956), p. 12.

³ Karl-Heinz Frieser, *Blitzkrieg-Legende, Der Westfeldzug 1940* (Munich: Oldenbourg Verlag, 1995), pp. 48-49.

⁴ Robert J. O'Neill, "Doctrine and Training in the German Army," in *The Theory and Practice of War*, edited by Michael Howard (New York: Cassell and Co., 1966), p. 157.

⁵ Guderian, *Panzer Leader*, p. 84.

⁶ Personnel conversation with Barry Watts, July 14, 2001; figures based on data collected during research for the Gulf War Air Power Survey.

⁷ Fax from General Griffith, TAC/XP, to General Alexander, AF/XOX, August 11, 1990, "CENTCOM Air Campaign Plan," Gulf War Air Power Survey Archive, CHSH-14.

⁸ Charles L. Starr, "Special Study, History of the 35th Tactical Fighter Wing (Provisional): Operations Desert Shield and Desert Storm," Gulf War Air Power Survey Archive, NA-277, p. 179.



U.S. and German officers,
Bright Star '01/02.

1st Combat Camera Squadron (Patricia Bunting)

Europe's Military Revolution

By FRANÇOIS L.J. HEISBOURG

The revolution in military affairs (RMA) is not a European concept but American, generated shortly after the Cold War. Moreover, it was the Soviets and not the Europeans who introduced the term *military-technical revolution* in the early 1980s. This semantical absence of Europe is not fortuitous. European political, military, and analytical communities have been loath to recognize the *R* in RMA—the *revolution*. For good or ill, there has

been resistance to the idea that a quantum leap is occurring which can be compared to the impact of technological breakthroughs such as gunpowder or, a few centuries earlier, the stirrup. There are reasons for such skepticism, if only because these developments didn't revolutionize warfare in a day. Gunpowder appeared in Europe no later than 1249. The first canon (bombards) were used in siege warfare on the continent no earlier than 1314, and the first muskets entered battle around 1550. Lances, pikes, and swords were still the weapons of choice at the beginning of the Thirty Years War (1618–1648). This sense of gradual change rather than instant transformation tends

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AP/Wide World Photo (Remy de la Mauvinière)

Eurofighter Typhoon at Paris air show.

to color European attitudes towards RMA. In a less conspicuous category of inertia, we have the corporatist and bureaucratic interests of those who feel threatened by the revolution, but that is not a European monopoly.

There is also a widespread tendency in Europe to put the emphasis less on strictly *military* change—the *M* in RMA—than on the strategic transformation of truly revolutionary proportions evident from the end of the Cold War. This has led one analyst to coin the expression *revolution*

national strategic surveillance and reconnaissance assets are a tiny fraction of U.S. capabilities

in strategic affairs: Lawrence Freedman's well-argued analysis is particularly revealing of European diffidence vis à vis RMA.¹ Indeed, from a European standpoint, the disappearance of the Iron Curtain and the Soviet armies from the center of Europe is indisputable physical evidence of a revolution accomplished whereas RMA is a work in progress. Furthermore, the strategic revolution continues to have a massive impact on pre-existing European force structures and doctrines, ahead of and along with the consequences of the revolution per se.

However, these reasons for European aloofness should not be misinterpreted. First, the effects of the strategic revolution and of RMA are generally mutually reinforcing; therefore the same steps tend to address both. Second, European forces must often go through substantially greater change than has the U.S. military. By

virtue of its geography, the American Cold War force posture relied heavily on offshore assets, notably in Europe, and on force projection (reinforcement) capabilities from the continental United States, whereas continental European force structures emphasized territorial defense based on conscription since the enemy was next door. Hence the Europeans, in coping with the strategic revolution, have sometimes taken the lead in certain aspects of RMA notwithstanding their comparatively narrow resource base. Third, there has been a widespread acknowledgement in the European strategic and military community of the need to gear up to the consequences of RMA, notably in light of the Kosovo and Afghanistan air campaigns. This recognition runs against the twin obstacles of time and cost, but it is there nonetheless.

For analytical purposes, our appraisal of European performance will be divided into three categories: battlespace management, essentially through command, control, communications, computers, intelligence, surveillance, and reconnaissance (C⁴ISR); battlespace action, focusing on precision strike assets; and RMA-capable force structures.

The Transatlantic Gap

Battlespace management is the most significant European weakness in terms of RMA and the hardest to remedy. No individual country can command and control joint theater-wide force projections of greater than divisional scope; furthermore no such ability exists in the collective framework of the emerging security and defense policy (ESDP) of the European Union (EU). National strategic surveillance and reconnaissance assets are a tiny fraction of U.S. capabilities. The reasons for Europe's lag are manifold, and not all result from its own failures. Foremost, there is the weight of the Cold War legacy, during which the only major contingency was the possibility of war in Europe itself, with an integrated NATO handling the conduct of operations and U.S. assets playing an essential role. The newness of ESDP—which essentially began in 1999—and the lack of critical mass of European nation-states individually come next. Finally, the United States has discouraged European acquisition of independent strategic intelligence gathering, force planning, and collective theater-command capabilities in no uncertain terms. Washington's fight against "needless duplication" by EU may be justified insofar as NATO or the United States may provide timely and unstinting access to the corresponding C⁴ISR assets, although such a proposition would assume that an abundance of such assets already exists: but it would be unwise to pillory the Europeans for their lack of C⁴ISR in the same



Italian Bright Star participants.

1st Combat Camera Squadron (Patricia Bunting)



Italian pilots during Clean Hunter.

52nd Communications Squadron (Michelle S. Roquid)

does not have, the union will have to provide on its own; and even where access may exist, there are few areas where C⁴ISR is so abundant that the Europeans should do nothing. Finally, the Europeans—especially France, Spain, Italy, and Germany—have also found that the quality of access to U.S. C⁴ISR assets can be improved if one has demonstrated the will and ability to acquire one's own capability. The French, in particular, believe that the acquisition of a dedicated reconnaissance satellite system (Helios I from 1995 onwards) has enhanced French-U.S. cooperation in strategic intelligence. Germany is investing in radarsat reconnaissance (SAR Lupe), while France is due to launch its first Helios II satellite in 2004.

Although far behind the United States, the Europeans have also been improving their limited C⁴, with the British followed by the French now able to project joint theaterwide national command capabilities for less than corps-sized operations. They also have a reasonably good record in tactical intelligence-gathering unmanned aerial vehicles (UAVs), which were heavily used in Kosovo, notably by the Germans and French. However, the Europeans are only beginning to work with U.S. and Israeli firms on long-endurance drones.

The gap between the United States and Europe is also substantial in terms of intelligent weapons and brilliant munitions. And unlike the C⁴ISR situation, there are no good reasons. Today not a single country possesses the equivalent of the American joint direct attack munition (JDAM), although France is due to have its functional equivalent in 2004. Air launched cruise missiles (ALCMs) are under development but won't be in service before 2003–04. Stocks of laser-guided bombs (LGBs), where they exist, are insufficient. France had to borrow a supply from the United States during the Kosovo air war. The situation is better with anti-radar missiles and suppression of enemy air defenses generally. As for support aircraft, offensive electronic warfare assets are scarce or nonexistent in most air forces. In-flight refuelling (IFRF) aircraft exist at just a tenth of U.S. numbers (and less in terms of overall fuel load), with only part of the difference with

U.S. capabilities being attributable to Europe's greater proximity to potential areas of operations.

No technological barrier is involved in most of these instances. European industry is capable of designing and producing global positioning

breath. The real objective for the Allies is to strike the best possible balance between European investment in C⁴ISR—a particularly costly and demanding area—and the use of NATO and U.S. assets. In terms of access to force planning assets, current negotiations between EU and NATO illustrate this process. What the Alliance denies or



USS Enterprise and Charles de Gaulle in the Mediterranean.

U.S. Navy (Doug Pearlman)

system-inertial navigation system (GPS-INS) kits, ALCMs, LGBs, and IFRF aircraft. Nor is cost a satisfactory explanation as far as “shooters” are concerned: GPS-INS kits are cheap, and the current British-French air-launched cruise missile development costs only a tiny fraction of platforms such as Eurofighter or Rafale. Neither is American

better than America’s. First, as already indicated, the Europeans have generally faced far more radical force structure reforms than the United States. With the exception of the United Kingdom since 1961 and tiny Luxembourg since 1967, at the end of the 1980s all European forces were not only conscript-based but essentially focused on in-place defense. Moving to force projection thus involved dramatic doctrinal, organizational, and structural reform. Such obstacles can naturally deter progress, and countries such as Germany and Italy have yet to really bite the bullet; but once the process has been decided on, the result is akin to a true zero-based transformation. There is little in common between France’s lumbering 293,000-strong ground forces of 1989, with 60 percent conscripts, and today’s lean and mean army of 136,000 professionals. Beyond the figures, the radical nature of the transformation lends itself to innovative approaches. The French Army Doctrine Center, established in 1999, offers a good example of how the winds of reform and creativity have been blowing in the West’s oldest military establishment.

the Europeans have generally faced far more radical force structure reforms than the United States

pressure an issue. One can only attribute the lack of RMA weapon systems to the inertia of vested interests, both industrial and military. Platforms designed during the 1980s generate real production business today, whereas work on precision guided munitions is largely developmental and unit costs are lower. Platform numbers and promotion prospects tend to come together. In traditional air forces one doesn’t always earn one’s wings by “flying” stand-off missiles or UAVs.

The above notwithstanding, Europe’s positioning in RMA capable force structures is less disadvantageous, and in some instances arguably



982nd Signal Company (Matthew P. Stenion)

Spanish soldier on Kosovo-Macedonia border.

The Purple Culture

Secondly, jointness has been pursued energetically in some instances. The British lead the effort with a Chief of Defence Staff possessing vast powers, commanding an organization with a relatively strong purple culture that extends to war college training, doctrine (with the joint doctrine center up and running), and procurement. France, although not as systematically, has moved to fully joint war college training and has had an integrated procurement executive, an area where the United States remains extraordinarily unjoint, since the early 1960s. Naturally, these reforms are not entirely attributable to RMA requirements as such. A narrower resource base directs efforts towards jointness, whereas the post-Cold War strategic environment leads to setting up theater-scale joint task forces. But the net result is in line with RMA.

Future prospects for the revolution in Europe will revolve around three interconnected issues: money, interoperability, and Europeanization.

Money. Even without any increase in defense expenditure, the Europeans could introduce substantially more RMA-relevant systems by changing the terms of the traditional trade-offs between shooters and force multipliers on the one hand and guided munitions and platforms on the other. With structural reforms now being completed in some countries, more attention can be paid to reviewing those trade-offs. This is particularly true of France, which in the 1990s was saddled both with the costs of platforms ordered during the 1980s and with the traumatic transformation from conscription to professionalization.

However, if the major countries will have ALCMs and JDAM-type bombs as well as new long-range air transport assets (with the A-400 M)

within a few years, the fact remains that Europe will need to spend more on defense to be part of RMA. In particular, the gap in military research and development is unacceptable and growing, with Europe spending \$10 billion versus \$50 billion for the United States in FY03.

Interoperability. Across the board budget increases will be necessary if Europe is to remain able to interoperate with U.S. forces. Since the latter are benefiting from massive spending increases (from a DOD low of \$276 billion in 1998 to \$380 billion in 2003), the growing technological and capabilities gap between transatlantic partners will make systems interoperability ever more problematic. Such a trend will be damaging for all concerned. Politically, it will be difficult to sustain an alliance in which the United States does the sharp end while Europe does the low end. The Europeans will therefore need to follow Washington in closing the peace-dividend era. Symmetrically, the United States should encourage, not discourage, the Europeans in acquiring high-end capabilities (notably in C⁴ISR) and also support pooling individual efforts into the collective framework of European Community security and defense policy. Furthermore, the United States can boost interoperability by improving access to its technology.

Europeanization. This is the new frontier of defense policy in Europe. Although it is sensible to use existing NATO assets wherever possible, notably in terms of force planning, the Europeans need to generate savings and efficiencies by pooling their assets. A European transport command building on the procurement of the A-400 M by many air forces is one area of potential, as is development of a quasi-identical ALCM for the British and French air forces.

The United States can play a positive political role in helping its allies be greater partakers of RMA by giving its blessing to initiatives which add value to Western capabilities. Ultimately, however, Europe's ability to play a major world role will depend on its own efforts. **JFQ**

NOTE

¹ Lawrence Freedman, *The Revolution in Strategic Affairs*, Adelphi Paper no. 318 (Oxford: Oxford University Press for the International Institute for Strategic Studies, April 1998).

South Korean
marines conducting
amphibious assault
Tok Sok Ri Beach.



55th Signal Company (Patrick Galtney)

The Republic of Korea Approaches the Future

By JIYUL KIM and MICHAEL J. FINNEGAN

The Republic of Korea (ROK) has embarked on a journey that could transform its military in the next ten to twenty years. As a key U.S. ally, its force structure, along with underlying assumptions and doctrine, will have great impact on alliance maintenance, interoperability, and operations. If Washington desires a long-term coalition relationship

with Seoul, especially in a post-unification time-frame, knowing the direction of the development of Korean forces can enable a considered decision on whether and to what degree it should be part of the process. This article discusses where Korea is taking its military.

The Ministry of National Defense (MND) initiated an institutionalized reform by creating the National Defense Reform Committee (NDRC) in April 1998. The committee reports directly to the defense minister and has a five-year charter (1998–2003) covering nearly every aspect of the defense establishment and structure from barracks culture to strategic concepts, from acquisition to force structure.

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South Korean soldiers patrolling DMZ.

The Revolution in Military Affairs Planning Group (RMAPG) followed in April 1999 and was subordinated to NDRC to create a central authority to oversee near-, mid-, and long-term reform. The group was formed under a three-year charter to extend the work of NDRC by taking a long-range outlook on measures needed for the force of 2025—significantly seen as a post-unification setting.

Putting Pieces Together

Defense reform is part of a larger program to reform the government and society, covering every sector from administration and education to economics and finance. The election of long-time opposition leader Kim Dae-jung as President during the financial crisis of 1997–98 forced Koreans to examine their system. A nationwide restructuring binge followed. Two rounds of cuts reduced civil service ranks by 22,000 in the summers of 1998 and 1999. The government itself was reorganized. Prominent changes were creation of the

Ministry of Foreign Affairs and Trade from two separate ministries and combining the former Ministry of Finance with various independent agencies to form the Ministry of Finance and

the increase in the operations and maintenance portion of the budget was also troubling

Economy. Large conglomerates and banks were allowed to fail; Japanese popular culture, long forbidden, was allowed; and the new *sunshine policy* opened unprecedented intercourse with North Korea. The economic recovery, although troubled by the American economic downturn and rising energy costs, was often cited as a leading model for Asian renewal.

Interestingly, Seoul has undertaken a deliberate effort that addresses the Clausewitzian paradoxical or remarkable trinity of forces that characterize conflict:

- “blind natural force” or irrational force of “primordial violence, hatred, and enmity” expressed through the people
- “play of chance and probability” in the conduct and outcome of a conflict wherein “the creative spirit is free to roam” and thus is leveraged and moderated by the actions of the army and its commanders
- the role of reason, operating through politics and the government, that subordinates the military as an instrument of policy.

This theoretical foundation informs Clausewitz’s entire view of how conflict should be analyzed and waged. He asserts that a balance among the three tendencies is necessary to win wars. Korea’s efforts can be viewed as an integrated thrust to reform the operating actors of the Clausewitzian trinity—the people, army, and government—to bring balance and set the conditions for successful outcomes. The forces and actors exist in constant tension. Korean reforms, addressing all three, can be seen as a deliberate effort to reconcile these natural stresses and could result in a more coherent, strong, and prosperous nation.

The need for military reform was also driven by a perceived need to emphasize quality over quantity. This shift was driven by several factors. First were the budget realities in the wake of the financial crisis. The increase in the operations and maintenance portion of the budget (versus force improvement) was also troubling.

Second, as Korea’s political landscape changed from a three-decade pseudodictatorship under former generals Park Chung Hee, Chun Doo Hwan, and Roh Tae Woo to a civilian government in 1993 with the election of Kim Young

AP/Wide World Photo (Ahn Young-Joon)



U.S. Army (Giselle C. Knight)

ROK military police at Yongsan.

Sam, the military became depoliticized and decisively accountable to civilian authority and democratic process. Domestic demands from the people and the younger progressive officer ranks sent an unmistakable message that the military had to be more efficient. It also had to become a professional force that was an instrument of national security and not national rule.

Third, an increasing number of senior military officials understood the changing external realities that included not only political pressure for reform but the changing nature of conflict, force structure, and the way wars would be waged. The revolution in military affairs (RMA) threatened to leave Korea behind, which defense officials saw as unacceptable. Defense Minister Cho Sung-tae wrote, "Our preparation for future warfare, especially RMA, is not a matter of choice, but a must."¹

Fourth, threat perception had already begun a shift from a simple orientation on the North and communism to subregional, regional, and global events, especially to security concerns arising from China, Japan, and Russia. There was also

a sense that the American position in the region faced an uncertain future owing to the reemergence of Chinese power. More fundamentally, Seoul began to consider a post-unification scenario where the main rationale for its current defense strategy would disappear.

Finally, Korea desires a bigger international role. Its eager participation in the East Timor peacekeeping effort is only the latest in a series of international crisis response actions dating back to the deployment of 50,000 troops to Vietnam. Indeed, Seoul has yearned for more prestige and power on the regional and international stage since the mid-1960s. Its leading involvement in the Asia Pacific Economic Forum, Association of Southeast Asian Nations (ASEAN) Regional Forum, ASEAN plus Three dialogue, Four-Party Talks, Asia-Europe Meeting, and most recently the renewed proposal for a Northeast Asia security dialogue are rooted in Park Chung Hee's leadership in the formation of Asian Pacific Council in 1966.

Toward Self-Reliance

Korea's long-term defense posture is not set out in a single document but can be deduced from the reform programs discussed here and

weapon systems acquisition plans that have been made public. For long-term vision, this article will adopt the RMAPG-chartered endpoint of 2025. What is the defense concept for that date?

Seoul will have a self-reliant posture. This is a continuation of Park Chung Hee's *Chaju Kuk-pang* (self-reliant national defense) program and philosophy of the 1960s and 1970s and reflects a deeply rooted desire to be free from foreign influence or indebtedness. This same sentiment informs the North's ideology of *Chuche*, another term for self-reliance.

The standing force will be small, lean, volunteer-manned, professional, high-tech, and lethal. Efficient and transparent management will ensure

the biggest bang for the *won*. The force will provide regional deterrence against those who would contemplate aggression. It will also possess the capability for regional power

projection. The analog conjured by these features is not unlike the capability and posture of Israel. The motto for reform is *small but strong*. The operative terms are efficiency, transparency, and professionalism. The five-year NDRC charter has the following goals:

- establish the basis for building a strong and elite military
- build a force of professionals with pride and a strong sense of duty
- increase efficiency through management reforms and defense digitization
- win trust as an armed force of the people.²

NDRC was organized with enough political capital to make an impact. Headed by a retired four-star general with superb qualifications, the committee was established directly under the Minister of Defense. Four functional subcommittees, each headed by a two-star, illustrate the wide scope of the charter: military structure, defense improvement, personnel, and defense management. A high-powered review group vetted the effort.

Early on, the committee established a detailed program consisting of 58 specific reform projects. This number expanded as NDRC identified additional tasks and through the work of RMAPG. The President approved these initial reforms in June 1998, and reform actions were earnestly put into effect. The first major reorganization was undertaken at the ministry itself in January 1999 and included the joint chiefs of staff (JCS) and the service headquarters and involved several key features.

Establishment of the Defense Acquisition Office (DAO). The new office consolidated all aspects of the defense acquisition system previously fragmented across MND and JCS. More significant was the consolidation and simplification of the acquisition process. DAO and the acquisition system underwent additional reorganizations in 1999 and 2000.

Establishment of a digitization bureaucracy and program. In the same January 1999 reorganization, the defense vice minister was appointed the defense chief information officer (CIO) while JCS formed a major new staff section—the Central Directorate for Command and Communications—to oversee command, control, communications, computers, intelligence, surveillance, and reconnaissance (C⁴ISR) issues. Each service headquarters similarly designated its respective vice chief as service CIO and established a new staff section, an assistant chief of staff for command and communications or its equivalent, to oversee service-specific C⁴ISR. The effort to digitize the military and make its members information savvy extended throughout the echelons and ranks. A paperless document-handling system was established in MND while thousands of computer classrooms were placed in units down to company level to train all personnel. A grand plan for an integrated defense C⁴I system and a supporting digitized communications network were drawn up envisioning a three-stage process ending in 2015 and making the ROK military one of the ten most digitally advanced in the world. The system and network would achieve unity of defense C⁴I and advanced digital communications. The challenges are daunting. However, Korea's state of information technology know-how, the level of public computer familiarization, and the ongoing effort to build a civilian national high speed digital network suggest that the vision is achievable.

Korean RMA

A number of units and agencies were consolidated over the remainder of 1999 and into early 2000, including Defense Transportation Command, which gathered transportation assets from all services and assumed responsibility for all operational and strategic transportation planning; Army Aviation Operations Command, which consolidated attack and assault helicopter assets previously parceled out to armies, corps, and divisions (it also possesses an organic air assault infantry brigade, giving it the capability for limited independent ground operations); Nuclear, Biological, and Chemical (NBC) Defense Command to centralize operational NBC defense assets; and the Korea National Defense University combining three independent schools.

the effort to digitize the military extended throughout the echelons and ranks



AP/Wide World Photo

South Korean tanks
crossing Hantan River.

A controversial plan to reorganize how the army would resist a North Korean attack was suspended. The proposal would have replaced First and Third Armies, the two front-line army level commands, with Army Operations Command, thereby eliminating an army level headquarters. Second Army in the rear area would be replaced by Rear Area Command, reflecting a more comprehensive mission for rear area security and national mobilization. Creation of Army Operations Command was meant to mirror the fighting organization already adopted by the air force and navy while reducing senior officer billets. It would also address several organizational and staffing issues on the Combined Forces Command level. Nevertheless, opposition based on politics, budgetary constraints, and operational imperatives escalated and an action scheduled for December 1999 remained suspended.

The work of NDRC put into motion short-term reforms to establish the conditions for long-term development, but the formation of RMAPG in April 1999 signaled an earnest effort to truly transform the defense establishment. The group's three-year charter stipulated that the first year be focused on defining the environment, conditions, concepts, and specific reform and transformation measures. This process included an analysis of the security environment in twenty to thirty years, the direction of national development, and an appropriate security strategy. An important assumption was that unification of the peninsula will take place within 25 years. Another task was defining the conceptual foundation of a Korean RMA and how it would operate.

The final first year effort was to recommend actions to implement the desired changes. The second year would be spent developing action plans to implement the recommendations. The last year, 2001, would be devoted to institutionalizing the changes by updating policies and plans.

The group's work the first year was hectic and extended beyond the 12-month deadline. While the actual products and recommendations of the annual stages have not been made public,

a remarkable budget-related document was released in August 1999 and updated in September 2000 that, combined with press coverage and the 1999 and 2000 defense white papers, provide a glimpse of the vision for the Korean RMA.

Seoul deduced lessons from three recent conflicts that bear on the nature of war and

the force necessary to wage it. The Persian Gulf conflict showed that quality is more important than quantity. The dominance of American systems such as stealth, Aegis, Apache, Tomahawk, and the global positioning system taught Koreans that the side with the more advanced weapons holds the initiative. The use of integrated C⁴I systems based on networked computers was also seen as key to the allied victory. Moreover, Korea learned the criticality of timely logistic support.

Second was the Kosovo crisis, seen as a strategic victory brought by long-range precision munitions. It reinforced the lesson of the Gulf War, that advanced weaponry will continue to dominate the modern battlefield. More specifically, Korea saw the utility and dominance of satellite navigation, a fiber-optic communication network, and laser guided precision warheads. It saw the rise of Internet warfare and learned that striking targets from afar minimizes civilian casualties.

Finally, Korea drew lessons from its own Battle of Yangpyong, the naval clash off the west coast in June 1999. Despite the danger of drawing broad conclusions from limited engagements, this clash vindicated the enormous investment in the military since the 1970s. The victory went to the side with the more modern equipment manned by highly and realistically trained crews with high morale. This lesson has been used to argue that funds be allocated now for long-term force development.

The combined lessons for future warfare boil down to three principles. First, conflicts will not be large-scale total wars, but limited or local conflicts with specific objectives. Second, quality over quantity and the decisive potential of asymmetric superiority will be big factors. Included in this principle is recognition of the combat power derived from high-tech and digitization in precision sensors, high-speed direct communication nets, and robotics as well as the multiplying effect of an integrated sensor-C⁴I-precision-guided munitions system. Finally, as the future battlefield will not have a front line and thus no forward or rear areas, battles will be dispersed. These observations apply not so much to a war with North Korea as to a threat beyond the peninsula.

Keeping Up with the Neighbors

The immediate danger remains the North, but MND expects a gradual decline of the Pyongyang threat as unification progresses. At the same time it envisions other concerns such as the capabilities and intentions of China, Japan, and Russia. The ministry believes that those countries are developing their military capabilities to increase their influence over regional events. Especially worrisome is Japan's acquisition of high-tech weapon systems such as reconnaissance satellites, AWACS, Aegis, theater missile defense, the F-2, large transport ships, submarines, and aerial refueling—the very systems MND believes Korea needs. Seoul cannot match Beijing, Tokyo, and Moscow, but it desires adequate strength to deter them.

The ministry perceives two key weaknesses with regard to the North—continued dependence on the United States for deterrence and insufficient modernization due to budget limitations. In comparison to its neighbors, it sees the following shortfalls:

- inadequate intelligence collection, production, and dissemination systems as well as electronic warfare capability
- C⁴I-reconnaissance-surveillance shortcomings such as lack of ability to detect and differentiate deep/long-range targets
- inadequate precision targeting and strategic weaponry, especially the lack of medium- and long-range guided munitions, the short operating radius of fighter aircraft, and lack of open-sea and underwater capabilities
- insufficient air and missile defense, measures to block satellite operations, defense against biological and chemical threats, and civil defense
- technological gaps in microelectronics, robotics, unmanned aerial vehicles, sensors, lasers, and satellites.³

An urgent requirement is thus implementing an objective-oriented force improvement plan to provide an independent capability to



Korean supply ship
Ro Bong at Diego
Garcia.

U.S. Navy (Evelyn P. Haywood)



AP/Wide World Photo (Ann Young-Joon)

South Korean soldiers
in Hwarang exercise.

deter North Korea and an adequate national defense, defined as that level of force that will convince an enemy that it stands to lose more than it will gain by attacking.

The military of 2015 will be small but strong and capable of guaranteeing national survival in a changing security situation involving powerful neighbors. It will be an elite, high-tech, and digitized standing force possessing advanced capabilities and will be economically run with rational and efficient management procedures.

A five-stage evolution is envisioned during unification, an eventuality seen as a given. A portion of the force, 400,000–500,000, will constitute the elite standing force, considered indispensable even in the post-unification environment. The balance may be reduced as unification proceeds. The first stage is the current force of 690,000, which will be maintained. The second is when North and South agree to coexist, probably in some form of confederation. A reduction on the order of 100,000 is expected at that juncture.

Upon unification the force will grow much larger due to the need to absorb much of the North Korean military until it can be transitioned into civilian life. As the situation settles, this force will be reduced and finalized at the 400,000–500,000 level when the transition ends. Any future reduction will be tempered by the economic and employment situation. Today there is strong consensus that a significant reduction of the military cannot be implemented because, aside from threat perception, the civilian job market cannot absorb individuals who would not be drafted.

Four principles will guide the transformation in the next 25 years. First is improved defense capability, further defined as the gradual enhancement of the force based on technology to meet the needs of the future battlefield. An essential component is to develop a near-term capability to deter North Korea without assistance and to invest intensively in research and development to raise indigenous technologies to parity with other advanced nations. The next is the grand plan to establish a defense digital communication network, supported by satellites, that is tied to the

**the military of 2015 will be small
but strong and capable of
guaranteeing national survival**

Decontaminating
Korean F-5Es,
Ulchi Focus Lens.



Agence France Presse

national high speed network. This foundation will support a digitized and integrated defense C⁴I network for warfighting and an integrated, automated management network to support logistics, mobilization, training, planning, and personnel management. The third is to professionalize the force. There is wide consensus that the army should be reduced while the air force and navy are enlarged, in line with a high-tech force focused more on air and naval assets. Army to air force/navy manpower ratios ranging between 50:50 and 70:30 have been considered, in contrast with the present ratio of 80:20. The proportion of officers and NCOs will be increased to reflect the needs of a smaller, more professional force. Measures will be taken to improve the quality of life for personnel, especially careerists, to retain those who have received advanced and expensive training. The final principle is the rationalization of defense management systems and processes. Accountability, responsibility, expertise, and efficiency will be targeted. Logistics and acquisition will take advantage of cost-saving, off-the-shelf alternatives from the civilian sector.

The proposed future standing military will be based not on a specific threat, but on potential regional threats, with China and Japan heading the list. The capabilities foreseen are, broadly

speaking, those with a regional reach such as surveillance, targeting, and power projection—especially increased naval and air force capabilities. Whether the changes will result in a revolution in military affairs on the peninsula is debatable. Still, significant transformations in structure, process, and capabilities are in the offing that will have a significant interoperability impact for coalition operations between Korean and other national forces. The United States has a critical interest in understanding how the long-term goals of Korea as well as its short-term decisions to further them will affect both the day-to-day operation of the alliance and its continued strength. Our partner's force development deserves close attention.

JFQ

NOTES

¹ Cho Sung-tae, "Korea's Defense Vision for 21st Century," *Korea Herald*, December 13, 1999.

² Republic of Korea, *Defense White Paper 2000* (Seoul: Ministry of National Defense, 2000), pp. 203–04.

³ Ministry of National Defense, *Korean Defense Budget for the Future* (Seoul: Ministry of National Defense, 2000), p. 28.

Australian soldier in
the Outback.



USS Kitty Hawk (Lee McCaskill)

Australia and the Quest for the Knowledge Edge

By MICHAEL EVANS

Australian defense planners confront the painful reality that while strategic environments may change quickly, military force structures cannot. They face what former Defence Minister John Moore described as a “sea of instability,” stemming from an unanticipated upsurge of insecurity in the Asia-Pacific region, including a fragile post-Suharto Indonesia, a mercenary outbreak in Papua New Guinea, deployment of Australian

forces to help pacify East Timor, and the “Africanization” of local politics in South Pacific islands such as Bougainville, Fiji, and the Solomons. To complicate matters, Australia inherited an added strategic burden in 2001 arising from New Zealand’s decision to abandon even a niche high-technology warfighting capability. Moreover, the demands of global modernization and a long decline in defense spending have presented Canberra with the complex task of crafting a more flexible and multidimensional strategy.

Planners thus see benefits from acquiring selected information technologies arising from the American-led revolution in military affairs (RMA). For many strategists, such technology offers an

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U.S. Navy (Andrew Meyers)

HMAS Brisbane plying Australian waters.

important means of redesigning defense planning. Issues of capability, force structure, and joint doctrine are seen as having at least partial solutions through RMA research and development.

RMA suggests a dramatic phenomenon when in fact it is more a continuum of advances. It is about the accelerated integration of three general kinds of computer-age technologies into weapon systems and command and control networks: command, control, communications, computers, intelligence, surveillance, and reconnaissance (C⁴ISR); long-range precision strike; and stealth or

low-observable platforms. Furthermore, like most previous military revolutions, RMA is emblematic of Western concern about the likely contours for using armed force in a new age. If Napoleonic warfare heralded the age of revolutionary nationalism, if the rise of mechanized warfare is associated with the age of European fascism, and if the ascendancy of nuclear deterrence theory is identified with the Cold War, then RMA reflects ideas about the shape of warfare—present and future—in the global information age.

One historian of military revolution has noted that RMA incorporates both a political preference for minimum risk warfare and a technological quest for continued military potency by advanced Western liberal societies,¹ which can apparently no longer countenance the mass mobilization and ideological and social militarism of World War II and the first two decades of the Cold War. They now tend to field what have been termed *volunteer-technical* rather than *mass-reserve* forces. From a historical perspective, the contemporary revolution is best seen as a blend of political preference as well as a technological process in which Western democracies attempt to adapt to uneven but continuous military transformation under rapidly changing post-industrial and post-Cold War political conditions.

This article examines the official quest of an advanced Western-style liberal democracy to exploit RMA as both a preference and a process. Three areas are analyzed: first, Australia's general approach to RMA thinking between 1994 and 2000 and the evolution of an indigenous concept of an information-based military revolution—known as the *knowledge edge*; second, the specific development of the knowledge edge concept between 1999 and 2000 and the significance of the December 2000 Defence White Paper on RMA; and third, institutional challenges confronting the quest to redesign the armed forces around RMA ideas and technologies by the second decade of the 21st century.

From Dominance to Edge

RMA thinking in Australia was informal and concentrated on sifting through American ideas prior to 1997. There was considerable evaluation of experiments with information technologies, including command, control, communications, computers, and intelligence (C⁴I), real-time data dissemination, and precision munitions—many prompted by the lessons of the Persian Gulf War.

Official analysis particularly speculated on the benefits of gaining knowledge dominance from new information technologies, which was encouraged by strategic guidance between 1994

Royal Australian
Regiment on patrol.



Australian Army (Bob O'Donahoo)

the attraction of technology that compensates for the weak force-to-space ratio is obvious

and 1997 emphasizing the Defence of Australia policy, first outlined in 1987 and based on the enduring value of strategic geography. Since Australia covers 12 percent of the earth's land surface but contains 1 percent of its population, the attraction of technology that compensates for the weak force-to-space ratio is obvious.

The continent's northern frontier equals the distance between London and Beirut.

A decisive event in the development of an official RMA initiative was the March 1996 election of a Liberal-National coalition government led by John Howard. Minister for Defence Ian McLachlan argued subsequently that the long-term changes in information technology would be as profound for military organizations as the internal-combustion engine proved in the early 20th century. He identified the key proven components of such a revolution as the lethality of weapons, projection of force over increased distances, speed of information processing, and growing capacities for intelligence gathering. He also pointed to the potential of unmanned aerial vehicles (UAVs) and increased interoperability with the United States.

He warned, however, that Australians had to be "careful to pick only those parts of RMA technology that address our needs."²

Bilateral cooperation on RMA issues increased significantly by the end of 1996. Australian strategists became immersed in the full range of American ideas, including exploiting information technology to achieve superior battlespace awareness and dominant maneuver; facilitation of precision strike and simultaneous close, deep, and rear attack; the potential of joint direct-attack munitions; and the value of global positioning systems. Future warfare specialists from the Office of Net Assessment, Center for Strategic and Budgetary Assessments, and war colleges became regular visitors.

Some analysts pointed out in early 1997 that Australia stood to benefit from automated combat systems, long-range precision-strike, stealth, and sensor technology as techniques that would permit greater control of the huge northern maritime approaches. Significantly, these views became influential in molding the Pentagon's institutional approach to the RMA debate.³

In December 1997, *Australia's Strategic Policy 1997 (ASP 97)* adopted a maritime concept of strategy and attempted to align strategy with post-Cold War realities. This review became the first official document to acknowledge the potential of

RMA in helping shape Australia's future strategic environment, stating:

For Australia [the revolution in military affairs] has particular significance. Not only will new technology provide military personnel with an expansive breadth and depth of information about the battlefield, but sophisticated strike weapons will give advanced forces the capability to destroy targets with an unparalleled degree of precision and effectiveness.

Mastery of information technology was considered an area where the 50,000-strong Australian Defence Force (ADF) could continue to excel. The review identified the highest priority as the *knowledge edge*—a refinement of earlier ideas based on using information technology to extract knowledge dominance in military operations. The concept was defined in ASP 97 as “the effective exploitation of information technologies to allow us to use our relatively small force to maximum effectiveness.”⁴

A knowledge edge was seen as offering three advantages. First, it would allow greatly improved surveillance of the maritime approaches. Second, when applied to the command, positioning, and targeting of forces, it would enable military deployment to maximum effect. Third, ASP 97 foresaw Australia developing a networked defense force in the early 21st century through its strong domestic information technology and

alliance with the United States. Such a force would be based on meshing sensors, platforms, space-based surveillance, long-range UAVs, over-the horizon-radar, and airborne early warning and control (AEWC) aircraft.

Dedicated Office

The Howard government introduced further measures to support an RMA effort during 1998 and 1999. Spending on related research and development was increased by Australian \$10 million and military technology links with the United States were extended. However, the most important measure was the April 1999 decision to create the Office of the Revolution in Military Affairs (ORMA) in the Military Strategy Branch of Australian Defence Headquarters. A dedicated organization in the heart of the defense establishment ensured that theorizing on information-age warfare would become institutionalized.

The office became responsible for coordinating two tasks. First, in close cooperation with the United States, it was charged with developing a transformation strategy for adapting selected

aspects of RMA technology to Australian circumstances. To this end, the office defined a revolution in military affairs as comprising “fundamental changes in the conduct of military operations resulting from innovative use of technologies, concepts, and organizations in response to political, economic, security, and social uncertainty.”⁵ This broad definition reflected a consensus among defense analysts that only a multidimensional approach to warfare would yield superior capability. The second task was to identify and analyze future warfare concepts that might incorporate necessary organizational, doctrinal, and technological changes into the current ADF.

ORMA developed a methodological strategy for an Australian approach to information-age warfare called Project Sphinx between 1999 and 2000. It provided a mechanism to develop strategic concepts for ADF that would unite policy with military operations and technical processes. Sphinx was to identify the most plausible future warfare concepts and assess their long-term investment implications through 2025.

Central to the methodology were three strategic propositions: the Asia-Pacific region is fundamental to national security; the information age has ushered in a new era in warfare; and the post-Cold War security environment is peculiarly volatile and unpredictable. With these propositions in mind, Project Sphinx sought to relate future warfare concepts to capability development in key areas such as precision firepower, information operations, and force projection. Methods have embraced special study teams, strategic wargaming, simulation, and creation of an RMA working group drawn from the Department of Defence, academe, and industry.

Sphinx has helped to make RMA thinking in Australia the most advanced in the Asia-Pacific region in just three years, as seen at an international conference initiated by ORMA in Canberra in May 2000. There was clear evidence of a knowledge gap between national defense analysts and most of their regional counterparts. Australian speakers talked about a future battlespace in which network-enabled operations, precision munitions, and joint warfighting concepts would predominate. In contrast, most Asian speakers stressed the marginal position RMA held in their strategic thinking. One Malaysian scholar spoke for many analysts, saying that with the exception of Singapore:

The RMA is of minimal utility today to Southeast Asia . . . there are no conscious attempts in the region to work towards a revolution in military affairs. This

Sphinx has helped to make RMA thinking in Australia the most advanced in the Asia-Pacific Region in just three years

Commander in Chief,
Pacific Command,
with Australian
forces, Brisbane.



U.S. Air Force (Paul Holcomb)

*is because the RMA is still a little irrelevant to the needs of the subregion. Regime security remains the primary paradigm for Southeast Asia.*⁶

By the beginning of 2000, response to the revolution had three main characteristics. First, planners favored a 2025 timeframe for assessing the value of RMA technologies. Second, most official strategists viewed information networking—the essence of the knowledge edge philosophy—as involving the rapid dissemination of real-time surveillance and targeting data as the most realistic outcome to emerge from the new technologies. Third, while accepting the necessity for American assistance, analysts consciously opted for a national approach to future warfare. This technique took the form of a *middle way* response to RMA trends that relied heavily on defense scientists for verification. The middle way strategy was essentially an indigenous transformation based on adapting information-age technologies to specific national needs such as surveillance, precision strike, and intelligence. The aim was to achieve a satisfactory level of interoperability with the United States while maintaining ability to undertake independent operations in the region.

Culmination Thinking

The knowledge edge, the centerpiece of Australian RMA transformation strategy from 1999, was reflected in two major official documents

published by the Department of Defence, *Defence Review 2000* and a white paper entitled *Defence 2000: Our Future Defence Force*.

Defence Review 2000 was released as a public discussion paper in June. Its objective was to educate the electorate about future security needs. A basic premise was that the military would rely increasingly on information technology and trained personnel. The paper noted that the importance of information technology would grow since the trend toward military modernization in the Asia-Pacific showed no sign of abating. The numbers of advanced combat aircraft, anti-ship and surface-to-air missile systems, and electronic warfare capacities had risen dramatically during the 1990s. As a result, Australia's traditional advantage in maritime and air platforms was gradually being eroded by block obsolescence. Upgrades in avionics, electronic warfare, and missiles for fighters and strike bombers, along with the acquisition of AEWG, were seen as critical to regaining equality with the best regional air forces.

Platforms which will reach the end of their service cycle by 2015 will include air force F/A-18s, P-3C maritime patrol aircraft, and C-130H transports, a navy guided-missile frigate, and many army wheeled vehicles. In addition, F-111 bombers, "the muscle of our strike force," will reach the end of their operational effectiveness by

Guarding transport,
Tandem Thrust '01.



3rd Marine Division (John Giles)

Australian-American cooperation was reaffirmed as the anchor of national security

2020. The cost for new equipment between 2000 and 2020, including aerospace combat power, was estimated at \$80–\$100 billion, exceeding current investment levels by half. In light of the challenges of growing regional military capabilities and an ADF heading toward obsolescence, a knowledge edge, RMA-style approach to modernization was described as vital. “[RMA] information capabilities,” *Defence Review 2000* stated, “are about applying the ideas of the knowledge economy to the business of fighting wars.” The most critical ADF assets would lie not simply in platforms and weapons, but increasingly in the integration of systems and skills to produce combat effects. The document continued:

Information warfare . . . the “revolution in military affairs” . . . is where our comparative advantage over potential adversaries is likely to last longest. In coming years, it will be harder for Australia to match regional numbers of platforms such as ships and aircraft, but we are well-placed to keep a lead in our ability to use what we have to the best effect.

Finally, Australian-American cooperation was reaffirmed as the anchor of national security. The review noted, “our alliance with the [United States], which leads the world in [information-age

capabilities], is vital to giving us affordable access to this technology.”

The white paper published in December 2000 provided the most detailed rationale yet by strategic planners for embracing the knowledge edge. The new blueprint represented the culmination of RMA thinking that had begun in *ASP 97* and reflected three years of close analysis of both technological innovation and the potential for revolutionary changes in warfare. It contained a general assessment of RMA as well as a specific analysis of Australian requirements.

The paper reaffirmed that RMA was based on a global information-technology revolution. It stated, “the most important development changing the conduct of warfare is the ability to increase vastly the speed and capacity to collect, organize, store, process, tailor, and distribute information.” Indeed, *Defence 2000* is peppered with statements such as “effective use of information is at the heart of Australia’s defence capability” and “exploitation of information capabilities will be critical to maintaining our edge.”

The main RMA characteristics were identified as a trend towards networking forces, systems, and capabilities to achieve multiplied combat power,



Australian and foreign students at Defence College, Canberra.

U.S. Air Force (Paul Holcomb)

along with appropriate reforms in organization and doctrine:

RMA technologies impart the ability to know more than one's adversary in relevant areas. This can result in a decisive military advantage when linked with appropriate weapons and concepts of operation. Indeed, this will probably be one of the decisive factors in warfare over the coming decades.

As foreshadowed in ASP 97 and *Defence Review 2000*, the white paper committed Australia to develop an advanced information-technology infrastructure based on major investment and cooperation with the United States. By the early 21st century, ADF will be based on a mixture of

upgraded and new air-sea platforms and appropriate information- and space-based surveillance capabilities—including emergent UAVs and uninhabited combat aerial vehicles.

However, the most significant indication that the knowledge edge had moved toward center stage in strategic thinking was the decision contained in the white paper which designated information capabilities as an integral part of a \$16 billion, ten-year Defence Capability Plan (DCP). Under this plan, information capabilities—comprising intelligence and surveillance, communications, information warfare, command and headquarters systems, logistics, and stealth—became a separate grouping to ensure their strategic priority. Between 2001 and 2011, \$2.5 billion will be spent on development. Indeed, in terms of expenditure, information technologies now rank third behind air combat (\$5.3 billion) and land forces (\$3.9 billion) but well ahead of maritime forces (\$1.8 billion) and strike (\$0.8 billion).

The priority afforded to the information capabilities grouping is justified in *Defence 2000* on two main grounds: RMA developments offer unique advantages in acquiring American-style information technology, and embracing information technology works to a national strength since Australia enjoys extensive computer literacy. The combination of RMA information technologies and computer skills ensures that the knowledge edge will long remain the foundation of national military capability.

The Budget Crisis

Although planners expect much long-term benefit from the knowledge edge, success depends not simply on ideas but on implementation and resources. Australia must overcome an institutional challenge to its national security—the need to adequately fund both operational commitments and future capabilities. In early 2000, Secretary of Defence Alan Hawke identified “a convergence crisis” stemming from the combined impact of financial, management, planning, and strategic pressures. At its heart lay a frozen defense budget and organizational methods that remained rooted in Cold War practice.

In 1999, at the same time ORMA and the knowledge edge concept were being established, Canberra fell into a defense budget crisis. Australia was spending 2.9 percent of GDP on defense in 1984. The figure fell to 1.8 percent (\$11.2 billion) by 1999—the lowest since the Munich crisis in 1938 and a 35 percent drop over fifteen years. By early 2000 there appeared to be an unresolved tension between a desire for advanced technology and a need for credible forces for operations in the

immediate region. It became clear that unless the budget was increased, the nation could not undertake even a modest middle way RMA and simultaneously retain high preparedness for current contingencies such as the peace enforcement mission in East Timor.

Defense spending became an acute political issue during 2000, with Hawke stating bluntly, "the bottom line is that Australia can no longer afford a balanced, self-reliant, capable, and ready defense force of 50,000 with its current capabilities on 1.8 percent of GDP." Concerning the convergence crisis he remarked:

The irony of our professional military performance in East Timor is that it masks the reality we face. Australia's national security is challenged by a convergence of financial, management, planning, and strategic pressures. . . . [The department's] ability to present a range of capability and military response options to government will be severely constrained if these combined pressures are left unchecked. This crisis, which has been building over the last decade, has now come to a head due to increased personnel costs and the costs of expanding and reequipping the capabilities of the ADF.⁷

The Department of Defence developed the unhealthy practice of holding down operations and personnel budgets to fund capability and modernization in the relatively predictable strategic environment of the later Cold War, when short-notice ADF operational deployments were rare. In the post-Cold War era, when ADF opera-

tional deployments increased markedly in areas as diverse as Somalia and Timor, this approach to managing capital equipment and projects proved untenable. By the late

1990s the needs of capability development and short-notice military deployments could not be met simply by scaling back spending on operational needs and personnel.

There was not enough money by 2000 to meet the triple demands of upgrades to existing platforms, purchase of new platforms, and acquisition of RMA/knowledge edge systems. A defense resource assessment report warned that Australia could not maintain even its present capabilities at levels of regional comparability without a spending increase. With 1.8 percent of GDP, the possibility of developing advanced capabilities while maintaining a credible force for current contingencies seemed bleak. As Hawke warned in April 2000, "at present and anticipated levels of funding, the ADF as we know it today will cease to exist."

Australia could not maintain even its present capabilities at levels of regional comparability without a spending increase

The budget crisis was not easily resolved. Defense spending and unreformed managerial practice became the focus of a sharp debate in the National Security Committee during 2000. Division developed over whether Australia required a warfighting "high-end" (shorthand for expensive high-technology) or a peacekeeping-style "low-end" military. According to press reports, those supporting a high-end force included John Moore, the Minister for Defence, and Alexander Downer, the Foreign Minister. Skeptics included Peter Costello, the Treasurer, John Fahey, the Finance Minister, and Max Moore-Wilton, the influential Secretary of the Department of the Prime Minister and Cabinet.

In August 2000, those favoring a low-end force and restricted spending appeared victorious when the government reduced the number of AEWCs from the seven which the air force wanted to four. It was noted that the East Timor deployment was expected to cost over \$4 billion from 1999 to 2003. One low-end advocate in the cabinet asked, "What use would AEWCs have been in Timor?"⁸

Optimists and Pessimists

The high-end advocates prevailed in the defense spending debate in the National Security Committee despite tactical reversals over AEWC by the end of 2000. The Howard government sought to provide a long-term resolution to the convergence crisis in its December 2000 white paper. The political aim was to balance strategic demands, defense capabilities, and defense funding by introducing the ten-year DCP. This plan, with emphasis on the RMA-knowledge edge, was unveiled as the cornerstone of *Defence 2000*.

The aim of DCP was to establish parameters against which spending could be increased by an average of 3 percent per annum in real terms between 2001 and 2011. Prime Minister Howard declared *Defence 2000* to be the "most comprehensive reappraisal of Australian defense capability for decades." This victory of the government's high-enders was captured by the national newspaper, *The Australian*, banner headline of December 7, 2000: "Enter the Cyber Warriors."

Under the 10-year capability plan of *Defence 2000*, the budget was scheduled to increase by \$500 million between 2000 and 2001, by \$1 billion between 2002 and 2003, and thereafter by 3 percent real growth yearly until 2010. Defense spending will in theory stand at \$16 billion by 2010, as opposed to \$11.2 billion in 2000. There are both optimists and pessimists. Optimists include strategic analysts such as Paul Dibb and



Australian Army (Bob O'Donahoo)

Leopard advancing on Freshwater Beach.

Hugh White, the principal architect of the 2000 white paper. Dobb has suggested that the financial commitment under DCP has made the new strategic blueprint “a benchmark.” Similarly, White believes that implementation of *Defence 2000* is unlikely to be disturbed over the next decade.⁹

Since DCP remains an unbinding commitment on future governments, some observers are pessimistic about the promise of a high-technology ADF with a knowledge edge capability. As *The Australian* has observed, a real concern with DCP is that no government has ever sustained a real increase of 3 percent in defense spending for 10 years. This view of the white paper echoes the dark days of the 1930s:

*Australia is now a substantially less secure country than it was five years ago. Our defence capacity is declining. Our security environment is more complex and less stable. The nations of our region are spending money on military acquisitions at an unprecedented rate—indeed, the Asia-Pacific is the fastest growing military market in the world.*¹⁰

As one observer outlined “the Government’s White Paper is all about Australia’s strategic decline. It’s about managing, slowing, but above all accommodating, our national strategic

decline.”¹¹ Only time will tell whether the optimists or pessimists are right.

As one observer outlined in a 1961 essay, for official technological research to succeed in Western democracies three important conditions must be met. First, the objective of research must be both clear and “not too grandiloquently vast.” Second, there must be a research organization strategically placed within the bureaucracy to interact with key policymakers throughout the “great underground domain of science and government.” Third, the committee must be armed with powers of action, inspection, and follow-up.¹²

So far, the RMA-knowledge edge initiative has fulfilled two of the three conditions above. As Ian Chessell, Chief Defence Scientist, noted in May 2001, the purpose of the knowledge edge must be to keep abreast of appropriate and relevant RMA technologies and integrate them into ADF combat systems. Such an ambition is both clear and not too sweeping. Second, ORMA is located inside the Military Strategy Branch—the very heart of ADF headquarters—and is thus positioned to coordinate warfare research. The third

Australians on hangar deck of *USS Essex*.



U.S. Air Force (Wayne A. Clark)

condition—action, inspection, and follow-up—exists only in the world of information-age theory so far. However, as evidentiary methods emerge, the knowledge edge organization will probably gain increasing influence over capability decisionmaking.

Intellectual Investment

Canberra must avoid two other pitfalls if it is to develop a credible knowledge edge. First, it is vital for the Department of Defence to nurture itself as a learning organization. Based on historical precedents, the demands of the knowledge edge will require a strong intellectual investment in strategic analysts. Despite Australian advances in RMA theorizing—arguably second only to those of the United States—there remains

despite advances in RMA theorizing there remains a growing shortage of younger strategic thinkers

a growing shortage of younger strategic thinkers. Fewer and fewer of the cream of university graduates are choosing to study strategy and international relations.

A defining characteristic of coherent strategic analysis lies in exploring the relationship between the empirical and the hypothetical—particularly when research is focused on integrating policy with operations, systems, and

technology. Such work requires sophisticated minds that can distinguish between information and knowledge. As Henry Kissinger has warned:

*It is commonplace to describe the information age as one of the great intellectual revolutions of history. . . . But what shapes the conduct of international relations and therefore the course of history is not only the number of people with access to information; it is more importantly how they analyze it. Since the mass of information tends to exceed the capacity to evaluate it, a gap has opened up between information and knowledge and, even beyond that, between knowledge and wisdom.*¹³

The shortage of educated strategists will hinder assessment of RMA over the long term. Australia must devote more resources to defense analysis and professional military education to achieve a healthy balance among policy issues, military theory, and operational practice. In generating a practical transition strategy from RMA theory to practice, it will need a strong civil-military cadre of policy and planning experts to sustain Project Sphinx and the knowledge edge.

Second, strategic planners must avoid the belief that dominant battlespace knowledge and stand-off air strike will abolish the age-old concepts of uncertainty and friction in war. Such views reflect the Jominian, mechanistic vision reminiscent of the so-called “whiz kids” whom Robert McNamara brought into Pentagon in the

early 1960s—which failed spectacularly against guerrillas in Vietnam. RMA advocates should remember that use of military force remains more art than science. Accordingly, the famous Clausewitzian dictum that in “the whole range of human activities warfare most closely resembles a game of cards” is still fundamental to realistic strategic thinking.¹⁴ Australian RMA specialists should temper their ideas concerning battlespace precision with the timeless warning by Thucydides about the fog of war:

*Think, too, of the great part that is played by the unpredictable in war: think of it now before you are committed to war. The longer a war lasts, the more things tend to depend on accidents. Neither you nor we can see into them: we have to abide by their outcome in the dark. And when people are entering upon a war they do things the wrong way round. Action comes first, and it is only when they have already suffered that they begin to think.*¹⁵

Canberra’s institutional embrace of an RMA initiative is just five years old. Much has been achieved despite financial stringency. Indeed, the creation of an RMA organization to analyze the implications of information-age warfare has been one of the least understood but most significant developments in the Howard government’s attempt to modernize the defense establishment. Despite the adage that it is easier to design the future than predict it, the development of the knowledge edge program is an important step toward transforming the national defense strategy to meet 21st century conditions. The RMA initiative has moved from an informal debate about knowledge dominance in the mid-1990s, to the official formulation of the knowledge edge between 1997 and 1999, to the emergence of a Knowledge Edge Information Capabilities Group in the 2000 white paper. The designation of information capabilities as a separate capability grouping—with more funding than improving current strategic strike—is evidence that the knowledge edge is viewed as the foundation of future military capability.

Finally, military technology is a crucial agent of change in any culture of modernity, but it never operates in a pristine setting. The Australian approach to RMA demonstrates how technological factors are conditioned by a nation’s institutional values and its political and strategic context. The search for a knowledge edge may yield broad lessons for other middle powers pursuing modernization with limited budgets. This process may illuminate a key intellectual problem of the information age—how new strategic theory is articulated by a professional community and how

questions of technology are nearly always mediated by a combination of policy, resources, and operational expertise. **JFQ**

NOTES

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² Ian M. McLachlan, “Defence Challenges in New Era Security,” in Alan Stephens, ed., *New Era Security: The RAAF in the Next Twenty-five Years* (Canberra: Air Power Studies Centre, 1996), pp. 3–8.

³ For further details see Michael Evans, “The Middle Way: Australia’s Response to the Revolution in Military Affairs,” *National Security Studies Quarterly*, vol. 6, no. 1 (Winter 2000), pp. 8–12; Michael Evans, *Australia and the Revolution in Military Affairs*, working paper, Pentagon Study Group on Japan and Northeast Asia, Japan Information Access Project, Washington, July 24, 2000, pp. 6–10; Keith Thomas, ed., *The Revolution in Military Affairs: Warfare in the Information Age* (Canberra: Australian Defence Studies, 1997).

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⁶ J. N. Mak, “The RMA in South-East Asia: Security and External Defence,” *Australian Defence Force Journal*, no. 144 (September/October 2000), p. 31.

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⁸ Robert Garran, “Defence’s Strategy for Survival,” *The Australian*, October 10, 2000, p. 4.

⁹ Evans, *Australia and the Revolution in Military Affairs*, p. 47.

¹⁰ Greg Sheridan, “They’re Beautiful Weapons, But We Need More of Them,” *The Australian*, December 8, 2000, p. 13.

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¹² Charles P. Snow, *Science and Government: The Godkin Lectures at Harvard University, 1960* (London: Oxford University Press, 1961), pp. 74–75.

¹³ Henry Kissinger, *Does America Need a Foreign Policy? Towards a Diplomacy for the 21st Century* (New York: Simon and Schuster, 2001), p. 284.

¹⁴ Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 86.

¹⁵ Thucydides, *The Peloponnesian War*, translated by Rex Warner (Harmondsworth, Middlesex: Penguin Books, 1972), pp. 81–82.



Battle formation at
National Training
Center.

TSC Graphic Service Center (Jeff Melbody)

Seeking Synergy

Joint Effects-Based Operations

By PRICE T. BINGHAM

In August, 2001, Paul Wolfowitz, the Deputy Secretary of Defense, said the Pentagon engaged in “a very significant paradigm shift” in the 2001 Quadrennial Defense Review.¹ As he later explained, “We are trying to move from a threat-based strategy to a capabilities-based strategy,” making it possible to fight any enemy.² Although he did not specify the type of capabilities

involved, DOD could quickly and substantially enhance its warfighting posture by focusing on defeating fielded land forces. The advantage is that, unlike missile defense, current technology makes it feasible and affordable to improve the Armed Forces dramatically. The benefits will be immediate and immense, making it possible to quickly win a major war even in a remote locale while also fighting smaller conflicts. But the challenges are also immense, in part because they require a fundamental change in focus. Such a paradigm shift will require a high level of civilian and military leadership.

Lieutenant Colonel Price T. Bingham, USAF (Ret.), formerly served as the chief of the Current Doctrine Division in the Airpower Research Institute at the College of Aerospace Doctrine, Research, and Education.

1st Infantry Division PAO (Larry Lane)

Stinger team rehearses firing procedures.

Dramatically enhancing the ability to defeat enemy land forces is possible if commanders are prepared to exploit unprecedented airborne ground surveillance and precision targeting technologies with joint effects-based operations (joint EBO). A commander conducting joint EBO would use information on the vehicular movement of enemy and friendly land forces throughout a large area to integrate precision air and missile attacks with surface maneuver in dynamic ways. The complimentary effects can enable a powerful joint warfighting synergy that presents the opposing commander with an intractable operational dilemma: moving his units makes both them and their supporting nodes visible for precision air and missile attack. But if a commander tries to reduce losses by dispersing and not moving his units, he makes them vulnerable to being bypassed or overwhelmed in detail by powerful air and land forces. He faces defeat either way. The dilemma is likely to cause the collapse of organized resistance.

Joint EBO resembles *Blitzkrieg*, with its emphasis on exploiting movement and human factors (fear, fatigue, and uncertainty) to achieve quick success in land operations. It recognizes the

powerful synergy possible when land and air forces are integrated to influence both sets of factors. It also uses a small portion of the overall force to achieve disproportionate effects. Unlike *Blitzkrieg*, however, its success does not depend on high-risk maneuver and an inept opponent.

Compared to attrition-oriented employment, joint EBO enables faster defeat of land forces using fewer assets and risking fewer friendly military personnel and civilians. It derives its paradigm shift potential from the fact that today, all armies posing a major threat of aggression depend on vehicles to move units to the battlefield as well as on the battlefield—even Taliban forces in Afghanistan. Moreover, all modern armies rely on vehicles for heavy firepower, armored protection, supplies, and engineering support.

Following Every Move

Recent advances in persistent, high performance, wide-area airborne ground surveillance using ground moving target indicator/synthetic aperture radar (GMTI/SAR) sensors and exploitation toolsets are fundamental to joint EBO. They



Hunter UAV at
Skopje, Macedonia.

786th Communications Squadron (Jocelyn M. Broussard)



Manually launching
unmanned aerial
vehicle in Bahrain.

U.S. Navy (Ted Banks)

commanders can treat enemy land forces as a system whose ability to function depends on movement and vehicles

offer the unprecedented ability to see and target enemy vehicles over a large area in all weather and from a significant stand-off distance. Seeing vehicle movement also makes it easy to locate, identify, and precisely target nodes that either support (refueling, repair, and transshipment points) or constrain (bridges, tunnels, and bypasses) enemy vehicular movement. Further, it defeats the camouflage, concealment, and deception measures that often frustrate the still imagery provided by electro-optical (EO) sensors and synthetic aperture radars (SAR).

The high-quality, movement-related information provided directly by GMTI/SAR surveillance also makes an indirect contribution when

used to support real-time decisions on where to employ other sensor systems, such as unmanned aerial vehicles equipped with high-resolution but very narrow field-of-view EO and SAR sensors. GMTI in-

formation on vehicular movement can also enhance the overall quality of information on enemy forces by helping prioritize the exploitation of previously collected data. The information provided by GMTI sensors directly and indirectly allows a commander to identify developing threats and opportunities created by enemy movement early enough to take action.

With the information made possible through the integrated employment of manned and unmanned sensors, commanders can treat enemy land forces as a system whose ability to function on either the tactical or operational level depends on movement and vehicles to create advantages such as superior force ratios, favorable positions, and surprise. And the importance of this movement is not limited to the battlefield. Campaigns are ultimately determined by the ability to move and sustain forces in order to engage opposing forces at the right place and time.

Developments in airborne battle management and all-weather, low-cost, stand-off fixed and moving target precision weapons provide the means for exploiting real-time information on vehicular movement with extremely destructive precision air and missile attacks. By targeting vehicles as well as the nodes supporting or constraining their movement, these attacks can quickly either stop militarily significant degrees of enemy movement or precisely inflict debilitating amounts of destruction on forces that continue to attempt movement. Either effect will quickly deny an enemy use of its vehicles, which will force it to fight like a 19th century army without the advantages of mechanization.

Equally important, stopping movement or inflicting destruction can be achieved at low risk to friendly personnel because U.S. air forces can not only quickly gain control of the air but conduct surveillance and precision attacks from a stand-off distance beyond the reach of non-radar guided surface-based air defenses. Further reducing risk is the fact that friendly land forces, unlike an enemy, would still have the advantages of

U.S. Navy



SEALs searching cave in Zhawar Kili, Afghanistan.



M-113 in combat maneuver training.

U.S. Army

vehicles and movement. A commander could then concentrate immensely powerful air and land forces against immobilized individual units.

The Fear Factor

Although precision weapons make joint EBO air and missile attacks far more efficient and effective in destroying targets with minimal collateral damage, their speed in stopping movement over large areas is due to their ability to create a powerful perception of danger. From Normandy to Kosovo, although air attacks generally destroyed relatively few vehicles, they convinced enemy soldiers that they faced immense risk if they attempted vehicular movement, which caused large numbers to remain stationary or abandon their vehicles. Rommel's chief of staff in Normandy revealed the impact of these decisions on German movement: "The technically superior enemy fighter-bombers neutralized practically all traffic during the day."³

The decision to abandon vehicles results not only from fear of attack on those vehicles, but also from the denial of fuel and munitions needed to continue moving and fighting. Air attacks contribute by destroying supplies or delaying their arrival by taking out crucial nodes and creating sufficient fear to stop drivers. This dynamic helps explain why advancing American forces have frequently discovered large numbers of unoccupied enemy vehicles.

The potential of joint EBO to transform land warfare has emerged only recently. In the past it was difficult to sustain enemy perceptions of danger because of the lack of precise information on vehicular movement which GMTI/SAR now provides and because precision air attacks generally required visual target acquisition and weapons employment and were thereby limited to daylight and good visibility. Even then the visual requirements meant that creating and maintaining the threat of attack depended on numerous armed reconnaissance sorties that faced high risk from flying within range of point air defenses.

But modern technology makes it possible to create and sustain sufficient perception of danger to stop most vehicular movement even in darkness and poor visibility. To an extent, the perception can be engendered and perpetuated by combining precision ground surveillance information with developments in global positioning system (GPS) guided munitions to eliminate the need for visual target acquisition and weapons employment against fixed targets like nodes vital to movement. And using this surveillance information to target GPS-guided wind corrected munitions dispensers filled with area munitions eliminates the need for visual target acquisition and weapons employment for attacks against large moving convoys.

Global Hawk UAV after coast-to-coast flight.



1st Combat Camera Squadron (Jack Braden)

the maneuver of friendly forces creates targets by causing an enemy to maneuver and mass its units

Of even greater import are the technologies recently developed under a Defense Advanced Research Project Agency/Air Force research laboratories affordable moving surface target engagement (AMSTE) contract. Their potential was demonstrated on August 28, 2001 when a vehicle moving on an Eglin Air Force Base test range was hit on the first try by a seekerless munition delivered from a significant stand-off distance.

Two high performance GMTI radars obtained precise location information on the moving vehicle, which was used to maintain track identification and guide the munition via datalink.

Apparent Advantages

Friendly land forces also play a vital role in joint EBO. One reason land forces are essential is that their presence requires an enemy to employ large numbers of vehicles which could be used as a mechanized army or, as in Vietnam, to provide logistic support for massive infantry. In either case the vehicles are vulnerable to detection and precision engagement.

Moreover, the maneuver of friendly land forces creates vulnerable targets for precision engagement by causing an enemy to maneuver and mass its units to achieve warfighting advantages against the friendly force. And if the commander

disperses his forces and stops their movement to reduce their vulnerability, friendly forces can use their own maneuver to either bypass or close with the isolated and immobilized units, assisted by close air support.

Developments in ground surveillance and precision attack can reduce friendly land force casualties. Thanks to reliable, real-time information on enemy and friendly movement, commanders can often avoid high-risk close combat with mechanized units except when their forces possess overwhelming advantages and such combat is essential. They can also exploit their information with precision air and artillery attacks that either destroy or slow adversary forces, preventing an enemy from closing with their forces except on their own terms.

The advantages provided by airborne ground surveillance's real-time information on movement were readily apparent in Desert Storm and Allied Force as well as in tactical ventures such as the All Service Combat Identification Evaluation Team exercises and the 4th Division warfighting experiments and capstone exercise. These efforts demonstrated that with wide-area GMTI ground surveillance information medium-weight Army and Marine units can prevail at low risk over heavier, more numerous opponents.

Marines searching
al Qaeda hideout.



U.S. Navy (Johnny Bivara)

It is important to note that these exercises and experiments did not exploit the same real-time information on the opposing force's movement to make precision attacks against them using fixed-wing aircraft. Also, since the drills had a tactical orientation, they did not show the powerful operational level possibilities when precision engagement is used to stop movement and combat support before enemy forces even reach the battlefield.

The capacity to conduct joint EBO will increase deterrence and, if deterrence fails, help quickly defeat enemy land forces while minimizing friendly casualties. The importance of achieving this paradigm shift is apparent in how Saddam Hussein, Slobodan Milosevic, and others depended on land forces both to seize and control parts of neighboring states and suppress their own populations. It is also seen in Afghan Taliban land force protection of Osama bin Laden's al Qaeda. Given the role these forces play in carrying out aggression, oppression, and protection of terrorists, deterring or stopping them quickly is vital. Strategic air and missile attacks can contribute and sometimes be sufficient, but the United States usually cannot rely only on those.

Events in the Balkans have shown that U.S. leaders can be deterred from taking timely actions or any actions at all due to fear of land combat, which has historically offered enemies their best hope of inflicting significant American casualties.

The importance this country assigns to casualties is well known. Before the Gulf War, Saddam Hussein believed that the prospect of fighting his army would deter the United States because of his assumption that Americans "cannot accept 10,000 dead in one battle."⁴ Reducing the risk of casualties is a key national security advantage that would result from implementing joint EBO.

Yet another benefit is the smaller number of air and land forces necessary to prevail. Reducing requirements also saves deployment time and needed support. These reductions decrease the requirement to forward deploy large forces for quick and effective threat response.

Implementing joint EBO can also enhance deterrence by making it less likely that an aggressor will have time to seize vital territories and populations before being decisively engaged.

Moreover, the paradigm shift will reduce the risk that the first forces to deploy will be so weak and dependent on large, vulnerable bases that they are likely to sustain significant casualties from anti-access capabilities.

Doctrinal Failures

Joint EBO is technically feasible and affordable in the near term. It is feasible because the paradigm shift relies on existing technologies, although key airborne ground surveillance and battle management systems are not available in the

required numbers. It is affordable because dramatically increasing overall military effectiveness and efficiency should lessen the combat forces needed to defeat enemy land forces compared to attrition-oriented concepts. Reduced requirements can quickly translate into support and transportation savings. For example, using AMSTE technology to eliminate the need for visual target acquisition and weapons employment allows use of bombers rather than many short-range, low payload fighters to target land forces. Since bombers can be based outside the theater, they not only reduce overall support and trans-

training should be more joint, with the Army and Marines providing units to represent opposing land forces

portation requirements but also the personnel exposed to anti-access capabilities. Similarly, by decreasing the need to find the enemy through contact with friendly land forces and to defeat powerful land units

in close combat, joint EBO should often lessen the number of land forces needed. The diminished close combat requirement also allows these forces to be lighter.

A number of challenges prevent the paradigm shift from being a sure thing despite its advantages. One is the need to institutionalize the joint EBO concept; but joint doctrine has serious flaws. Its guidance on how to create synergies through the integrated employment of forces provided by the various services is vague and provides for laborious processes that encourage service-centric rather than truly joint operations. Another flaw is its failure to call for the establishment of fully manned and trained joint force headquarters prepared to conduct joint operations. In the absence of such doctrinal guidance, joint headquarters become ad hoc and often dominated by a single service whose personnel are not prepared to dynamically integrate their own forces with those provided by other services. The conduct of joint operations in war becomes, in effect, on the job training and repeatedly reveals that lessons from previous conflicts in areas such as interoperability have not been fixed.

Joint doctrine problems are magnified by service doctrines, which underestimate the contributions of integrated employment. Doctrine with a parochial orientation leads to narrowly-focused equipment and training requirements that hamper interoperability and powerful joint warfighting synergies.

Other Concerns

Another challenge to joint EBO is the need for training that is more realistic. Training must

be conducted in more demanding terrain and weather. It should be more joint, with the Army and Marines providing units to represent opposing land forces, to include support assets, in order to train airmen and airborne battle managers in detecting and targeting moving vehicles and nodes supporting and constraining that movement. Realism demands that this training include simulated civilian vehicles.

Yet another challenge is the need to prepare commanders and their staffs, especially those on-board airborne command, control, intelligence, surveillance, and reconnaissance (C²ISR) systems, to integrate land and air operations more dynamically. This requires reversing the trend seen in Kosovo and in subsequent exercises of centralizing control of airpower operations against mobile targets—an approach that does not exploit real-time information through dynamic integration of air attacks with land maneuver. In addition, even with real-time information and modern communications, human factors such as limited span of control and the frictions of war will prevent any single commander from effectively exercising detailed control over large numbers of air attacks occurring simultaneously throughout a large area against dynamic targets moving on the surface or through the air.

Still another challenge is the need to procure the wide-area, real-time surveillance and battle management systems in the numbers needed to support intensive joint EBO training while simultaneously providing theater commanders with early and reliable indications of movement. Enhancements such as data links and sensor upgrades must be accelerated. For example, E-8C improved data modem connectivity to Longbow Apache and Link 16 connectivity to F-15Es has been demonstrated and should be incorporated. Expediting the procurement of the multi-platform radar technology insertion program will make it possible to track and target individual vehicles more reliably and precisely even in dense traffic. Enhancements are also needed so manned and unmanned systems can be employed as a closely integrated C²ISR team that can share information in near real-time.

Perhaps the biggest challenge to a paradigm shift is the requirement for a fundamental change in the warfighting focus of personnel. Air Force and Navy airmen have tended to concentrate on air combat, strategic attack, and strike operations but have not been as energetic at exploiting the airborne ground surveillance and targeting capabilities that enhance airpower's effectiveness against mobile land forces. Joint EBO requires that Air Force leaders no longer assume that defeating an enemy will be so costly in time and

Preflight check,
Predator UAV.



1st Combat Camera Squadron (Scott Reed)

lives that strategic attack will usually be the best use of airpower.

Implementing joint EBO will also demand rethinking the assumption that close combat is the only way to defeat opposing land forces. The success of the concept depends on recognizing the advantage of making air attacks the initial and sometimes primary lethal means of preventing powerful land forces from conducting effective operations. Soldiers and marines must also recognize the importance of using maneuver to set up enemy land forces for precision engagement.

Overcoming obstacles to joint EBO will require extraordinary leadership throughout the Office of the Secretary of Defense, the Joint Staff, and the services. Leaders must ensure that the joint force headquarters responsible for employing joint EBO do not use ad hoc procedures. They must make the necessary changes in programmatic priorities for equipment, emphasizing systems such as airborne ground surveillance and battle management capabilities that have a historically lower priority than combat air forces. They must also ensure that equipment is interoperable

and training is realistic. Last but not least, they must institutionalize all these changes with promotion and assignment policies that guarantee that military operations are led by officers with demonstrated knowledge and judgment in conducting joint operations.

JFQ

NOTES

¹ "Wolfowitz Promises Paradigm Shift with QDR But Offers Few Details," *Aerospace Daily*, August 9, 2001, p. 4.

² Jim Hoagland, "The Thinking Man's Military," *The Washington Post National Weekly Edition*, September 10–16, 2001, p. 5.

³ U.S. Department of the Air Force, Assistant Chief of Staff for Studies and Analysis, *A German Evaluation of Air Interdiction in World War II: SABER MEASURES (Echo)* (Washington: Headquarters, Department of the Air Force, 1970), p. 26.

⁴ Williamson Murray, *Air War in the Persian Gulf* (Baltimore: Nautical and Aviation Publishing Company of America, 1995), p. 58.



Operational Deception

1st Combat Camera Squadron (Jeremy Lock)

in the Information Age

By MILAN N. VEGO

Deception is as old as warfare. It can magnify strength for both attackers and defenders. It is among the least expensive military activities in terms of forces and assets. Yet for all its proven value, it generates little enthusiasm in the U.S. military. No operational deception plan was prepared for the Kosovo conflict of 1999, nor has one been evident for operations in Afghanistan. A popular view in today's information era is that deception is outdated: a stronger force need not deceive an enemy to win while a weaker party

cannot deceive a sophisticated enemy that has information superiority. Yet new information technologies offer both sides more, not fewer, opportunities for deception.

The lack of peacetime interest is hard to remedy once war begins. Deception skills must then be learned by trial and error and at great cost. Yet they can facilitate the element of surprise, which multiplies chances for a quick and conclusive success while minimizing personnel and material losses. Deception can cause an enemy to waste assets defending unimportant areas, disperse its forces, or reduce its readiness. Any strength, no matter how overwhelming, risks stagnation or decline if it is not accompanied by stratagems and deceptions. Even the strongest military should systematically undertake them.

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Why Deceive?

Designed to mislead by distorting, manipulating, or falsifying information available to it, deception can induce an enemy to do something contrary to its interests. Joint Pub 3-58, *Joint Doctrine for Military Deception*, defines it as “those actions executed to deliberately mislead adversary military decisionmakers as to friendly military capabilities, intentions, and operations, thereby causing the adversary to take specific actions that will contribute to the accomplishment of the friendly mission.” It is also understood to include planned measures for conveying true or false information pertaining to one’s strategic plans, strength, dispositions, operations, or tactics to cause an enemy to reach false estimates and act on them.

Deception can be designed to delude an enemy about the time and place of an attack. The Germans gained operational surprise through deception in their attack through the Ardennes in May 1940 and again in December 1944. They

deception can overload collection and analytical capabilities or block information

achieved both strategic and operational surprise in the invasion of Russia in June 1941. Likewise, the Japanese used deception to gain strategic, operational, and tactical surprise in attacking Pearl Harbor in December 1941. Deception can create an illusion of strength where weakness exists or weakness where there is strength. It can induce an enemy to focus forces in the wrong place and thereby violate the principle of concentration. It can also cause it to concentrate forces at the wrong time against nonexistent objectives.

In addition, deception can mislead an enemy about friendly capabilities, type of forces, or location of centers of gravity. Moreover, it can overload collection and analytical capabilities or block information, thus denying an accurate and timely picture of the operational or strategic situation. Deception can introduce noise into the collection and analysis of intelligence and weaken the clarity of signals. It thus makes sense to use it on any level of planning, if for no other purpose than to insert continuous uncertainty into the minds of enemy commanders about the value of the intelligence received. Once victimized, an enemy will be suspicious of future information. Deception, like surprise, should thus be considered a vital part of one’s intelligence activity.

Efforts differ in objective, area, duration, forces, and assets. *Strategic deception* is planned

and executed on the national or alliance/coalition level and is conducted both in peace and war. It could be designed to hide military or economic weaknesses, exaggerate strength in peacetime, or conceal preparations to open hostilities. It can trick an enemy into opening a new front or initiating a new campaign. It encompasses measures from political, diplomatic, and informational to the threat or use of force.

One of the most successful strategic deceptions of World War II was Allied Plan Bodyguard, adopted in January 1944 to mislead Hitler and the German Supreme Command about the place and time of the invasion of Normandy. This deception campaign contained several military and diplomatic plans: Fortitude to move the threat of the Allied landing from the French Atlantic coast to northern Norway; Zeppelin to prevent the Germans from moving timely reinforcements from the eastern Mediterranean to northern France; Vendetta to tie German forces to southern France by presenting a plausible threat of an Allied attack in that area shortly after the Normandy landing; Copperhead to convince the Germans that there was no immediate threat of invasion of northwestern France; and Ironside to simulate an attack against Bordeaux to commit the Germans to southwestern France. In addition, the Allies executed deceptions Graffham and Royal Flush to support Plan Bodyguard by exploiting German fears that Sweden, Spain, and Turkey might abandon their nominal neutrality and cooperate with the Allies.

Theater-strategic deception is a subset of national or coalition/alliance strategic deception aimed at misleading enemy leadership and theater commanders on the objectives, place, and time of an initial major operation in a new campaign. It is usually conducted in two or more theaters of operation or a major part of the theater of war. Deception plan Fortitude South was aimed at convincing the Germans to keep their Fifteenth Army deployed in the Pas de Calais area both prior to and after the Normandy landing. Creating a large fictitious force deployed in southeastern England helped accomplish this objective. The Allies convinced the Germans that the landings in Normandy were a diversion to force the Germans to commit their reserves before the main landing at Pas de Calais 45 days later.

In strict terms, *operational deception* pertains to actions and measures to deceive an enemy as to time, place, and details of the planned major operation conducted as a part of a campaign or major joint or combined operation with a strategic objective. Such a deception is normally multi-service and can require multinational assets. It must target enemy commanders with the authority and assets to react in the desired manner; and

an enemy must not have the capability to observe and evaluate the real situation

it must arrive through enemy intelligence systems. Deception plans should be designed so an enemy will collect carefully planted information, some false, some true, which appears logical and causes decisionmakers to reach the desired conclusion. Planning, preparation, and execution of operational deception is the responsibility of the joint force commanders and their staffs. Because centralized command and control works best, planning should be directed through a single organization that also directs implementation, seeing that all measures are coordinated toward the common objective. Deception plans should protect the operational commander's intent from hostile intelligence-gathering sources and reinforce expectations and preconceptions about one's own forces and future actions.

Tactical deception is intended to mislead opposing tactical commanders in terms of time, place, and details of a tactical action. In planning the combined amphibious landing in Normandy, Operation Neptune, the Allies prepared three naval and four airborne diversions integrated with the overall Fortitude South deception plan.

Efforts on all levels of war must be complementary; the success or failure of one affects the others. The main and subordinate deception plans should all accomplish their assigned objectives for optimal success. A failure on the strategic level usually dooms all secondary plans. Yet tactical or sometimes even operational plans can fail but still allow success if the strategic deception influences enemy strategic leadership.

HUMINT and SIGINT

Operational deception is normally a joint and often a combined effort. Relatively large assets are required. An enemy must be convinced that substantial multiservice forces are arrayed against it in the theater. The effort needed to realistically simulate activities on that scale—corps, naval or air fleets, or task forces—could discourage deception efforts as could the fact that it is difficult to conceal forces and their movements nowadays.

Operational commanders should not usually dedicate any part of their forces solely to deception. Plans that rely entirely on bluffing often fail. The optimal solution seems to be involving real forces only temporarily or establishing notional headquarters and forces or using the real and notional forces in combination. Therefore a key prerequisite is that an enemy must not have the capability to observe and evaluate the real situation.

Deception cannot succeed in wartime without developing theory and doctrine in peacetime. Preparation of assets must likewise start in peacetime and be continuous. Preparedness is crucial because there must be time to develop the concepts and allow planners and implementers to paint the deception picture. Planners must know how long a measure will take to affect the deception target and for the target to react.

Planners rely on intelligence to construct a plausible story aimed at the fears of enemy commanders and preconceptions of the opposing forces and situation. The theater must be seen through their eyes so the deception can be based on their concept of what friendly forces will do. Intelligence continues to be used to identify the parts of an enemy collection and evaluation structure the deception will target. After parts of the story are leaked, intelligence must assess their effect. Critical is predicting how the opposing commander will react. Planners then use intelligence to adjust both the deception and operation. The process requires continuous feedback from the targets about what an enemy does or doesn't know.

Operational intelligence relies more on human intelligence (HUMINT) and sophisticated signals intelligence (SIGINT) than on other sources in assessing enemy situations and intentions. Feeding certain signals to HUMINT and SIGINT collectors prepares the deception story for enemy consumption, while hiding the indicators of one's own disposition and strength conceals one's true intentions.

Success also requires understanding an enemy intelligence-gathering processes and decision cycle as well as the soundness of its operational and tactical doctrine. Because deception plans use hostile intelligence collection systems, they must identify their modes of collection, timeliness of reporting, relative weight of data received through each channel, and how that data enters the decision cycle to ensure that proper information is provided by appropriate means at the right time.

Deception is applied through passive and active methods. The passive mode is primarily based on secrecy and camouflage—concealing one's intentions and capabilities. Active deception normally involves a calculated attempt at disclosing half-truths supported by appropriate proofs, signals, or other material evidence. Enemy intelligence must discover planted evidence and become convinced of its authenticity and significance. Active deception normally depends on the success of passive deception.

Means and Ends

The larger the objective, the more diverse and complex the methods used. In tactical deception, ruses or feints could be sufficient, while on

Standing guard, Osan
air base, Korea.



1st Combat Camera Squadron (Sarayuth Pinthong)

the operational level, both military and nonmilitary measures may be needed. Methods range from spreading rumors and feeding false information to combat actions. On the highest level, diplomatic, political, economic, and informational instruments of national power are used to achieve strategic deception. Information plants and controlled enemy agents are often employed. Ruses, feints, demonstrations, and displays can tie down enemy forces in certain areas to ease resistance in the main sector.

The most common method of deception is misrepresenting one's intentions or capabilities through operational secrecy or more elaborate active deception that diverts attention. This approach was successful in the European theater in World War II because the Allies broke the German codes and played on Axis fears and preconceptions of Allied intentions. The key contribution of intelligence was creating a false order of battle for the deception plan. Otherwise the Allies could not have caused the Germans to react operationally because no actual forces were available for such purposes.

Strength can be misrepresented by concealing the location and type of one's forces, headquarters, and logistic elements. Such deception could create either an exaggerated or reduced evaluation of friendly capabilities. The perception of inflated strength can be reinforced

through a mix of real and fictitious forces or by inventing a completely notional order of battle in a locale an enemy considers critical, to include bogus headquarters and forces, communications networks and radio traffic, supply depots and other logistic elements, water facilities, pipelines, telephone and telegraph lines, and railroads and railheads. Dummy guns, tanks, trucks, and heavy engineering equipment can be concentrated, and practice target ranges and tank maneuver areas can be built. Troops or naval and air forces can be moved into attacking positions under the pretext of large-scale maneuvers. Operational security can be enhanced by denying information on the true purposes of such movements even to friendly forces.

On the strategic level, it is difficult to deceive an enemy as to real strength at the outbreak of hostilities because both sides have an accurate picture of the other's overall strength. It becomes easier as the war progresses. The Allies succeeded in creating notional forces during preparation for the Normandy landing and in many Mediterranean operations because the Germans had little ability to obtain or confirm an accurate picture. Excessive exaggeration of strength in individual theaters, however, may tip an enemy off.

Attackers can achieve surprise if their sectors of main effort are concealed by carrying out massive air strikes against secondary sectors, then suddenly shifting them to forces deployed in front of the main sector. The successful German offensive in the west in May 1940 was due in large measure to an elaborate deception plan. The Germans concealed their sector of main attack by employing their feared bombers and *Stukas* against targets in Belgium and The Netherlands until almost the moment of their operational penetration at Sedan.

Keeping Up Appearances

Deception measures can conceal one's real center of gravity. In a major operation (*Trappenjagd*-Bustard Hunt) in May 1942, General Erich von Manstein, commander of 11th Army, used extensive measures to deceive his Soviet counterpart regarding where his most capable forces were deployed. The German attack unexpectedly came from the south. Von Manstein recaptured the Kerch Peninsula. The Crimean Front lost 176,000 men while only 120,000 escaped the trap.

Another ploy is creating the impression of routine activities by conditioning an enemy to a pattern. The Germans used this method in preparing operational redeployment of two battle cruisers and one heavy cruiser from Brest through the English Channel in February 1942 during Operation Cerberus. They increased the intensity of their radar jamming over

actions must appear normal to enemy intelligence agencies

time. The British became so acclimatized to the jamming that they did not realize their radar had become almost useless.

Secret channels are one of the most effective factors in any deception or cover plan. The channels must thus always be under the close control of the officer responsible for theater deception. In all physical deception, actions must appear normal to enemy intelligence agencies, including radio intercept and monitoring, ground and air reconnaissance, and especially secret agents.

Electronic manipulation and simulation are highly effective. Manipulation involves altering one's own electronic order of battle or creating false levels of traffic or controlled security breaches. Electronic manipulation contributes to security. Simulation, in contrast, paints a fictional order of battle or inaccurate location of a genuine order.

Rumors can support the deception story, falsely indicating force movements or one's strength in a locale. Rumors are usually rampant before a major operation or campaign. They must be used with care since they can baffle friend and enemy alike; but their deliberate planting can create confusion over one's cover objective and

timing. They should not be initiated except in accordance with an approved plan.

Psychological operations (PSYOP) can aid operational deceptions even though their objectives are fundamentally at odds. PSYOP can promote the acceptance of a deceptive message by communicating only what one wants an enemy to hear, real or false, and then replacing it with something else.

The growing power of computers and global network connectivity has created an enormous capacity to process and distribute information. That, in turn, has increased the effectiveness and diversity of deception methods on all levels. The growth in the volume of information could saturate enemy processing and evaluation capabilities. It also drastically reduces the time the intelligence apparatus has to process, analyze, and disseminate its findings. Since the deceiver can saturate the target with useless data, a direct information attack need not rely exclusively on enemy ability to perceive or interpret it. Such an attack can aim at planting spurious information in a database, such as a false order of battle. The key is determining what fictions are desired. The attacker can also use *logic bombs* to incapacitate the opposing information system. These can lie dormant until activated by a date or random number and then damage the information system.

Another method is conventional attack against an information system such as computer network server farms or telephone switching facilities. The array of targets is enormous, and the more an enemy relies on information technology the greater its vulnerability. Hence the weaker side can also plan and execute deception because sophisticated technology is inherently vulnerable to even the most basic camouflage and concealment. Simple deceptions can be effective against some types of information attack while more advanced methods are needed to counter sophisticated efforts.

Plausibility, Security, and Coordination

Deception is always a supporting plan; an operational plan should never depend on it exclusively. A deception plan introduces a risk to the basic plan. Operational commanders and their staffs should evaluate that risk during planning, considering not only how the operation or campaign achieves the operational or strategic objective, but how deception fits into the overall military, political, and diplomatic scheme.

When both a primary and alternate plan are considered, they must be separated geographically to increase plausibility and decrease susceptibility to counterdeception. Allied strategic deception plan Fortitude encompassed two theaters,

Counter-infiltration
exercise, Korea.



U.S. Navy (Stacy Young)

northern and western Europe. Likewise, the operational deception plan for the invasion of Sicily in July 1943 involved the central and western Mediterranean. In contrast, the plan for the Normandy landing encompassed only the sea and coastal area from Pas de Calais in the north to Brest in the south.

Time must be available not only for planning but for evidence to be manufactured and received,

planners must ensure that each element of the scheme fits logically into the overall operational or strategic scenario

processed, and evaluated by the target and for a hostile operational commander to make a decision and take the desired actions, especially when a deception envisages enemy forces changing

location. Measures that cannot be concealed should be sequenced to generate an estimate of friendly capabilities and intentions that coincides with those in the deception plan. Finally, timing of the deception story should allow for desired actions to be initiated, transmitted to hostile intelligence, and analyzed by it before an enemy reacts.

Plausibility, security, and coordination are the key components. Plausibility is the most important. A plan cannot succeed if the target does not believe the story and consider it a logical

course of action. Plausibility helps preserve the integrity of the operation despite possible security breaches. Planners must ensure that each element of the scheme fits logically into the overall operational or strategic scenario. The deception story—often the best alternative course of action in the opposing commander's estimate—should focus on enemy expectations, preconceptions, and fears. This is difficult on the operational level because of the sheer size of the forces and area involved.

Plausibility depends on many factors. The enemy commander may not accept deception quickly; many signals might be required over time to convince him that his first impressions were wrong. He is more likely to accept a story that conforms to his preconceptions and biases. Moreover, the story must correspond with operational and strategic realities.

It is generally easier to maintain an existing belief than to change it. This makes it more critical to have a detailed and accurate knowledge of enemy perceptions, actions, doctrine, tactics, techniques, and procedures. The most effective deception stories are often those that do not cause an enemy to change anything.

Operations security (OPSEC) uses passive measures to conceal a deception and its elements. It is the defensive side of operational deception. Generally, the larger the deception, the more complex its plan and the longer its duration. The operational commander must thus balance time and space because the supporting plan must be maintained for weeks or months. The risk of discovery grows with time and the consequences can be devastating. The Japanese experienced a compromised plan in their Operation MI, which led to the Battle of Midway, when American cryptographers decoded the real purpose of their feint toward the Aleutians.

False information, selected leaks, half-truths, and misinterpretation help keep one's plan secure. The greatest problem for an enemy is generally deliberate leaks that might be insignificant individually but whose collective importance develops over time. Intentional and sometimes unintentional breaches of one's security can increase ambiguity for an enemy. A dozen German security breaches revealed Hitler's intentions in the weeks preceding the invasion of Soviet Russia in June 1941. Yet Stalin remained convinced that the massive German deployment in the east was a cover for the invasion of Britain.

A way to enhance OPSEC is to limit the personnel involved by creating a small, specialized planning section within a large headquarters and combining that with centralized direction and execution. Field Marshal Erwin Rommel, commander of Africa Corps and Axis forces in North

Africa, knew the need for OPSEC. He informed neither his staff nor the supreme command of his intentions. He especially distrusted the Italians because they were loose with security. Likewise, in their great surprise counteroffensive in the Ardennes in December 1944, the Germans limited the number of commanders who knew of the plan. Chiefs of staff of two participating army groups signed a pledge of secrecy and were under penalty of death if they leaked information.

The Ring of Truth

Deception security is often enhanced by misleading one's high commanders and their subordinates. Not informing one's forces enhances prospects for the entire plan because the troops are better motivated for the coming action if convinced that their efforts are real. In the Ardennes counteroffensive, German front commanders were convinced that massing supplies and withdrawing front line divisions were necessary to provide fresh troops for defending the Ruhr and the Palatinate. One way of enhancing a plan's security is by surrounding it with truth.

plan never stands alone but supports the campaign or major operation plan, therefore the plans must be coordinated. Commanders must ensure that plans prepared by their superiors and subordinates do not conflict with their own. A strategic deception plan can involve assets assigned to an operational commander who is not aware of the plan. Operational and tactical deception must also be synchronized. In addition, operational deception plans should be integrated into a strategic deception plan. Diplomatic, political, economic, and media elements must be coordinated on the strategic and operational levels.

Deception plans may use not only notional forces, but real forces, which might endanger the real plan if those forces interfere with the sector of main effort or accidentally reveal the true objective. Thus it is necessary to disentangle the deception from the real scheme during planning. These efforts should continue throughout a major operation or campaign.

Operational deception often requires moving large and diverse forces. Because it is unlikely that there will be separate forces for both the real and the deception plans, both should be executed simultaneously with the same forces. Congruence is ensured through coordinated planning. The operational commander should also be able to modify or cancel the entire deception.

A large-scale deception cannot be limited to individual elements. Military, political, economic, and informational activities may be needed. All must be harmonized with the overall scenario to mislead an enemy. Operational deception therefore depends on sequenced and synchronized employment of large and diverse forces and assets controlled by the operational commander in terms of time, space, forces, and objective.

Deception can be a force multiplier as well as a critical part of campaign planning. Operational commanders and their staffs must understand and apply its principles. New information technologies and techniques increase rather than reduce opportunities for deception, allowing both attackers and defenders greater choice of methods. Technology, no matter how sophisticated and available, cannot erase the need for wider awareness of the usefulness of deception on all levels of military activity. Deception should be integral to any major operation or campaign. **JFQ**



Fleet Combat Camera Group, Pacific (Kevin H. Tierney)

Inflatable boat on patrol.

Excessive security hinders coordination; thus there should be a balance between protection and effectiveness. An enemy is always alert for indications and warnings, hence perfect security does not exist. Commanders, knowing that their deception plans could be compromised, should use any security breaches to their advantage.

Operational commanders should reconcile differences between deception objectives and the methods their staffs recommend. This is ensured by coordination throughout the chain of command. Because planning is conducted concurrently and in various staff sections, inconsistencies must be resolved. An operational deception

British military police,
outskirts of Kabul.



AP/Wide World Photo (Left: Pinarakis)

The Evolution of Peace Operations Doctrine

By RICHARD B. LOVELOCK

Transforming Kosovo is a multifaceted challenge requiring a comprehensive and incremental response. Political, security, legal, and economic issues must be addressed as a coordinated whole to ensure a durable peace. Thus the military contribution must be integrated within the overall framework. Lessons can be drawn from both existing doctrine

and previous operations, particularly from successful counterinsurgency efforts. Capable warfighting forces must operate among the people, using the guidelines provided by maneuverist doctrine and adapted to local conditions to enable the military, in cooperation with the police, to find (locate), fix (control or shape), and then strike at the sources of the security problem.

The following analysis centers on approaches adopted after the 1999 Kosovo intervention and includes relevant experiences. Its intent is to combine historical and contemporary approaches, offer lessons, and demonstrate that the military

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community has already gone beyond current doctrinal guidelines in some areas. It concludes by calling for new doctrine to prepare forces for operations similar to the Kosovo conflict in a complex multinational environment. The aim is to ensure that tactical activity by deployed forces leads to a meaningful strategic result.

The Challenge

International involvement in Kosovo represents the top end of such intervention because it draws on many resources. U.N. Security Council Resolution (UNSCR) 1244 is unambiguous in setting out a list of tasks;

First World militaries are engaged; and there is a relatively well resourced and structured U.N. mission, a reasonably sophisticated infrastructure, heavy development and investment from nongovernmental organizations, and a resourceful population with a large and supportive Diaspora.

Yet serious problems confront these resources. The diversity of actors poses a coordination challenge. The absence of a final political status for the province further complicates matters. The security situation features violence inspired by ethnic tension, political extremism, and organized crime. Major General R.A. Fry, a former commander, Multinational Brigade (Centre)

(MNB(C)), has described a "profoundly revisionist nexus which comprises crime, paramilitary, and extremist political organizations, each indivisible from the other... individuals coalescing together opportunistically in pursuit of local advantage [which] naturally feeds on the Albanian parallel structures."¹ This environment challenges both military and police elements.

Maintaining a multi-ethnic society is a daunting challenge, and a goal of the international security presence is to ensure that the remaining Serb, Roma, and other minorities

are not forced to live under the apartheid system that existed before NATO intervention. Equally, if the ambitions of Kosovar Albanians for some form of independence are not realized, the

key elements are in place for the international community to become the target of the same activities the Serbs faced earlier. Deep undercurrents of instability remain despite peaceful elections. Action is needed in the security domain to transform the situation and move the process forward. Such efforts can reduce the threat that international contributions will be targeted and the danger that they will be destabilized.

The Response

To repeat, the security challenge calls for combat-ready forces capable of operating among the people. As one observer has noted, "peace-keeping is anything but an activity for wimps."² Forces tasked to participate must be ready for the full spectrum of operations. Preparedness for combat will enhance credibility and effectiveness and so reduce the need to actually use force. With troops coming from the warfighting armory, the first key point is that an army can only operate with one generic doctrine, and any guidelines for peace support operations must be firmly rooted in warfighting doctrine. Peace support doctrine should merely provide guidance on operating in that particular environment.

Warfighting doctrine is already well defined and is based on the maneuverist approach and its key enabler—mission command, or mission tactics. This technique is ideal for peace support because it seeks to disrupt the opponent's overall cohesion and will to fight. The new NATO peace support operations doctrine, AJP-3.4.1, makes that point.

The military needs an approach that accepts chaos and disorder, the very characteristics inherent in peace support operations, and turns them to advantage. They must seek to gain, and maintain, a position of advantage with which to influence the will and cohesion of opponents or parties.

This language is remarkably similar to that used for warfighting. The maneuverist approach can help commanders see alternatives to direct attacks and attrition, which are usually inappropriate in an environment where the imperative is to promote consent through impartial actions and, while being ready for combat, by applying the minimum force necessary. Thus the second key point is that commanders must seek to influence the will or cohesion of the parties—indeed of the public as a whole—and in this environment military forces must operate among the populace.

The mission command (mission tactics) philosophy is a widely understood aspect of Western doctrine and is the principal enabler for the maneuverist approach. It is also ideally suited to the fluid and sensitive aspects of peace support operations. Decentralized control is the order of the

the security challenge calls for combat-ready forces capable of operating among the people

British and American officers in Kabul.



AP/Wide World Photo (Brennan Linsley)



AP/Wide World Photo (Leftis Plaraks)

British army medics in Afghanistan.

day. When commanders on all levels understand their general roles and specific tasks with their underlying purposes, they are more able to think laterally and share objectives through unity of effort, decentralization, trust, understanding, and timely decisionmaking. Nevertheless, it is often argued that mission command is not valid because political considerations make themselves felt on the lowest levels and thus constrain tactical initiative. In fact, the reverse is often true. Some issues pertaining to relationships and coordination call for close control, but there will also be a need to seize fleeting opportunities and react purposefully under pressure, often in the media spotlight.

A third aspect of warfighting doctrine is what the British army terms the *core functions* of combat. According to JWP 3-50:

At its simplest there are two: to shape and control the operational environment so as to more ably accomplish the mission; and the direct application of military techniques to achieve resolution and the accomplishment of the mission . . . described respectively as fixing and striking. Implicit in both is the need for

good intelligence to find and identify the causes of the problem.

Thus the core functions of *find*, *fix*, and *strike* are derived. These have a central role in peace support operations and are rooted in experience.

The Lessons

The British experience with counterinsurgency operations is worthy of examination from two perspectives, the first strategic and leading to a key point: a comprehensive response strategy was employed, involving coordinated activities across government agencies and departments. Secondly, from a more tactical perspective but reinforcing the strategic, these operations were conducted amongst the people they were designed to impact. Additionally, a number of techniques common to the warfighting model fall from this experience. They include a maneuverist approach and, critically, intelligence-led operations in cooperation with the police to find, shape, and then strike at the sources of the security problem.



AP/Wide World Photo (Tim Ockenden)

Guarding suspected
Serb headquarters,
Pristina.

In counterinsurgency, the broader context, political scenario, and legal aspects differ from peace support operations. However, the complex situation and the predominantly human dimension lead to strong similarities between the operational concepts and responses.

Whilst there is no antidote to insurgency, and pragmatism has been the key to the British approach, a central principle has been obtaining

political leaders were coopted to familiarize the populace with the resolution of the problem

unity of effort through overall coordination in order to generate a comprehensive response. The preferred method was to appoint a director of operations to chair an operations committee, which included the heads of the military, the police, the administration, intelligence, and psychological operations. Once circumstances permitted, local political and other leaders were coopted to familiarize the populace with the resolution of the problem. Similar committees are being employed in Kosovo.

The key factor again emerged in analysis of earlier counterinsurgency operations in Malaya, Kenya, and Cyprus that "It is in men's minds that wars of subversion have to be fought and decided."³ In such circumstances it is imperative to

develop intelligence to prosecute operations. "The main problem in fighting insurgents lies in finding them. . . . In most . . . campaigns the main burden for developing background information falls on the normal military units."⁴ This was the beginning of today's intelligence-led operations.

Another key point emerges. Obtaining intelligence from operating amongst the population enables specifically targeted operations which need fewer troops than a more random or attritionalist approach. For example, the army and police cooperated in patrolling and guarding in Malaya. Often termed framework operations, these activities were necessary to limit freedom of movement and shape the environment—or *fix* the insurgents. Troops and police were obtaining the information from the populace to find the insurgents in order to plan strikes to remove them. Here the core functions of finding, fixing, and striking emerge fully in the counterinsurgency context.

The United Kingdom employed the broad themes of the counterinsurgency concept for fighting terrorism in Northern Ireland. A committee structure directed activities on the operational level, and framework operations provided the essential backdrop for intelligence-led strikes against the terrorists on the tactical level. The pattern of operations was similar and the methodology of find, fix, and strike was applied again.

Another key feature has been extensive cooperation with the police on all levels. This has involved joint planning, joint operations rooms, and joint patrolling and operations. The focus for the military has been on supporting the police by bringing capabilities to the table that a police force normally lacks. Critical to this partnership is understanding that the police and military are different, leading to the next key point—the importance of the police-military relationship in providing a secure environment.

The value of using such an approach for counterinsurgency and contemporary problems has been recognized. General Sir Michael Jackson, the first commander of Kosovo Force (COMKFOR), remarked in an address that on entry to Kosovo on June 12, 1999, the situation was anarchic. He told a U.K. battalion commander to imagine Belfast in the early days of "the troubles" to understand Pristina. "It is a mixture of a firm hand but appreciating that it is not a war—the battleground is in peoples' minds, and therefore how do you engage with that?"

American academic Tom Mockaitis has examined both counterinsurgency and peace operations, pointing out that Britain's technique:

contains much to inform the conduct of peace operations to end civil conflict. . . . The most striking feature of British counterinsurgency has been its unified



AP/Wide World Photo (Russell Boyce)

Warrior tanks in Macedonia.

approach: soldiers, police, and civil administrators worked together to provide a comprehensive solution to the problem of civil unrest. Soldiers provided the shield behind which civilians could rebuild a war-torn country from within.⁵

The Kosovo Approach

The experience of Kosovo suggests that the comprehensive approach applied in the counterinsurgency model is also fundamental to contemporary peace support operations. The military role is to provide secure conditions for other actors to create a durable peace. These efforts cannot occur in isolation. An overall transformation is necessary to take a society from a negative peace, imposed by military force and not amounting to much more than stopping the shooting, towards a positive peace. This involves changing human conditions so peace can be self-sustaining until all conflict can be managed nonviolently. An enduring lesson of the post-Dayton experience in Bosnia is that it is no longer logical to separate military and civilian functions, and UNSCR 1244 has specifically precluded it. The security elements must address the symptoms of the violence from the outset by deterring and if necessary physically preventing or containing it. Concurrently, the underlying enablers of violent conflict need to be attacked through a coordinated political, security, and economic strategy, using the whole range of international capabilities.

The absence of a final political status for Kosovo has caused military challenges in the campaign planning domain. Conventional doctrinal and political wisdom require an endstate to facilitate such planning and shape the context for military involvement. But this philosophy may now be counterproductive in the long run. As Jackson explained, "Uncertainty is absolutely part of a soldier's job; not only should we not resent it but we should learn to embrace it."⁶ Whilst the conditions for deploying troops must be spelt out, it must also be clear that the force will contribute to a durable peace in the medium term and will thus enable political solutions in the medium to long term. So in the absence of direction from above, commanders on the spot have effectively developed their own interim end-state—a relatively simple statement of the conditions necessary to move towards a durable peace or simply an improved environment.

Political direction is key to developing an interim endstate and must often be viewed in terms of the art of the possible. Here the *supporting* and *supported* analogy of conventional military doctrine is helpful. This relationship is mandated in Kosovo by UNSCR 1244 and essentially sees Kosovo Force (KFOR) supporting the U.N. mission. Relationships change as solutions emerge in the transformation process, but the clear imperative is to erase distinctions between military and

civilian objectives. Employing a committee structure on all levels goes far towards making them civil-military objectives.

With an interim endstate established, the lines of operation (or functional activities) in the campaign plan can be worked backwards. These guide what various actors must do to achieve the *decisive points* to attack the center of gravity and so attain the endstate. A combination of sequenced activities by both military and civilian actors is needed to achieve the effect required of each line of operation. No single actor can deliver all the decisive points to establish law and order, for example. Jackson provided an analogy of “weaving the strands of a rope.” Campaign planning can be conducted despite the absence of a traditional endstate so that incremental progress can be achieved. This process must take in all relevant actors, not just the military. The many agencies involved—the strands—must be woven into a rope, the comprehensive response. This rope of activity will be stronger than the individual strands.

A campaign plan which employed warfighting doctrine had evolved by 2000. The U.K.-led MNB(C) in Kosovo saw the interim endstate as achieving the political objective of creating conditions for permanent peaceful political dialogue within the province. The goal was to be reached through attacking the center of gravity of the Serbian/Kosovar Albanians. Lines of operation were developed to synchronize the use of military force in support of political ends.

There are two dimensions to understanding the chosen center of gravity: an enemy’s physical means (military capability) to use violence and its moral means (willingness) to use it. Although the consent of all the majorities arguably existed, the problem when attacking the center of gravity was the growing difficulty of identifying the truly hard line elements in both dimensions. In practical terms, the concept was for MNB(C) to use intelligence offensively to concentrate activities (security, information operations, and civil-military effort) in time and space in order to affect the parties’ willingness to use violence.

The Immediate and the Distant

Such operations as the above are based on a conceptual framework with deep and close dimensions, as specified in existing doctrine. Close operations, usually conducted on the battalion level, are used to maintain contact with the population and set the conditions for deep operations, which aim to achieve decisive effect on the center of gravity and are usually controlled on

brigade level and involve more specialist troops and techniques. Critically, all activities are conducted in close cooperation with the police.

Close operations are designed to manage and control the immediate operational environment. This helps ensure compliance with the mandate and promote general consent. It can involve strike, but the emphasis is on the core functions of find and fix. Such activity forms much of the daily pattern of visible operations for most of the troops deployed.

Deep operations are designed to decisively affect the center of gravity. This is accomplished by precluding certain events or influencing public perceptions. Thus it sets the conditions for political resolution. The emphasis is on activities designed to find and strike, which shows the practical application of a maneuverist approach.

Strike in this context has involved targeted and surgical operations, including cordon and search to seize arms and illegal materials, targeted arrests, interdiction of trafficking routes, disruption of training bases, and dislocation of communications. But it also includes influencing the will of the parties and the people, so information operations are vital. Strike activities can be to the physical or financial disadvantage of “spoilers,” who may react violently or generate public disquiet, a factor to be considered during planning. Confidence must be built by separating the populace from the past and creating a climate of hope. Public concerns about a foreign security presence must be addressed. Additional means of striking lie outside the military domain but may increase security through humanitarian or socioeconomic efforts.

Information operations overlay all other activities and are the principal fires available to commanders. They magnify police and military team efforts by getting truthful information to target audiences in and out of theater. The will of the population can also be influenced by providing a carrot such as assistance or aid to mollify the effects of the stick.

Filling in the Gaps

The above methodology has been employed in Kosovo with increasing success; however, gaps still hamper a comprehensive response. While these approaches are based on doctrine and have been developed from experience, operational techniques have now gone beyond current doctrine, particularly in the spheres of planning without an endstate and operations in conjunction with the police. Security activities demand robust political decisionmaking both in and out

lines of operation were developed to synchronize the use of military force in support of political ends

British troops in Portadown, Northern Ireland.



AP/Wide World Photo (Peter Morrison)

of theater. Risk is implicit if the political intent is to have an impact in the short to medium term even in the absence of a final decision on status. That said, multinationality cannot be ignored, particularly in the military arena. It is only natural that governments should provide military contingents with political instructions since deploying force is a means of operationalizing political intent.

Multinationality can lead to incoherence on the theater level because the overall commander may have difficulty reaching consensus on a given course of action. Nevertheless, increased exploitation of the maneuverist approach, with emphasis on deep operations, is needed for KFOR to play its full part in generating a durable peace. The alternative is to remain in a holding pattern, a form of containment which would fix KFOR through its own volition rather than striking deep at the problem from a province-wide perspective. In such circumstances, multinational brigades would likely continue to operate as semi-detached entities with little opportunity to exercise overall control by COMKFOR.

Operations in the Balkans and elsewhere have provided a raft of experience that must be captured. Kosovo represents the state of the art, particularly in police-military operations and the need to conduct intelligence-led operations

among the populace. New doctrine should emphasize a comprehensive response and the interdependence of the political, security, legal, and economic elements together with the requirement for incremental planning as the situation evolves. This will improve the military ability to work with civilian organizations and deal with lack of political direction. The commander's role in a comprehensive response requires a grasp of issues well beyond the purely military.

Modern war demands the holistic approach developed elsewhere. Although primarily couched in the language of peace support operations, all the above recommendations are relevant to the challenge of the war on global terrorism. **JFQ**

NOTES

¹ R.A. Fry, "A View from Kosovo," *RUSI Journal*, vol. 146, no. 3 (June 2001), p. 13.

² Christopher Bellamy, "Combining Combat Readiness with Compassion," *NATO Review*, vol. 49, no. 2 (Summer 2001), pp. 9–11.

³ Frank Kitson, *Low Intensity Operations* (London: Faber and Faber, 1971), p. 31.

⁴ *Ibid.*, p. 99.

⁵ Tom Mockaitis, *Peace Operations and Intrastate Conflict: The Sword or the Olive Branch?* (Westport, Conn.: Praeger, 1999), p. 134.

⁶ Mike Jackson, "KFOR: The Inside Story," *RUSI Journal*, vol. 145, no. 1 (February 2000), p. 14.

Briefing at Camp Rhino, southern Afghanistan.



Fleet Combat Camera Group, Pacific (Johnny Biviera)

Creating a New Path for Joint Education

By ROBERT M. ANTIS and CLAUDIA H. CLARK

Increasing challenges are raising the operations tempo for military organizations and for personnel deployment, complicating training and education. An important aspect of readiness is the ability to plan and execute new missions amidst the turmoil. Combatant commanders and their staffs must deal with humanitarian assistance and disaster relief, enforcement of no fly zones, noncombatant evacuations, and new types of war against terrorism. Thus Joint Pub 3-0, *Doctrine for Joint Operations*, states, "training and education programs focusing on joint,

multinational, and interagency operations should be developed and implemented." It is imperative that joint education be expanded to provide requisite skills to all personnel operating in this complex environment.

Not a Deviation

General Henry Shelton, USA, said, "Education and leader development are vital . . . to fulfill both short-term needs and long-term requirements. Education must be thought of not as a deviation from a soldier's duty, but a central and continuing focus."¹ Joint professional military education (JPME) must ensure that officers supporting combatant commanders can address the full range of tasks. "All service and joint educational systems also serve another important role by helping to meet current readiness requirements."

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55th Signal Company (Christina Ann Bennett)

Checking identification
near Strpce, Kosovo.

This educational preparation contributes substantively to the readiness of the CINC for daily mission execution.

While readiness is crucial in itself, education also enables the military to manage its transformation, which is more than making incremental improvements to current capabilities. Rather, added Shelton, “transformation is first and foremost an intellectual exercise, requiring the brightest minds actively engaged in taking our Armed Forces to new and higher levels of effectiveness. Therefore, the road to transformation begins with a strong program of education and leader development.”

The environment for joint education already contained in law and regulation and programs in place can address the above concerns. Solid curriculum and assessment/evaluation in use in JPME are a starting point. Proposed here is confirmation of the efforts to date and a greater role for the current framework in expanding the system. This can assist the joint force commander with the variety of missions he faces.

First, it is necessary to examine those forces that have defined JPME needs. Congress gave specific requirements for joint education with the Goldwater-Nichols DOD Reorganization Act of 1986. How they should be implemented was detailed for the Chairman in the House Report of the Panel on Military Education of the 100th Congress, known as the Skelton Panel Report. The focus of all joint curricula is to be on combatant command and three-star joint task force (JTF) contingency levels. The report proposed that the intermediate service colleges be identified as Phase I of JPME and teach joint education from a

service perspective. Phase II would build on Phase I as presented by the service schools and concentrate on the integrated deployment and employment of multi-service forces. The Phase II course was directed to concentrate on joint doctrine, use case studies in developed and undeveloped contingency theaters, and encourage joint perspectives while increasing understanding of service cultures. The proposal to establish specific phases was implemented in the FY90 National Defense Authorization Act.

Most of the structure introduced in the Goldwater-Nichols Act and subsequent legislation has remained in law. In addition to defining what are considered joint matters in education, Title X of the U.S. Code also highlights rigorous standards, which is as much a readiness as an educational issue. Just as rigorous training ensures that personnel are prepared for their duties, rigorous educational standards ensure that their leaders are too.

Guided by the needs of the combatant commanders and congressional mandates, the joint education vision was refined through the officer professional military education policy (OPMEP). Issued as an instruction by the Chairman (CJCSI 1800.01A), the policy provides the primary guidance for all joint instruction from pre-commissioning to the Capstone Course. It mandates the fundamental learning objectives for institutions, focusing their joint educational efforts. However, other sources of input need attention as well. In conjunction with OPMEP, the Chairman routinely publishes special areas of emphasis (SAEs). Topics such as peace operations, asymmetric warfare, and consequence management, selected well before September 11, highlight the importance of this tool in maintaining relevance. These sources are complemented by congressional guidance, which not only specified topics, but also addressed the learning environment and the best teaching techniques. The Skelton Panel, for example, prescribed small seminars, focusing on active versus passive learning.

Thus ample guidance exists regarding what should be included in joint education on various levels. However, the central issue addressed by Shelton and others is the need for a greater availability of joint education as well as more levels of detail. Current initiatives might address these difficulties. The question is whether we will maximize time, money, and personnel to provide the most appropriate education to each servicemember at the right time.

A Spectrum of Joint Education

This article proposes integrating current joint education with new capabilities. Only by linking existing resources to innovative initiatives can

the Skelton Panel prescribed small seminars, focusing on active versus passive learning

DOD meet this wide-ranging shortfall. The JPME Phase II institution of the National Defense University, Joint Forces Staff College (JFSC), must serve as the focal point. As the school Congress chartered to address joint specialty officer needs, its success is unquestioned. As the school that educates the largest portion of staff officers being assigned to the combatant commanders, it must serve as the cornerstone of this initiative. Shelton pointed out that although its seats are not routinely filled, many individuals are still unable to attend. More importantly, an even greater number have no need for such extensive education yet still require some level of preparation. But in the current structure there is no alternative for them.

The Skelton Report speaks of a spectrum of joint education spanning the pre-commissioning programs of the Reserve Officer Training Corps and service academies to senior service colleges, National War College, and Capstone. This spectrum should be deepened and integrated. Congress had the right concept when suggesting that joint education was necessary throughout an officer's career. What was not so apparent was the range of personnel who require some portion of that instruction. Joint education included in the service intermediate schools is designated Phase I JPME. It should in and of itself provide the foundation for many officers supporting the combatant commanders on component or joint task force staffs. Additionally, to that educational spectrum outlined for selected officers' careers we must now add opportunities for those enlisted personnel, civilians, and Reservists of all grades, as well as officers who might need more preparation than would normally be forecast by a career pattern Goldwater-Nichols projected for non-joint specialty officers. We will now examine this new spectrum.

While Congress and OPMEP provide detailed directives, an integrated education program must have a flagship institution for curriculum development with the teaching expertise and assessment skills to make a joint education program viable. One institution must provide the core curriculum for CJCS to ensure that this greater variety of education and training is focused on appropriate topics. The obvious choice is Joint Forces Staff College. As a JPME Phase II institution, it prepares officers for the joint specialty with a joint curriculum along with a faculty and students equally representing all military departments. OPMEP has further defined the student allocation as according with the distribution of billets by service on the joint duty assignment list. Only through this mix sharing an educational experience over time can students achieve the level

of acculturation Congress desires and that is needed for joint specialty officers. An examination of the program therefore demonstrates the necessary background for a comprehensive plan and shows the potential of existing material to underpin the other elements of the educational spectrum proposed here.

The integrated JFSC curriculum combines a unique teaching environment with a full range of assessment strategies linking the educational experience to critical needs of the combatant commands and JTF staffs. Students are evenly distributed into 17–19 seminars, usually including an international officer and often an interagency representative. Seminars serve as representatives of a CINC staff or of a joint task force, thereby emphasizing the skills Shelton highlighted. Serving in a notional body, Africa Command (AFCOM), supports the learning environment. The realism of complex contingencies confronting U.S. interests daily in the region provides a rigorous underpinning to the education process.

A total environment supports this realistic framework. As with combatant commands, the Africa Command homepage serves as a daily focal point for staff actions and information within its area of responsibility (AOR). Each day of the twelve-week course represents 10–12 days. The homepage keeps students serving on the AFCOM staff current on issues and hotspots not only in their AOR but around the world. Their command's plans and standard operating procedures are available both within the seminar rooms and on the homepage. These documents are not shells or outlines as are often found in military institutions but in most cases are actual plans, modified and kept unclassified to fit the learning environment.

As students work with the AFCOM materials, they not only ponder the type of documents routinely produced in joint staff actions but also see an example of what looks right in many types of plans and procedures. Thus officers learn the processes and decisionmaking skills so critical to a joint staff while gaining experience with related products.

Campaigning

According to the Skelton Report, "Armed Forces Staff College should concentrate on case studies and wargames on the combat employment of joint forces." This intent is seen throughout a curriculum that provides learning in an increasingly complex and integrated environment. As new lessons are introduced, students examine historical or practical experiences to add depth, then demonstrate their understanding. They explore the strategic environment and issues relating to national and regional security early in the



U.S. Navy (Jonathan R. Byrd)

Preparing for takeoff
from *USS Theodore
Roosevelt*, Allied Force.

mission analysis and concept development are critical in both deliberate and crisis planning

curricular program. At the same time, their AFCOM duties require them to address a variety of staff actions and procedures. They gain understanding of the relationship between regional and national issues and how the Chairman and unified commanders act within that environment by studying the joint strategic planning system and joint strategy review.

After they work the issues involved in reviewing a draft joint strategic capabilities plan, students explore the role of service contributions to CINCs as well as the challenges of componentry for the combatant command structure. Case studies place the issues of strategy, resourcing, and command and control in historical perspective.

Students next explore tools for joint planning through a campaigning block. They examine operational art as well as the campaign and its application in historical and contemporary venues. They also survey broad topics such as battlespace management, multinational issues, peacekeeping, and joint force command. They are introduced to processes such as mission analysis, security cooperation, and the theater strategy formulation as they confront the challenges of ways, means, and ends on the combatant command level. Amidst this instruction, practical exercises and simulated crises drive students to use material and procedures already covered to reinforce and demonstrate their understanding.

Students entering the deliberate planning process are confronted with an approved operations plan but diminished resources and a changing international scene. This scenario drives a re-examination of the entire process and leads students to an even greater understanding of the complex decisionmaking skills inherent in it. Mission analysis and concept development are critical in both deliberate and crisis planning. They have thus been routinely highlighted by CINCs as areas of emphasis for their action officers.

These varied taskings, guidance, and recommendations, to include OPMEP and SAEs, are incorporated into an overarching set of objectives used to develop more specific learning goals and the accompanying assessment. The resulting list is known as the 15 academic objectives that guide curriculum development and assessment in the Joint and Combined Staff Officer School. These objectives stimulated a curriculum update while ensuring that the focus remained on key learning areas.

The content of Phase II programs at JFSC ensures that the officers are educated in the critical areas of joint operations, meeting the Title X requirement to teach joint matters. To do this most effectively, the curriculum must be maintained meticulously and integrated with a wide range of assessment and evaluation techniques. Currency and evaluation will ensure confidence in the program on the part of both students and the institution.

F-15s over Saudi Arabia, Southern Watch.



1st Communications Squadron (Jack Braden)

Opportunities for Assessment

An absolutely current, focused curriculum is critical to JFSC. However, the college must also have confidence in the learning achieved in this dynamic environment. Seminar faculty must be able to relate learning outcomes in the seminar room, the wargame suites, and in the variety of off-site environments with JFSC academic objectives. Faculty can then provide the best feedback to students.

A variety of assessment opportunities are incorporated throughout the twelve weeks. The first is the multiple-choice pretest taken on arrival and focused on knowledge/comprehension in three objectives relating mostly to Phase I. After the first portions of the curriculum are covered, an essay exam demonstrates individual understanding of course objectives as opposed to the group efforts shown through exercises and simulations. Following the deliberate planning process block, a short answer essay exam assesses other academic objectives and shows where reteaching is necessary. An examination at this point also allows use of the Capstone exercise as a means of individual remediation or of reinforcing learning objectives for the entire seminar.

A vigorous review program ensures that classes are examined for accuracy and currency as well as teaching techniques. The college solicits student comments for selected lessons while faculty members provide feedback through workshops and individual initiatives. In each case, the goal is to examine the accuracy of specific material and how it contributes to overall curriculum and learning objectives. Finally, the commandant annually asks the combatant commanders in chief, as the commanders of the headquarters where most JFSC graduates report, for their perception of the preparedness of graduates as well as for suggestions and priorities. This response is incorporated into the annual review of curriculum. Thus the college ensures that the tone and timbre of curriculum change meets the needs of the primary customers, the combatant commanders.

Students can also give feedback in other areas of this process through faculty-rating and a survey at the end of the course that treats curricular, policy, and procedural areas. While student opinion is useful to curriculum planners, the college employs a sophisticated outcomes assessment strategy to determine what graduates can actually do with their educations. The objective and essay examinations, testimony from commanders in chief in the field, and refinements in the officers' abilities to operate in their new joint environment all provide evidence of student learning.

Patrolling at Kandahar Airport.



Fleet Combat Camera Group, Pacific (Ted Banks)

Beyond efforts to increase academic rigor in the core curriculum, JFSC continues to refine and expand its Focus Study, or elective program. For ten weeks, students spend one afternoon per week taking four hours of electives, which usually consist of two twenty-hour courses, although five week, ten-hour sessions are offered. Some electives detail the global command and control system or joint targeting skills while others cover broader topics such as ethics within the joint environment or war in the 21st century. At the same time, officers en route to combatant commands or assigned to one for less than six months must take a course introducing the issues within their respective areas of responsibility.

Indicative of the new stringency in teaching and assessment, the college is now recognized as a substantial graduate level institution. Universities nationwide are establishing agreements for academic recognition of the JPME Phase II program. The potential for substantial credit from civilian institutions may lead individuals to seek further education on their own time.

Both Ends of the Spectrum

With its emphasis on the combatant command and JTF level, JFSC instruction hits the mark identified by Congress and the Chairman.

It provides the focused curriculum, joint faculty and students, rigorous education, and assessment mandated. It must be seen as the benchmark for joint education.

Needed now is a true spectrum. Some Reservists, DOD civilians, noncommissioned officers, and junior officers work in support of CINCs and JTFs with only a limited requirement or opportunity for joint education. At the other extreme, a case might be made for more intense joint instruction akin to the School of Advanced Military Studies at Fort Leavenworth or School of Advanced Airpower Studies at Maxwell Air Force Base for officers en route to duty as key planners on combatant command staffs. High on the spectrum is the education JFSC provides for joint specialty officers.

The three-day Joint Planning Orientation Course (JPOC) was the only alternative to longer, more formal courses in earlier years. Thus this course has been a heavily subscribed mobile instruction program, conducted by teams from the JFSC faculty who visit combatant commands and other active and Reserve organizations annually. For junior officers, NCOs, and civilians on a component headquarters staff that might occasionally support a JTF, a minimal orientation to joint operations may be sufficient. Hardly intensive joint education, such introductory training might provide only what is needed to improve command

C-17 being unloaded
at Kandahar Airport.



Fleet Combat Camera Group (Ted Banks)

readiness. At the same time, Reservists in an organization augmenting the staff of a unified command might need a similar level of instruction, while those earmarked for the staff of a combatant command or as part of the JTF planning group might need more.

A Reserve component program recently developed by JFSC, while extensive in time and cost, provides a joint experience similar to the Phase II program at JFSC without 12 weeks in residence. Acculturation may

be difficult to obtain because the majority of lessons are accomplished by distance learning, but the nature of distance learning

is such that knowledge, comprehension, and application levels would likely be equal or superior to what resident students gain. Such a program would satisfy the congressional mandate of section 666, Title X of the U.S. Code, which directs that the Secretary of Defense will establish personnel policies for Reserve officers to prepare them for joint duty and that "such policies shall . . . be similar to [that portion of Title X that establishes policies for managing and educating joint specialty officers]."

distance learning would likely be equal or superior to what resident students gain

A JPOC level of instruction might suffice for many NCOs. Such teaching could be integrated into existing schools. Where an NCO needs the instruction and it is not readily available, a JPOC-like course could be provided online focusing on learning objectives and made similar to face-to-face instruction.

Woven throughout the above levels of joint education is the need for a system of lifelong learning. Incorporating these new curricula with distance learning could offer solutions. For example, a selection of distance learning courses might help personnel involved in joint operations to maintain their particular skills and develop new ones. As long as the instruction relates to the joint matters dictated by Congress and the Chairman and are incorporated into the JFSC curriculum, the college can provide the foundation for curriculum development in this expanded joint spectrum.

Many of these programs exist or are under development. What is lacking is their integration into a holistic view that ensures that each service-member and civilian employee receives the right education or training at the right time in their careers to carry out assigned duties. Combining these programs as conceptualized above could enhance individual and unit readiness. It could also ensure that DOD leads transformation rather than being driven by it. The personnel manager



U.S. Navy (Claude J. Trouiller)

U.S. and Korean officers, Enduring Freedom.

faces the greatest difficulties in implementing such a system. Duty positions in joint, service, and defense agencies would need to be coded for the level of joint training or education they require. Personnel movements and training/education opportunities would then need to be matched. The case of JFSC demonstrates that both must work in synch. Despite the clearly-defined need for well-trained officers in joint positions, the college routinely has empty seats in each class due to the mismatch of personnel to positions. Finally, the level of education or training an individual obtains must be tracked. Over time, monitoring would minimize the need for new schooling and would only be needed extensively for a first joint assignment or in a transfer to a position calling for more education. Greater flexibility would eventually be provided to personnel managers with a wider and more focused variety of joint education opportunities and a large pool of servicemembers with the requisite background.

The need for joint professional military education is growing even as the call to minimize time away from duties increases. DOD leadership must resist the temptation to limit education. The range of joint education envisioned by Congress must be expanded. The elements in place must remain. Critical aspects of education are being accomplished from pre-commissioning through the senior service colleges and Capstone. At the same time, the growing challenges of combat operations and the wide variety of contingency operations bring many additional military

officers, enlisted personnel, and civilians into the joint planning and decisionmaking environment. The JPME structure only considers a portion of the officer corps despite this greater requirement. Opportunities must increase.

JFSC must remain the premier school in joint operational-level warfare and in preparing joint specialty officers. From this flagship institution the other needs of joint force commanders can be addressed. A variety of short training programs, both online and by means of mobile training teams, can provide broad overviews for those enlisted, civilian, and officer personnel primarily working in support of the joint force commander. Distance learning integrated with resident periods can provide Reservists with critical preparation prior to augmenting the combatant commander and his subordinate headquarters. Along with new technologies, it may also contribute to a life-long learning environment.

Through OPMEP and SAEs, CJCS ensures that all institutions are focusing on timely topics. He ensures through his accreditation process that the curriculum is rigorous and complete in preparing officers as joint force commanders. The ability to maintain readiness for today's urgent and ongoing operations should be integrated with the intellectual flexibility to prepare and execute transformation for the future. The remaining question is whether we have the vision and desire to take the opportunities before us and provide our personnel the skills they need to best serve the Nation.

JFQ

NOTE

¹ Henry H. Shelton, "Professional Education: The Key to Transformation," *Parameters*, vol. 31, no. 3 (Autumn 2001), p. 15.

*Removing Body from
Grave (Viet Nam, 1946)*
by Wayne D. Larabee.



U.S. Army Center of Military History

Recovering and Accounting for Prisoners of War and Missing Personnel

By THOMAS E. ERSTFELD

The United States expends great effort to account for members of the Armed Forces who were lost while serving the Nation. Over the years no other country has done as much. The Department of Defense is responsible for personnel recovery and accounting. Today, the Defense Prisoner of War/Missing Personnel Office (DPMO) develops and oversees national policies which facilitate this overall endeavor.

Lieutenant Colonel Thomas E. Erstfeld, USAF, is chief of the Political and Military Outreach Program in the Defense Prisoner of War/Missing Personnel Office within the Office of the Secretary of Defense.

Looking for the Lost

In the aftermath of the Vietnam War, various commissions pursued information on the fate of missing servicemembers. In 1991 the Senate established the Select Committee on Prisoner of War/Missing in Action (POW/MIA) Affairs, which thoroughly investigated the issue, including government attempts to resolve it. One committee recommended a single DOD office to oversee all matters relating to captive and missing Americans.

DPMO was initially organized as the Defense Prisoner of War/Missing in Action Office by DOD Directive 5110.10 on July 16, 1993, under the

authority, direction, and control of the Assistant Secretary of Defense for International Security Affairs. This achieved centralized management of POW/MIA affairs within DOD. DPMO provides departmental participation in negotiations with foreign governments to achieve maximum accounting of missing servicemembers; assembles and analyzes information and maintains data

the intent was to create one office to exercise policy, control, and oversight of the entire process

bases on military and civilian personnel who are, or were, prisoners of war or missing in action; declassifies documents for disclosure and release according to public law and executive orders; and maintains channels of communication among Pentagon officials, members of Congress, POW/MIA families, and veterans organizations.

As the Deputy Secretary of Defense stated in a memorandum dated September 14, 1994, "The preservation of life and well-being of U.S. servicemembers and DOD civilians placed in harm's way while defending U.S. national interests is and must remain one of the department's highest priorities." He recognized that in an environment of military operations other than war, diminishing capabilities, and concurrent U.S. commitments, reliance on ad hoc recovery of personnel was unacceptable. Legislation enacted with the FY96 National Defense Authorization Act called for a single office within the Office of the Secretary of Defense with responsibility for missing persons policy. The intent was to merge past, present, and future accounting efforts with policy oversight for

live personnel recovery matters, thereby creating one office to exercise policy, control, and oversight of the entire process for investigation and recovery (including matters related to search, evasion, rescue, and escape), coordinate with other departments and agencies on all matters concerning missing persons, and establish procedures for DOD boards of inquiry and officials reviewing reports by such boards under the provisions of the Missing Persons Act of 1996.

The Under Secretary of Defense for Policy redesignated the Defense POW/MIA Office as the Defense POW/Missing Personnel Office on August 15, 1996. This marked the first time since passage of the Goldwater-Nichols Act that there was a single office responsible for not only the historical accounting mission, but for policy, control, and oversight of the whole process—from the time of loss, through search and rescue, to either recovery of an individual or of remains or a conclusive determination of fate. It set the stage for this office to provide consistent leadership for the POW/MIA issue and fostered unified commitment to retrieving isolated personnel before they become unaccounted for. DPMO uses a threefold approach to shape recovery and accounting policies: preparing forces before combat, recouping isolated Americans before or after capture, and retrieving and identifying the remains of those killed in action.

In addition, DPMO provides overall development, coordination, approval, and promulgation of policies and plans for enemy POWs. In this regard, it works closely with the Army, which is the executive agent for administering the enemy POW program and is thus responsible for the day-to-day care, custody, and control of captives.

The top priority is live recovery. DPMO has established policies and guidance for the services and combatant commands that ensure that their warriors are appropriately trained, since preparation increases the odds of surviving captivity. The odds grow further when cutting edge technology can facilitate evasion, survival, and recovery. The office is a strong advocate for the development of such capabilities, especially those which locate isolated personnel. The recovery mission has increased the interaction between DPMO and other offices and headquarters across DOD in a continuing effort to coordinate policy and advances recovery issues. The office's operational partners are the Joint Personnel Recovery Agency, an element of U.S. Joint Forces Command which is the executive agent for administering the recovery program, and the Defense Intelligence Agency (DIA), which runs the intelligence community POW/MIA analytical cell for ongoing missions.

U.S. Army Central Identification Laboratory, Hawaii.



Defense Prisoner of War/Missing Personnel Office

Honor guard at
Hickham Air Force
Base, Hawaii.



U.S. Navy (Gloria J. Barry)

Team Members

DPMO also works with other DOD organizations to carry out the accounting mission. This effort brings together many specialties and provides the majority of the field work associated with the accounting mission and includes:

Joint Task Force-Full Accounting (JTF-FA). An activity of U.S. Pacific Command, JTF-FA sends search teams to conduct analyses, investigations, archival research, and recovery in Vietnam, Laos, and Cambodia to resolve Vietnam War cases.

U.S. Army Central Identification Laboratory, Hawaii (CILHI). The lab has the worldwide mission of searching for, recovering, and identifying remains of Americans who died serving the Nation. It also supports civil humanitarian missions and provides technical assistance.

Armed Forces Repository of Specimen Samples for the Identification of Remains. The repository performs DNA testing to identify remains from all conflicts and supports groups outside DOD when tasked.

U.S. Air Force Life Science Equipment Laboratory. This organization conducts scientific evaluations of aircraft and equipment at crash sites to help determine whether there were any survivors.

Service casualty offices. These elements act as primary liaison between families and all other government groups involved in POW/MIA accounting. The service secretaries maintain offices as the focal point on casualty matters while the Department of State handles missing civilians.

Defense Intelligence Agency. The agency maintains a program dedicated solely to Vietnam War accounting known as Stony Beach. A team of experts supports JTF-FA and DPMO by conducting interviews in Vietnam, Laos, Cambodia, and the United States. DIA investigates last known alive cases and first-hand live sighting reports. Their work also contributes to the DPMO oral history program.

DPMO and its partners form a unified, cohesive team of 500 military and civilian members with an annual budget of more than \$100 million.

Identification

Personnel accounting is defined as actions taken to gather and assess evidence on missing servicemembers. Although many regard these as

solely cases requiring long-term work, they do not rule out the live recovery option. If the United States locates what is believed to be one of its missing, all policy and operational resources are utilized to bring that person home quickly.

DPMO relies on four broad activities to account for POWs and missing personnel: investigation, recovery, identification, and notification. Together they ensure timely and comprehensive storage of facts, tasking of agencies to acquire new evidence, and maintenance of current case files that enable analysts and research specialists to determine an optimal approach. The following reflects the steps of case resolution.

First, DPMO conducts lengthy negotiations, which are pivotal to a team's ability to conduct

joint investigations with host-country support. These investigations include interviewing witnesses (oral history), searching files for documents related to a loss incident (archival research), and unilateral investigations in which foreign nations conduct their own research and share their findings with the United States.

If an analytical team determines that an individual has perished, a remains recovery is launched to excavate, identify, and return the remains to the family for disposition. To initiate a recovery, a team must demonstrate that an American loss occurred at a particular site. Second, it determines whether the remains are likely to be present. Third, it negotiates access. Finally, it reviews safety requirements, weather conditions, and availability of recovery teams. Based on these factors, the DPMO team proceeds with excavation at the designated site.

Americans and host-country laborers work one site at a time, although many excavations can be conducted concurrently. A board-certified anthropologist leads each U.S.-led joint effort. The teams excavate dozens of sites a year and, despite new technology, such efforts are time-consuming and labor-intensive. Sites often must be revisited over a number of years. The CILHI anthropologist ensures the scientific integrity of the work, while teams catalogue and transport their findings to forensic scientists in Hawaii.

Expert scientists work in special facilities to identify remains. With common forensic techniques they gain clues by reviewing official records that include military and eyewitness reports along with wreckage and personal items from the sites. The most valuable evidence, however, comes from comparing skeletal and dental remains to the records of missing individuals. Some cases require DNA typing.

Once officials approve the identity, representatives of the appropriate service and scientific community visit the family to explain their findings. Then the service helps plan interment.

An additional benefit of the archival research preceding a recovery lies in the synthesis of additional databases. Research by DPMO archivists led to the creation of a database of unaccounted Americans from the Korean War. This document, *Personnel Missing—Korea*, serves as a baseline in accounting for individuals not covered by the postwar repatriation. Available at <http://www.dtic.mil/dpmo>, the document helps the services renew contact with thousands of families. A long-established database for the Vietnam War, *Personnel Missing—Southeast Asia*, and a new database, *Personnel Missing—Cold War*, are also on the DPMO Web site.

Another project recently developed by DPMO researchers is the Korean War Aircraft Loss Database, which contains some 3,400 Navy, Marine, and Air Force aircraft losses. It also includes aircraft type and tail number, date of loss, circumstances, status of crew, crash location, and the blood chit number, if available, and will be a significant tool for analysts, historians, researchers, and academics in the future.

World War II and Korea

More than 88,000 Americans remain unaccounted for from World War II, Korea, Southeast Asia, and the Cold War. Over 78,000 are from World War II, with most buried as unknowns in cemeteries throughout Europe or lost at sea. In general, when local people discover evidence of remains from World War II, CILHI sends a team to investigate and prepare for excavation. Former enemies sometimes help. In August 2000, a joint U.S.-Russian team located the crash site of a Navy PV-1 reported missing from a bombing mission on the Kamchatka Peninsula. DPMO and CILHI returned a year later and recovered some remains. Because the harsh climate restricts archeological activity, the next excavation cannot be mounted in the area until summer 2002.

Operations continue in Tunisia, Panama, Papua New Guinea, central Europe, southern China, and elsewhere. DPMO and CILHI worked with the Chinese government from 1997 through 1999 to recover the remains of ten Americans from a B-24 crash site in the ravines of Guangxi Province. Investigation of two sites in Tibet began last summer. In November 2000, CILHI identified remains of 19 marines killed on Butaritari Island in the Makin Atoll, including Sergeant Clyde Thomason, the first enlisted marine awarded the Medal of Honor during World War II.

more than 88,000 Americans remain unaccounted for

1st Combat Camera Squadron (Jim Vanhegy)

Remains of soldier killed in Korea.

More than 8,100 Americans from the Korean War are still unaccounted for, most of whom were lost in the North. DPMO has negotiated on an annual basis with Pyongyang since 1996 to conduct joint recovery operations (JROs) in an isolated nation with which the United States is technically still at war. Excavation teams recovered 152 sets of remains during 27 JROs through 2001. Ten have been identified.

DPMO was one of the few U.S. Government organizations actively engaged with North Korea until recently. In negotiations held in December 2000 between DPMO and North Korean officials, an agreement was reached to schedule ten JROs in 2001, and to double the number of operations and expand the size of teams, increase the length of activities, and add areas of operations.

All recovery through 2000 was conducted in an area sixty miles north of Pyongyang, but DPMO has tried for years to gain access to other locales of known losses. The schedule for 2001 permitted searching near the Chosin Reservoir for the first time. As the site of some of the most savage fighting during the war, the area may conceal the remains of more than a thousand servicemembers. The United States is aggressively seeking access to several POW camp sites along the Yalu River, but North Korea has not agreed to admit JROs in these areas.

One disappointment in accounting for the missing from the Korean War involves an inability to use DNA identification for more than 850 unknowns buried in the National Memorial Cemetery of the Pacific in Honolulu. When returned fifty years ago, they were treated with a preservative which has prevented retrieval of DNA samples. Six sets of remains, four from the Korean War and two from World War II, have been exhumed, and all show signs of treatment with this preservative. DPMO is supporting research to find means to extract DNA to permit analysis.

Vietnam and Elsewhere

Some 2,500 Americans remained unaccounted for when U.S. troops withdrew from Southeast Asia in 1973. Today that number stands at 1,948. The remains of more than 600 individuals have been repatriated, identified, and returned to families since 1973.

There have been 65 joint field activities (JFAs) in Vietnam as well as 72 in Laos since 1988 and 19 in Cambodia since 1992. Some were conducted in prior years but not under formal agreements. With JTF-FA, DPMO regularly negotiates with these countries. Cooperation with Vietnam and Cambodia is excellent and is improving with Laos. At consultative talks in September 2000 in Vientiane, the Laotian government agreed to increase the number of U.S. members on JFAs from 40 to 50, which Washington has long requested. They will also permit excavations based on chances for success rather than on a strict geographical basis and allow operations to run past time limits if anthropologists recommend it.

One priority of Vietnam War accounting concerns last known alive cases—Americans believed to have survived their initial loss incident. The outcome of these investigations helps resolve the question of captives left behind in Indochina. The United States originally identified 296 of these cases throughout Southeast Asia. Intensive investigations have shown that 181 individuals are deceased, and the remains of 52 have been located, repatriated, and identified.

About 120 Americans are unaccounted for from the Cold War, most of whom were lost on the peripheral territory of the former Soviet Union (FSU). DPMO engages with Russia through the United States-Russia Joint Commission. The objective of this body is determining whether servicemembers are being held in FSU facilities and, if so, securing their release and repatriation, locating and returning the remains of any servicemembers interred, and ascertaining facts regarding unresolved cases. While evidence has emerged that Americans are being held, investigations continue.



Defense Prisoner of War/Missing Personnel Office

President Clinton
outside Hanoi,
November 2000.

The commission is organized into four working groups representing World War II, the Korean War, the Vietnam War, and the Cold War. The Cold War group focuses on American aircraft losses as well as Soviet military personnel lost in Korea, Afghanistan, and other areas. The commission meets in plenary session at least once a year. DPMO also negotiates with the Chinese concerning the resolution of Cold War cases.

Prisoners of War

An outstanding issue that continues to surface from both the Korean and Vietnam Wars concerns reports of Americans still held captive. In the case of North Korea, because of publicity surrounding relatively new American activities in that country, additional reports have now surfaced—some repeating earlier claims. The U.S. Government uses all available resources to investigate such reports.

However, it has yet to substantiate any information regarding alleged sightings of live POWs. Analysts have connected many of the reports to six defectors living in North Korea since the 1960s—four of whom are believed to be alive. More than a thousand persons who left North Korea have been debriefed since 1994. Two dozen claimed some knowledge of POWs in North Korea, but further questioning discredited their claims. Others refer to the defectors. DPMO has a process in place to ask North Korean officials about prisoners. Moreover, it continually seeks to interview the defectors, but these requests have been denied.

an outstanding issue from both the Korean and Vietnam Wars are reports of Americans still held as POWs

In the case of Indochina, most live sighting reports originate from former residents of Vietnam, Laos, or Cambodia. Analysts rigorously scrutinize each eyewitness account of an American in those nations. Evaluations include historical information covering more than three decades. Many reports correlate to returned POWs or other Westerners known to analysts. Investigation plans are developed for others. Specialists often re-interview the original source and others to obtain clarifying details. They also examine imagery and other data. Some reports require an on-scene investigation. Vietnam agreed in 1991 to let U.S. officials conduct live sighting investigations. During such efforts, the DIA Stony Beach team goes to Southeast Asia and researches sightings on short notice. In recent years, the United States has pursued a hundred sightings in Vietnam with little warning and twenty in Laos and Cambodia. Once work on a first-hand live sighting is completed, analysts present the findings for review to senior intelligence experts, who ensure that analysts and investigators have pursued every avenue. No investigation of live sightings has proven as yet that American POWs were left behind in Indochina.

The United States has acquired 21,794 reports pertaining to Americans in Southeast Asia since Saigon fell in 1975: 1,914 first-hand live sightings, 4,858 hearsay sightings, 5,262 reports of crash/grave sites, and 9,760 submissions of dogtags—the manufacturing of which is a cottage industry. Of the first-hand reports, 1,897 have been resolved. Of those, 1,321 were attributed to Americans who are accounted for such as POW returnees, missionaries, civilians jailed for violating Vietnamese laws, and U.S. investigators; 45 were correlated to wartime sightings of military personnel or pre-1975 sightings of civilians who remain unaccounted for; and 531 were determined to be fabrications. The remaining 17 unresolved first-hand reports represent the focus of analytical and collection efforts. Of these, 16 pertain to Americans reported in a captive environment and the other to an American in a noncaptive environment. Sixteen pertain to sightings prior to 1976 and the other reported sighting was in the 1976–80 time period.

Full Engagement

An integral part of investigating live-sighting reports is a project of the DPMO joint commission support directorate. Having received numerous reports alleging the presence of American servicemembers in Soviet prison camps, researchers have established an investigative program to correlate those reports with oral and written information from worldwide sources. Initiatives to date have allowed the office to build cooperative

relationships with academic specialists, government officials, and former inmates of Soviet prisons and the gulag. As information is acquired, it is examined against an expanding database, with key items published on the DPMO Web site. While most reports focus on World War II and the Korean conflict, sightings from the latter part of the Soviet era are also considered.

In 1994, DPMO initiated efforts by the Defense Science Board to develop quality standards for use of mitochondrial DNA (mtDNA) in identification because it is shared by maternal relatives.

**“fullest possible accounting”
implies that not every case
can be ultimately resolved**

Nearly 45 percent of all identifications utilize mtDNA, but forensic scientists need samples from a relative to make a comparison with remains.

DPMO conducts an active outreach program to contact families for sampling. The Deputy Assistant Secretary of Defense for POW/Missing Personnel Affairs has addressed this issue with virtually all the leaders of veterans organizations, senior enlisted members of the Armed Forces, state directors of veterans affairs, and service secretaries.

In 1996, DPMO developed a realistic procedure to account for missing individuals when live or mortal remains repatriation is not possible. It outlines when to terminate active recovery efforts, as in cases where it is judged that no government action will recover remains (such as those who

by private citizens to excavation sites, underwater recovery, disposition of artifacts, release of Socialist Republic of Vietnam archival photos, family access to case files and POW/MIA information, compensation for return of remains, and blood chits.

A final aspect of the DPMO mission concerns its role as a center of expertise in Southeast and Northeast Asian affairs. Its negotiations and JTF-FA field activities have built trust and cooperation between the United States and Vietnam, which helped make President Clinton’s visit to that country possible in November 2000. DPMO was engaged in the preliminary planning and assisted the White House staff on all Presidential activities in Hanoi.

DPMO determined which recovery site the President would visit and arranged for the sons of the crash victim to accompany him. It also ensured his participation in the scheduled repatriation of the remains of three missing Americans, thus making the ceremony timely. The trip symbolized normalization, crystallized issues for future discussion, and defined new terms of reference for POW/MIA matters. The office assumed similar duties for the visits by the Secretary of Defense to Vietnam in March 2000 and the Secretary of State to North Korea in October 2000.

The Defense Prisoner of War/Missing Personnel Office has a brief but significant history and a national mandate to execute a vital mission. The accomplishments of the entire DOD team, which is seeking the fullest possible accounting of missing American servicemembers, are remarkable. True to its motto, DPMO is *keeping the promise*. **JFQ**



Defense Prisoner of War/Missing Personnel Office

Excavation site in
Southeast Asia.

have perished at sea). In the final analysis, however, “fullest possible accounting” implies that not every case can be ultimately resolved.

DPMO wrote the directives and instructions for all aspects of the personnel recovery mission. It also implemented the Missing Persons Act of 1996. In addition to these seminal documents, it developed government policies on recovery and identification, disinterment for identification, recovery of non-DOD personnel and remains, visits

Checking identification
at Shaw Air Force Base,
September 11, 2001.



20th Communications Squadron (Greg L. Davis)

Closing the Barn Door

Installation Force Protection

By JOHN L. CIRAFCICI

The United States is at war with an insidious and determined enemy, but not everyone is prepared for the fight. This enemy will avoid conventional battle at all costs, wears no uniform, and is unlikely to negotiate terms at a table. The personal commitment is total, and the only outcome can be victory or death. The enemy is terrorism, although its perpetrators would rather be seen as selfless warriors fighting a just war with their motivations firmly anchored in ideology and faith. Terrorist

groups have tasted a series of victories. Since 1983 they have included bombings in Beirut, Naples, Ramstein, Rhein Main, Berlin, Riyadh, and Dhahran as well as a simultaneous attack on two American embassies in East Africa, the *USS Cole* incident, and the events of September 11, 2001. These successes reveal the challenge.

Through Enemy Eyes

To appreciate the terrorist's perspective, one must step into his mind and view these attacks as he does—as significant engagements between his movement and the world's most formidable power, the United States. Each victory is a vindication of the struggle and is achieved against incredible odds. In this asymmetrical war, attacks

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Fleet Combat Camera Group, Atlantic (Johnny Biviera)

Marines fortifying positions, Kandahar.

are not random but are part of a strategy to bend an enemy's will and force submission. Each success validates the cause and demonstrates enemy impotence. Key measures of success are the number of casualties and the breadth of media coverage. Succinctly, in the terrorist's war anyone can be the target, and the immediate goal is to kill as many as possible.

The Department of Defense is committed to protecting its people and facilities by denying terrorists exploitable vulnerabilities. The intent of the antiterrorism/force protection (AT/FP) program is to reduce the likelihood of attack and to mitigate the effects if one should occur through assessment and substantive feedback to installation commanders.

In response to the Khobar Towers incident in June 1996, when 19 U.S. military were killed and 502 wounded, and the subsequent Downing Report on the attack, changes

were enacted within DOD to protect personnel and mission-essential infrastructure. The report concluded that both national security and U.S. forces were increasingly vulnerable to transnational terrorism and

addressed adequacy of policy, clarity of responsibility, effectiveness of intelligence, and sufficiency of budget. It also dealt with host nation provision of security, advanced technology, medical care, training, and personnel preparedness.

The Secretary of Defense designated the Chairman as the point of focus for force protection and tasked him to develop a program for the services, combatant commands, and defense agencies. The Chairman turned the task over to a

deputy director of operations (combating terrorism) within the Operations Directorate (J-3), Joint Staff. Standards were established and a process was implemented to regularly assess installation programs. The deputy director for combating terrorism (J-34) is responsible for evaluating dangers and seeking countermeasures. To improve protective practices at installations, J-34 acts as a conduit for information to and from the field and disseminates best practices to the customer. The deputy director strives to seize the initiative from the terrorist through technological enhancements and is an advocate for procedural improvements to installation AT/FP practices. The Cole Commission, formed in the wake of the *USS Cole* attack, issued its report in January 2001. In response, J-34 is further expanding the antiterrorism mission to include policies and practices for deterring, disrupting, and mitigating attack on forces in transit. Joint Staff integrated vulnerability assessment (JSIVA) teams, established in 1997, are the tip of the spear.

Comprehensive Assessment

JSIVA teams are integral to the Defense Threat Reduction Agency's combat support directorate and are located in Alexandria, Virginia. As the field agents for the Chairman's AT/FP program, they assess the protective posture of installations and supporting facilities worldwide and provide comprehensive feedback, training, and recommendations through the assessment process and mobile training teams. The teams are complemented by a front office, which provides easily accessible expertise to installation commanders and their staffs and technical assistance to the Joint Staff.

The agency fields six JSIVA teams from the antiterrorism assessment division of its combat support directorate. They collectively assess a hundred installations a year throughout the services, defense agencies, and combatant commands. DOD Instruction 2000.16 states that CINCs, services, and agencies shall ensure that lower-level antiterrorism programs receive higher headquarters vulnerability assessments every three years. A JSIVA evaluation fulfills the requirement. Teams try to appraise installations yearly in moderate or high threat environments such as the Balkans and the Middle East.

The services and CINCs nominate facilities for assessment annually. J-34 then schedules a week for each. A team will normally go on the road for two weeks and conduct two appraisals. The chief will deliver an out-briefing to the installation commander and staff and generate a comprehensive report on the findings within 45 days.

standards were established and a process was implemented to regularly assess installation programs



U.S. Marine Corps (Charles G. Grow)

B-52 at Minot Air
Force Base, Prairie
Vigilance '02.



5th Communications Squadron (Adam H. Woolen)

**Strengthening force
protection measures,
Kandahar airport.**

**team chiefs bring military
police, engineering, and
special operations
experience to the table**

Prior to a visit, the installation plan is examined for compliance with DOD Instruction 2000.16, "DOD Antiterrorism Standards." Previous Joint Staff and AT/FP assessments conducted by service or CINC teams are reviewed for findings and remedial actions taken. The team contacts the installation antiterrorism officer to begin groundwork. The intent of a visit is to provide the commander a comprehensive assessment of his antiterrorism program, recommend improvements, and pass on any of the installation's practices which might be helpful elsewhere. Each team, manned by six experts in the antiterrorism process, is led by an Army, Air Force, or Navy O-6. Teams encompass five functional areas: terrorist options, security operations, structural engineering, infrastructure engineering, and operations readiness. Additionally, a member of J-34 often accompanies the basic team. A Defense Intelligence Agency analyst augments the team for overseas assessments. The group is further joined by a service or CINC representative.

Team chiefs contribute not just leadership but expertise. Current chiefs bring military police, engineering, and special operations experience to the table. They interface with an installation's senior leadership from arrival till the out-briefing. The chief delivers an overview of how a fully functional antiterrorism program should look at both an initial meeting with the commander and during a standard in-briefing with his staff and the installation antiterrorism committee. He describes what the functional area representatives will be assessing and with whom they must interface.

Experienced Professionals

Terrorist options assessment specialists (TOs) are typically experienced Army Special Forces or Navy SEAL noncommissioned officers. Their primary duties include review of the facility terrorism

USS Cole being moved for repairs.



U.S. Navy (Pat S. Draham)

threat assessment process, use of the intelligence cycle, and mechanism for timely flow of data both up and down the intelligence conduit. They prepare for a specific assessment by first collecting data from the various services' counterintelligence and counterterrorism organizations, the Federal Bureau of Investigation if applicable, the Defense Intelligence Agency for overseas sites, and local law enforcement authorities. TOs examine existing intelligence threat assessments to establish the potential for targeting by known groups active in the area. They act as the terrorist on the team, looking at an installation through hostile eyes, and employ a realistic *modus operandi* based on known terrorist groups and identifiable threats. They build a plan of attack around the vulnerabilities they and their team identify.

JSIVA security operations specialists (SOs) are highly experienced active and retired service-members who are drawn from Air Force security forces and Army military police. Each team has two, and they assess physical security, review installation antiterrorism planning, evaluate access control and perimeter deterrence, measure training and antiterrorism awareness, and evaluate personal and executive protection. They further determine if a plan is adequate (if it contains all key components) and executable (sufficiently resourced, detailed, distributed, and exercised). SOs review whether procedures in place provide for a seamless AT/FP defense in depth.

Structural engineers (SEs) are professionals with DOD experience in military construction. Several current engineers have additional background as Army engineers, Navy SEABEES, and Air

Force civil engineers. Working with TOs in an attack scenario, they develop estimates of likely damage from a given explosive device used against specific structures. The estimate considers air blast, fragmentation, debris, and shock produced by a detonation. Major factors are the method of construction and materials used, especially the glass, and the stand-off distance separating a structure from a potential vehicle transported bomb. The type and size of a weapon used to illustrate the threat is determined by the JSIVA team based on the installation's exploitable vulnerabilities, including access control, antiterrorism measures in place, physical structures being targeted, and antiterrorism awareness of personnel. SEs also assess entry control points and perimeter fencing. They propose actions that will mitigate the casualty-producing effects of a bomb, minimize damage, and increase deterrence.

Infrastructure engineers (IEs) are typically trained civil engineers with a public works background. IEs focus on critical nodes, including the electrical supply and distribution system, water supply and distribution, telecommunications, and fiber optics infrastructure. They assess fire protection and suppression systems and fuel storage and delivery facilities and examines heating, ventilating, and air conditioning to determine vulnerability to airborne contaminants. Further, they assess the availability and operational adequacy of permanent collective/protective sheltering.

Operations readiness specialists (ORs) review an installation's contingency planning, emergency notification procedures and systems in place, mass casualty plans, emergency operations center capabilities and procedures, and terrorist incident response measures. They focus on incident response and consequence management. They assess first responders and their preparedness, equipment, intra- and intercommunications, and planning. ORs examine installation emergency operations and response measures, especially medical and fire capabilities and hazardous materials as well as procedures for ordnance disposal incidents. ORs review first responder personal protective equipment for applicability, adequacy, currency, and user training.

A Reluctant Reversal

The JSIVA team assessment is driven by the antiterrorism standards DOD established and codified in Instruction 2000.16 in response to the Downing Report. These 31 points are required to implement department policy and are fundamental to a solid antiterrorism program. They are echoed by each department component in its instructions, orders, and regulations and provide clear expectations for an installation. They describe the elements of a viable program, speaking to the AT plan and all its subsets, and to security, training, awareness, incident response, and consequence management. Weapons

roads, open perimeters, uncontrolled gates, and extensive reservations without security.

Repeated observations of inadequate physical security have led to a reluctant reversal away from openness. The services have moved to mandatory vehicle registration for DOD personnel, retirees, and family members and a requirement that visitors produce positive identification and have legitimate business. Facilities are entering into memoranda of understanding with local law enforcement and governments to permanently reroute traffic or close traversing roads during higher force protection conditions. Gates are being reduced to what a facility can control, and perimeter fencing, barriers, lighting, and other deterring improvements are being installed. The comprehensiveness of JSIVAs and the analysis of findings have been major factors in improving the security climate.

Many shortcomings can be solved procedurally. One is the fundamental deficiency of installation antiterrorism plans. A common problem is lack of detail. Measures that require implementation under time compression are often too vague or not resourced. For example, a measure that requires execution of the barrier plan should include placement diagrams, identification of resources and their location, means to move barriers in place or fill them with water, and points of contact for access to support equipment and personnel. A commander should ask himself if—should an incident occur late Sunday night—the security sergeant or the duty officer can quickly execute the directed measures without having to resolve issues.

In the current climate, JSIVA-noted vulnerabilities have been given priority attention. The overall antiterrorist posture of installations has improved thanks to increased awareness, command emphasis, the assessment process, comprehensive trends analysis, and cross talk with both service and CINC antiterrorism/force protection divisions; yet many areas need enhancement. A key catalyst has been face-to-face interaction between JSIVA teams and installation commanders with their AT/FP teams. The bottom line is that DOD personnel must have reasonable confidence that they and their families are being afforded protection from terrorist attack while they focus on their warfighting mission. It is the goal of JSIVA teams to make that possible. **JFQ**

operations readiness specialists review first responder personal protective equipment for applicability, adequacy, currency, and user training

of mass destruction vulnerabilities and threats are addressed. Every observation made in an assessment report must reference one or more of the DOD standards.

The teams have completed four hundred assessments since their inception. Many installations are undergoing a second. J-34 has taken observations from all assessments to establish trends and determine where emphasis is needed. A sampling of common findings shows where exploitable vulnerabilities are often identified. JSIVA assessors frequently encounter a fundamental inadequacy in installation access control. The problem commonly arises from a dichotomy between a post's traditional openness to the public and a need for commanders to know who is within their perimeters. Many posts and bases host museums, historical areas, open houses, air shows, and displays to promote public interest. Compounding the problem are traversing public

Yorkshire Regiment at dusk, France.

Planning War in Peacetime

By MICHAEL C. DESCH

Many historians, analysts, and policy-makers believe that war plans conceived in peacetime lead to war, despite the wishes of civilian leaders. This is the “Guns of August” school of thought which is prompted by the role of war plans in precipitating World War I. As Sir Basil Liddell Hart has noted, “The statesman may continue to send telegrams, but they are merely waste paper. The military machine has completely taken charge.”¹ War plans may also determine strategy in war. “Those who make or endorse the plans,” as

some observe, “are in effect determining the strategy both for peace and for the opening phases, at least, of a future war; they are giving the commands which really count.”² Extant plans might affect war management under certain circumstances. “When no one knows what to do in a crisis,” Richard Betts commented, “a contingency plan can virtually set the terms and focus the decisional debate. Advocates of an existing plan have an advantage over opponents who do not have one of their own.”³

The historical record shows that while war plans do not actually cause war—civilian political decisions do—they can affect wartime outcomes. The problem is that there is no consensus on exactly how. Thus it makes sense to examine how war planning affects military effectiveness.

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The Kaiser with his generals, 1917.



Accidental War

Why should one care about the impact of war planning? The implications of this question are clear: if the views of the Guns of August school are correct, civilian policymakers must be concerned about the nature and content of peacetime plans made by military professionals lest these plans undermine crisis management and lead to accidental wars. Conversely, if Helmut von Moltke (the Elder) was right, that no war plan ever survives contact with the enemy, civilian and military leaders ought to be wary of the fact that substantial resources devoted to peacetime war planning are being wasted because of its irrelevancy.

The general consequences of war plans have not been fully explored, however, because most of the extant literature consists largely of historical studies of individual plans. While many excellent monographs and essays look at the particulars of great power war planning before the World Wars and the Cold War, most fail to derive and test general propositions about the effects of these plans on wartime performance or offer concrete policy recommendations. There has been no attempt to link these inquiries to the larger conceptual debates in the social sciences. One exception was the spurt of interest in the

role of pre-war planning prior to World War I. During the early and mid-1980s scholars examined the origins of that conflict for clues about how World War III might be inadvertently triggered. They also regarded it as an illustration of the spiral model of international relations, which holds that wars often start by accident, in contrast to the reigning deterrence model of the Cold War period, which maintains that they start because one side believes it can gain more by armed conflict than by peace. As will become clear, however, the assessment of the role of war plans in causing World War I in the spiral model, and its generalizations about plans precipitating accidental war in other cases, are flawed. Therefore we do not yet have a persuasive theory about when and how plans matter.

Many regard World War I as evidence that war plans can cause wars. Until recently, it was widely believed that it was an accidental war, at least in terms of the desires of the civilian leaders of the great powers. As Prime Minister David Lloyd George put it, "the nations slithered over the brink into the boiling cauldron of war."⁴ There are two variations on this theme of accidental war: that civilian leaders misperceived the

many regard World War I as evidence that war plans can cause wars



Adolph Hitler (left),
World War I.

intentions of their neighbors as well as the relative advantages of offensive and defensive military technologies, or that the military organizations of each state ran amok. The bureaucratic interests of such military organizations, particularly maximizing autonomy from civilian control and minimizing uncertainty about the external environment, led to a “cult of the offensive” that glorified war and touted the virtues of striking first. This resulted in a proliferation of tightly coupled offensive war plans among the great powers which transformed another crisis in the Balkans into a world war. As A.J.P. Taylor put it:

It was often said before 1914 that one day the weapons of war would go off by themselves. In 1914 this happened. Though there were no doubt deep-seated reasons for disputes between the great powers, the actual outbreak of World War I was provoked almost entirely by the rival plans for mobilization. . . . [The great powers] were dragged into war by their armies instead of using the armies to further their policies.⁵

This second variant of accidental war is most relevant to the question of whether peacetime war plans can cause war.

The Guns of August view is that the plans of the great powers had a synergistic effect: individually they were wrong-headed; together they were catastrophic. As the story goes, Austria-Hungary, egged on by Germany, rejected a proposal that it cease its punitive operations against Serbia, stopping in Belgrade instead of completely defeating Serbia in response to the assassination of Archduke Franz Ferdinand in Sarajevo by a Serb nationalist. The unwillingness of Austria-Hungary to halt made war with Russia inevitable. The next link in the chain was the

unwillingness of Russia to consider a partial mobilization against Austria-Hungary in favor of a full mobilization also directed against Germany. This triggered the Schlieffen Plan, expanding the war to Belgium, Britain, and France. The offensive French Plan XVII played into German hands by providing a defensive pretext for attacking France while putting the weight of the French attack at precisely the right spot to make the Schlieffen Plan successful. Finally, since Britain allegedly had no plan to defend Belgium without France, it would be automatically dragged into any Franco-German war. The plans had at least three deleterious effects: they were mutually exclusive (the Russian inability to partially mobilize against only Austria-Hungary); they could not be changed—the Chief of the German General Staff, Helmuth von Moltke (the Younger), would not agree to refocus his forces against Russia on July 29, 1914, when it seemed Britain might not enter the war; and finally, they were all or nothing (Austria-Hungary rejected the “halt in Belgrade”).⁶ Taken together the plans constituted an infernal machine that produced a world war no one wanted.

Schlieffen Plan

Almost all of these problems were manifest in the Schlieffen Plan. As Gordon Craig noted:

Schlieffen and Moltke devised, and imposed upon the German army, the most rigid operational plan which had ever been accepted by any modern army, and one, moreover, which had dangerous political implications which were never fully understood by the political leaders of Germany or, for that matter, by the soldiers themselves.⁷

The plan was the German military solution to the geostrategic problem of being surrounded by its most likely adversaries, France and Russia. Germany had defeated France in 1871, occupying the Alsace-Lorraine region, and feared revenge. It was also preoccupied with the enormous potential of Russia. Since France and Russia were allies, it would undoubtedly have to fight both nearly simultaneously.

The Chief of the General Staff, Alfred von Schlieffen, arrived at a solution in the first draft of the plan in 1905 that was dictated by geography—France was closer—and technology—Russia could only mobilize slowly, taking at least six weeks. Thus the Schlieffen Plan called for Germany to mobilize in two weeks and then to send seven-eighths of its forces west. The object was to defeat France in less than six weeks and then turn most of its forces against Russia before the bear was awake. To defeat France quickly, Germany had to

German infantry on Belgian front.



attack through Belgium to sidestep the heavily fortified Franco-German border. But to avail itself of Belgium as a gateway to France required seizing the important railhead at Liège on the first day of the war. The Schlieffen Plan and the offensive war plans of the other great powers are the central villains in the accidental origins of World War I.

According to the Guns of August school of thought, the Schlieffen Plan caused civilians to lose control of the military. Craig argued that “the student of German policy in the summer of 1914 cannot help but be struck by the fact that the crucial decisions were made by the soldiers and that, in making them, they displayed an almost complete disregard for political decisions.”⁸ And another student of the war in the definitive study of the scheme argued that “the origin of the Schlieffen Plan cannot be found in political considerations, but exclusively in military technical ones; that it was not the Morocco Crisis of 1905 which brought it to maturity, but strategical studies and the lessons of staff rides going back into the nineties.”⁹

Further, many believe the Schlieffen Plan was irrational and unnecessary: irrational because it never offered a real prospect for success and unnecessary because Germany had other options in the event of war with France and Russia. The great Schlieffen Plan was never a sound formula

for victory. It was a daring gamble that depended on lucky accidents. In addition, it should be noted that Moltke (the Elder) proposed a plan known as *Grosse Ostaufmarsch*, involving a defensive stance in the west and limited offensive in the east. Many Germans found this a far more sensible solution to the geostrategic predicament.

Distorted History

The Guns of August view of World War I is no longer widely accepted. First, there is scant evidence that German civilians—not even the enigmatic Chancellor, Theobald von Bethmann Hollweg—were defensively inclined in 1914, a case made compellingly by Fritz Fischer:

Essentially, German war aims were not merely an answer to the enemy's war aims, as made known in the course of the war, nor the product of the war situation created by the 'beleaguered fortress' and the blockade; they are explicable only in the light of factors operating since 1890 or even earlier—naval policy, the 'policy of bases,' colonial, eastern, Balkan and European economic policies, and the general political situation which—primarily as an effect of Germany's own policy—produced after 1904 and 1907 the attempt to overthrow Germany by 'encircling' her.¹⁰



Council of Four in Paris, 1919.

the plans of the great powers were not as inflexible as often supposed

Utilizing archival sources unavailable to earlier scholars, Fischer found general support for a war to change the status quo among the military and civilian elites. The evidence includes enthusiasm expressed by civilians for *weltpolitik*, a policy to establish Germany as a world power which took root in the 1890s. That the nationalist right and some industrialists would support such a policy is unsurprising; but even Liberal intellectuals such as Max Weber and eventually most of the Social Democrats rallied to the cause. More controversially, some of Fischer's students claimed that there was evidence that leaders such as the Kaiser explicitly planned for war at least two years before the fact. Whether one accepts that view, Fischer convincingly shows that Hollweg, later an advocate of a moderate peace, initially supported a war of annexation. His proof is the so-called September Program of annexations formulated in 1914. The Guns of August view is hard to sustain given Fischer's revelations. As one observer points out, "One of the most striking features of the general image of World War I as an inadvertent conflict is the extent to which it ignores the arguments of Fritz Fischer and other historians who contend that Germany adopted an aggressive policy and deliberately provoked World War I."¹¹

Moreover, the plans of the great powers were not as inflexible as often supposed. Changes that Moltke made in the Schlieffen Plan show it was not set in concrete. Similarly, it is now known that the British had two contingency plans for defending Belgium: WF (with the French) and WB (with the Belgians). One analyst has argued that Britain went to war because its leaders were committed to maintaining the continental balance of power and concludes that British "plans only helped, only removed the need to improvise. They did not compel."¹² Likewise other scholars have concluded that even if Russia had initiated only a partial mobilization it would not have averted war.

There is little evidence that civilian leaders lost control of their militaries prior to the war, even in the case of Germany. The Kaiser was not forced into war during the first Moroccan Crisis of 1905–06 despite Schlieffen's effort to force the matter. In fact the Kaiser ended up retiring him. Similarly there is evidence that civilians, including Hollweg, knew the details of the plan. Finally, historians have laid to rest the idea that the German military was in charge during the July crisis.

Likewise the offensive war plans were not as irrational as the Guns of August school contends. Russia needed to fully mobilize, given its limited rail capacity and territorial mobilization system and evidence that Germany and Austria-Hungary were indissolubly connected. Still others make a compelling case that France and Russia needed offensive strategies to fulfill their alliance commitments to each other.¹³ Moreover, just because the Schlieffen Plan did not work does not indicate that it was irrational. Given its geographic position and political objective of overturning the status quo, Germany had few alternatives. And as will become clear, the original plan had a good chance of initial success.

The most damaging evidence against the claim that the war was accidental is the discovery that much of the supporting material was manufactured by the Germans in the years that followed. The myth was fostered by a special office (*Kriegsschuldreferat*) within the Foreign Ministry which sought to minimize war guilt. The result was that "the history upon which [the 1914] analogy was based has been distorted. It serves no purpose to continue to believe that Europe 'slid' into war unknowingly in 1914, and that fate or providence alone designed this cruel course of events."¹⁴

Offensive Plans

World War II challenges another prediction of the Guns of August school, that defensive war plans make conflict unlikely. Adolph Hitler, an offensively-oriented leader, had a defensively-oriented military, which only reluctantly formulated offensive plans. He was committed to going to

French gun crew near Argentan, 1937.



National Archives

war long before his military had such plans. He expressed his intention as early as 1924: "Only when the Germans have taken all this fully into account will they cease from allowing the national will-to-life to wear itself out in merely passive defence, but they will rally together for a last decisive contest with France."¹⁵ While Hitler was firmly committed to an offensive war even prior to coming to power in 1933, the German military did not start to conduct offensive war planning until the mid- to late-1930s—very close to actual offensive operations.

The German military formulated a defensive/offensive plan in 1935 for the contingency of a war with Czechoslovakia, France, and Russia known as *Stellung*, which they continued to modify until 1937 when it became Plan Red. But the first truly offensive war plan was one which guided the reoccupation of the Rhineland in 1936. The plan for the occupation of Czechoslovakia (Green) was not finalized until September 1938 in the midst of the Czech crisis. The plan to attack Poland (White) was formulated in April 1939, only months before the strike was launched.

The Germans developed Norwegian/Danish (*Studie Nord*) plans in winter of 1939–40 on the eve of their Nordic campaign in March 1940. Finally, the plans for attacking France and the Low Countries (Yellow) were only developed in October 1939, after war had been declared and only eight months before active operations began.

The situation was similar with the British and French. Remarkably, the Allies declared war on Germany after it attacked Poland in September 1939 without any offensive plans whatsoever. This is especially ironic in the French case because earlier in the interwar period Paris had a series of plans for offensive operations against Berlin. In 1920, for example, planners drafted Plan P to enable France to enforce the Versailles Treaty by threatening to occupy industrial centers in western Germany. In 1923, Plan A envisioned a full-scale offensive to prevent Germany from defeating Poland. But the military began a shift to defensive plans. In 1929, Plan B envisioned defensive actions in the Rhineland to allow the French and Belgians to establish defensive positions on their borders. Plan C in 1931 was based on a territorial defense anchored on the Maginot Line but with provisions for assisting Luxembourg and Belgium. With Plan D in 1933, the

Dispositions of Forces Under Original and Revised French and German Plans

German Forces	Original Schlieffen Plan (1905–1906)	Moltke Schlieffen Plan (1914)	Allied Forces	Plan XVII (A)	Plan XVII (B)
1 st Army		260,000	British Expeditionary Force	125,000	125,000
2 ^d Army		260,000	5 th Army	240,000	240,000
3 ^d Army		120,000	4 th Army	160,000	160,000
4 th Army	1,320,000	200,000	3 ^d Army	200,000	200,000
5 th Army		200,000	2 ^d Army	180,000	180,000
6 th Army		200,000	1 st Army	280,000	280,000
7 th Army	120,000	120,000			
German right/French left	1,320,000	1,040,000		125,000	725,000
German left/French right	120,000	320,000		1,060,000	460,000

[Note: Figures shown in italics refer to German right wing/French left wing deployed forces.]

Sources: Robert Asprey, *The German High Command at War: Hindenburg and Ludendorff Conduct World War I* (New York: Quill, 1991), and Barbara Tuchman, *The Guns of August* (New York: Macmillan, 1962), pp. 10–11.

focus of planning continued to be defensively oriented, relying more heavily on the Maginot Line. The French War Plan E in 1939 did envision moving troops into Belgium to protect a line on the Escaut/Scheldt River, so was basically defensive. The alternative Plan D (Dyle River) moved French defensive positions deep inside Belgium but did not diverge from the course of earlier schemes. The Breda Variant to Plan D in 1940, which moved Seventh Army into southern Holland to link up with Dutch forces, still did not contain provisions for attacking Germany. French designs changed dramatically over a short period and Paris declared war with no offensive plans.

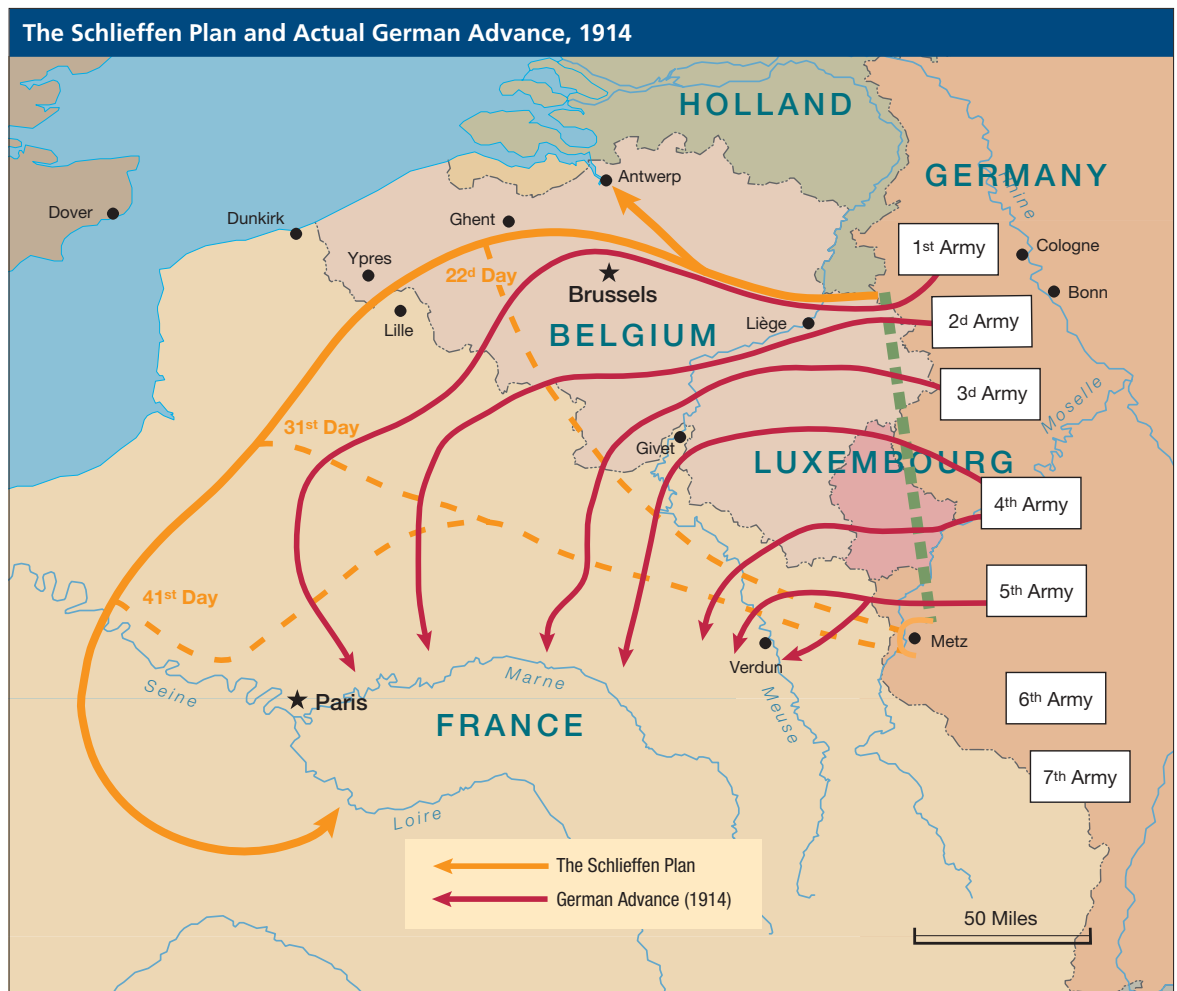
Neither of these cases conform to the logic of the Guns of August school. World War I was not a case in which defensively-oriented civilian leaders were forced into war by the offensive war plans of their militaries. Conversely, lack of offensive war plans did not hinder Hitler from going to war with the Allies. Nor did they stop the Allies from declaring war on the Axis after Germany invaded Poland. In short, war plans do not cause or prevent war.

Changing Ratios

But if war plans do not cause war, might they nevertheless affect military operations once war is declared? These cases suggest they can, but only to a degree. Many believe, for instance, that had certain critical changes not been made in the original (1905–06) Schlieffen Plan, the initial battles on the Western Front might have turned out differently. Schlieffen's successor as the Chief of the General Staff, Moltke, made three key alterations before August 1914. First, he changed the ratio of forces between the right and left wings. Schlieffen's dying words were reputedly "It must

come to a fight. Only make the right wing strong."¹⁶ In his original formulation, the balance of forces between the attacking German right wing and the defending entente left wing was about 13:1. Modifications made by Moltke as well as switches in French Plan XVII reduced that ratio to 1.43:1. A rule of thumb is that an attacking army needs a 3:1 advantage to achieve a breakthrough. These changes altered the attacker/defender ratios dramatically (see table). Second, Moltke sent two corps (180,000 men) from the important First Army to the east to help stem the Russian offensive into Prussia. Finally, he decided not to violate Dutch neutrality, forcing all the attacking German forces to transit through the bottleneck at Liège. Many historians agree with the observation made by L.C.F. Turner that if the Schlieffen Plan had been executed in its original form, it would have achieved "overwhelming initial success."¹⁷

The changes the French made in Plan XVII were even more important. The original plan would have pitted most front-line forces against the German defensive left wing, thus leaving the attacking right wing with either a 13:1 force ratio—the original Schlieffen Plan versus Plan XVII (A)—or a 10:1 force ratio—the Moltke Schlieffen Plan versus Plan XVII (A). Either would have achieved sufficient levels to make a German breakthrough likely. Conversely, Plan XVII (B) shifted a number of front-line forces north of the pivotal city of Metz (the hinge between the German right and left wings), dramatically changing force ratios on the German right and French left wings. Against the original Schlieffen Plan, it made the ratio 1.82:1; for a revised Schlieffen



Plan it lowered the ratio to 1.43:1. In either case it became impossible for Germany to achieve a 3:1 ratio and ensured that their assault would fail.

Changing plans also played an important role in deciding the Battle of France in May 1940. Many attribute the German victory to overwhelming numerical or technological superiority. But it has become clear that Germany enjoyed neither, except perhaps in the air. As Ernest May noted, "The essential thread in the story of Germany's victory over France hangs on the imaginativeness of German war planning and the corresponding lack of imaginativeness on the Allied side."¹⁸

Germany did not have a war winning plan from the beginning. As pointed out above, the original offensive plan against France (Yellow) was not formulated until October 1939, well after declaring war. Plan Yellow has sometimes been

characterized even by Germans as a replay of the Schlieffen Plan. That is not quite accurate, for the latter plan at least aspired to deliver a decisive blow by seizing Paris. Plan Yellow, far less ambitious, sought merely a tactical victory in Belgium. German forces in the west were organized in two army groups from north to south: Group B facing Belgium and Group A facing Luxembourg and northeastern France. Group B, with a total of 30 infantry and 8 armored divisions, was the main attacking force under Plan Yellow. Its aim was to fight through Belgian, French, and British forces and seize the Channel ports. Group A, with 22 infantry divisions, was expected to launch only limited supporting attacks further south on the Belgians and French to tie them down along the Meuse and Sambre. The Germans would have failed under the original plan. As Len Deighton has noted, "had the attack been made according

changing plans also played an important role in deciding the Battle of France in May 1940

to the earliest Plan Yellow, it would almost certainly have come to stalemate in the mud."¹⁹

In contrast, the final German plan of February 1940 was a war-winner. Various referred to as Plan Yellow [5], the Manstein Plan, or *Sichelschnitt*, it had a much more ambitious goal: to cut off and decisively defeat Dutch, Belgian, French, and British forces by targeting a weak section of the French front, breaking through it, and isolating the bulk of Allied forces in the low countries and northern France. Unlike Plan Yellow, *Sichelschnitt* placed the main burden of the attack on Army Group A, with 35 infantry and 10 armored or motorized divisions. Group B was relegated to a supporting role; with its 26 infantry and 3 armored divisions it was only expected to subdue Holland and tie down French and Belgian forces in northeastern Belgium and southern Holland. Spearheaded by XIX Panzer Corps under General Heinz Guderian, Group A was expected to thread its way through the Ardennes Forest, establish bridgeheads across the Meuse River, drive through the French Ninth and Second armies, and race toward the



General Giraud as prisoner.

French Channel coast, cutting off the bulk of the Allied forces in Belgium and northern France. The Germans targeted Ninth and Second Armies because they knew that unlike French forces manning defensive positions in Belgium, these units consisted largely of reserve or second-rate troops. The attack at these points achieved 5:1 superiority and a breakthrough came quickly. The key advantage was that the Manstein Plan exploited the weakest part of the French front and landed a knock-out punch.

Key to Defeat

Fate as much as strategy led the Germans to adopt the Manstein Plan instead of the original Plan Yellow. From the outset of the war Hitler was dissatisfied with the latter, which was provided by the High Command. But he was also skeptical when General Erich von Manstein (chief of staff to General Gerd von Rundstedt, Army Group A commander) proposed redirecting the main axis of attack through the Ardennes. Three events changed his mind. First, in January 1940 a German aircraft got lost and crashed in Mechlen, Belgium, with parts of Plan Yellow on board, which then fell into Allied hands. Second, German intelligence ascertained that the new French Plan D/Breda Variant placed most Allied forces in Belgium right in the path of the Army Group B main

axis of attack under Plan Yellow. Finally, sandtable exercises conducted in February 1940 demonstrated that *Sichelschnitt* was feasible. As Manstein concluded:

*The utter debacle suffered by the enemy in northern Belgium was almost certainly due to the fact that, as a result of the changes later made to the operational plan, the tank units of Army Group A were able to cut straight through his lines of communication and push him away from the Somme.*²⁰

The decisive victory in the Battle of France would not have happened without this change in plans.

Accounting for the collapse of France in the spring of 1940 has become a cottage industry. Many scholars, following Marc Bloch, attribute this strange defeat to domestic political conflict in the 1930s. While France did indeed suffer from internal disorder, how that caused its military reversal is unclear. Some suggest that poor morale hindered operational performance. But this was not the experience of the enemy. As one German historian has observed, "It must be stressed that Allied troops fought magnificently, and worthily upheld the traditions that had so impressed the Germans in the First World War."²¹ Others maintain that the one-year term of service imposed by civilian leaders undermined combat effectiveness. But Deighton concluded, "there were many first-rate French divisions with high morale and first-class equipment. The low standard of the reservists was more indicative of the extent of France's mobilization—one man in eight—than of the state of its regular army formations."²²

Many analysts have faulted the lack of an appropriate armored doctrine. Although that was a problem, it is unclear that doctrine alone was critical. As one analyst remarked, inappropriate doctrine was less a factor than the maldistribution of forces:

*The French defeat was owing not so much to a faulty conception of mechanized war but to a flagrant disregard by the high command of its own instructions. . . . Far from waiting to determine the main axis of the German advance [General Maurice] Gamelin dislocated his strategic reserves by committing the French Seventh Army to the Breda Variant.*²³

The positioning of forces was ultimately a function of war plans; thus the change in plans was seemingly the key to the defeat. Recall that under Plan E, the French would have concentrated on defending the northern border with only a small advance by 16th Corps into Belgium to take up positions on the Escaut/Scheldt River. Moreover, the plan kept Seventh Army, comprised of one mechanized, two motorized, and four infantry divisions, in reserve near Riems. German historians



Big Three at Yalta meeting, 1945.

have noted that “if the enemy remained in his positions on the Franco-Belgium northeast frontier then the proposed offensive wedge would drive straight into his deployment.”²⁴ Had the French stuck with Plan E, they likely would have stymied an attack based on Plan Yellow.

On the other hand, the shift to Plan D/Breda Variant on March 20, 1940, played a key role in the defeat. Unlike Plan E, it advanced French forces far enough into Belgium not only to defend the Channel ports but also to protect population centers, including Brussels. By standing on the Dyle River rather than the Escaut/Scheldt, the French expected to shorten their front by 40 miles. The Breda Variant to Plan D was even more ambitious: it sent Seventh Army farther north to Breda in the Netherlands to establish contact

with the Dutch, who were expected to retreat into a fortified area behind the Peel Marshes. Although Plan D shortened Allied lines, Plan D/Breda Variant extended them. More importantly, by moving Seventh Army to southern Holland, both of the plans moved one of the most effective units out of a position where it threatened the southern flank of the main axis of attack for Army Group A under the Manstein Plan.

Without any first-rate forces behind Ninth and Second Armies, once they were overcome the battle was over for all Allied forces further north. As Deighton reminds us, “A modern army attacked from the rear is as good as defeated. It simply seizes up into a traffic jam of monumental confusion. Thus the greatest ambition of a strategist is to attack an enemy’s rear and then sever the enemy from his supplies. The Manstein plan had achieved both these ambitions.”

Plan D/Breda Variant positioned only reserves and other second-rate forces opposite the Ardennes because the French high command thought it would have 8–9 days warning of an attack through the forest. This was a grave miscalculation, but much of the German army high command before February 1940 and even such astute military commentators as Liddell Hart made the same mistake. In short, the key failing in May 1940 was embracing precisely the wrong war plan in the face of imminent attack. Plan E would have foiled Plan Yellow and put a dent in *Sichelschnitt*. On the other hand, Plan D/Breda Variant played into German hands.

Clearly war plans do not cause wars; political decisions made by civilians do. Conversely, war plans can affect wartime outcomes but only under certain conditions. Those plans that affected battlefield outcomes for good or ill in both world wars tended to be formulated close to the actual combat, on lower levels by soldiers who would execute them. The plans envisioned campaigns that would be decided quickly and involved enemies relatively matched in strength and technology. War plans should concern policymakers not so much because they can cause or prevent wars, but because they affect the course of a conflict once begun.

Further research is necessary into how variations in plans affect wartime operations. Plans differ in terms of when they are formulated and how far into a conflict they try to guide operations, and also their level of detail, purpose, and flexibility. For example, American planners distinguish between wartime/crisis (crisis action) versus peacetime (deliberate) planning. They also delineate between campaign (initial stages) and contingency or outline plans (subsequent stages). Moreover, there are more general (concept) and more specific (operational) war plans. In addition, plans are formulated on relatively high levels such as the National Security Council or Joint Chiefs of Staff as well as on lower levels such as unified or theater commands. They can be made for a variety of purposes including mobilization, deployment, employment, and sustainment. Finally, they can be rigid (one option) or flexible (multiple options). Understanding consequences of these variations is essential in ensuring that more effective war plans are formulated. **JFQ**

NOTES

¹ Jack S. Levy, "Organizational Routines and the Causes of War," *International Studies Quarterly*, vol. 30, no. 2 (June 1986), p. 197.

² Walter Millis et al., *Arms and the State: Civil-Military Elements in National Policy* (New York: Twentieth Century Fund, 1958), p. 383.

³ Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises*, 2^d edition (New York: Columbia University Press, 1991), pp. 153–62.

⁴ Quoted in James Joll, "The 1914 Debate Continues: Fritz Fischer and His Critics," *Past & Present*, no. 34 (July 1966), p. 107.

⁵ A.J.P. Taylor, "War by Time-table," *Purnell's History of the 20th Century*, volume 2 (New York: Purnell, 1974), p. 444.

⁶ Levy, "Organizational Routines," p. 193.

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⁸ Jack Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914* (Ithaca, N.Y.: Cornell University Press, 1984), p. 121.

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war plans do not cause wars; political decisions made by civilians do

George Henry Decker

(1902-1980)

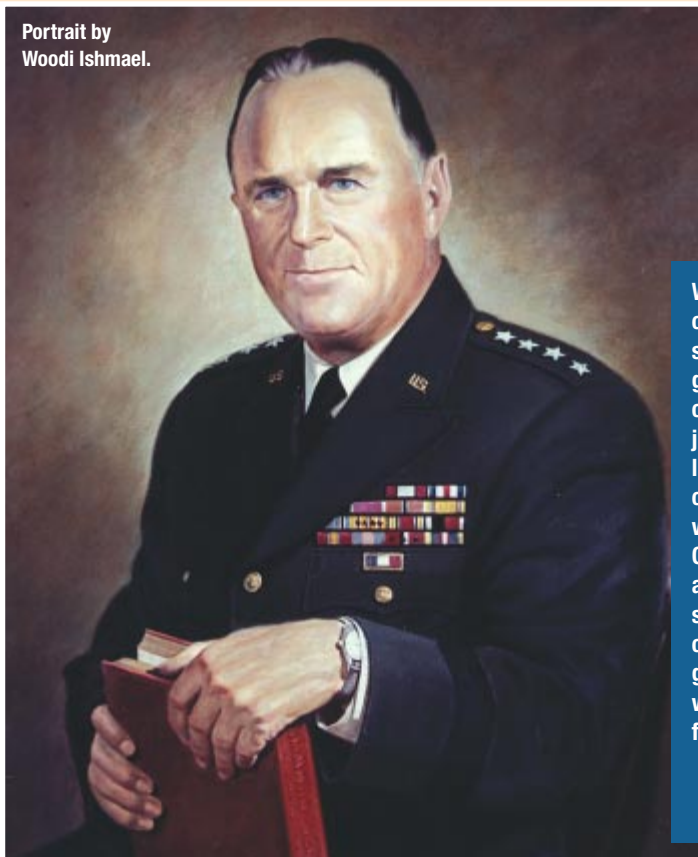
Chief of Staff, U.S. Army

VITA

Born in Catskill, New York; graduated from Lafayette College (1924); served with 26th Infantry at Plattsburg Barracks (1924–28); served with 35th Infantry, Hawaii (1928–31); graduated from Infantry School at Fort Benning (1932); served with 29th Infantry at Fort Benning (1932–35) and 7th Infantry at Fort Vancouver (1935–36); graduated from Command and General Staff School at Fort Leavenworth (1937); served with 10th Infantry at Forts Thomas and McClellan and 9th Infantry at Fort Bragg (1937–40); established and commanded Headquarters Company, I Corps, at Fort Jackson and was assistant supply and logistics officer (1940–41); served on the War Department General Staff in the Office of the Assistant Chief of Staff for Supply (1941–42); was deputy chief of staff of Third Army, Fort Sam Houston (1942–44); served in the Southwest Pacific as deputy chief of staff (1943–44) and chief of staff (1944–46) of Sixth Army and participated in Pacific operations and in the early occupation of Japan; served in Washington in Army Ground Forces and Army Service Forces headquarters (1946); was deputy commander in chief of staff of United States Forces, Middle Pacific, Hawaii (1946–48); commanded 5th Infantry Division at Fort Jackson (1948–50); served in the Office of the Comptroller of the Army as chief of Budget Division (1950–52); comptroller of the

Army (1952–55); commanded VII Corps at Stuttgart (1955–56); deputy commander in chief of the United States European Command, France (1956–57); concurrently commander in chief, United Nations Command, and commander of Eighth Army, Korea (1957–59); served as Vice Chief (1959–60); and Chief of Staff of the Army (1960–62); died in Washington, D.C.

Portrait by
Woodi Ishmael.



When it comes to shaping the structure of the military forces . . . the chief of each service has the responsibility for the organization and structure of his own particular service. And in this he, of course, is governed by his own civilian superior, the secretary of the service concerned and also the Secretary of Defense. So in this, each of the joint chiefs operating as the chief of his own particular service has a large influence, but, of course, the whole thing depends on what he can get in the way of resources to do what he wants to do. This is where the conflict occurs between the chiefs as members of the Joint Chiefs of Staff—it's in this fight for resources that disagreements arise. Some of the chiefs have been accused from time to time of "you scratch my back, and I'll scratch yours." I don't think this is a valid criticism of the Joint Chiefs of Staff. Each one does what he thinks in good conscience is right for his own service, and he uses the same way of assessing what's necessary in the other services when he is free to express an opinion on it.

—George H. Decker, Senior Officers Debriefing Program,
U.S. Army Military History Research Collection

2002 CJCS Essay Competition

The 21st annual Chairman of the Joint Chiefs of Staff Strategy Essay Competition was held on May 16–17, 2002, in Washington. This event was established by General David Jones, USAF, the 9th Chairman, to challenge students at the intermediate and senior colleges to write original essays on significant aspects of national security strategy.

FIRST PLACE ESSAY

LIEUTENANT COLONEL ALAN J. STEVENSON, CF

(Air War College)

“Shades of Gray: Gradual Escalation and Coercive Diplomacy”

SECOND PLACE ESSAY

MAJOR BRIAN L. THOMPSON, USA

(College of Naval Command and Staff)

“Surrogate Armies: Redefining the Ground Force”

THIRD PLACE ESSAYS

LIEUTENANT COLONEL JAMES L. BOLING, USA

(U.S. Army War College)

**“Rapid Decisive Operations: The Emperor’s
New Clothes of Modern Warfare”**

and

COMMANDER JAMES HOWE, USCG

(Marine Corps War College)

**“The Fifth Side of the Pentagon: Moving the Coast Guard
to the Department of Defense”**

Doctrine

GAME PLAN

Joint Pub 3-0, *Doctrine for Joint Operations*, is the keystone volume in the joint operations series. It “provides guidance to joint force commanders and their subordinates for the direction, planning, execution, and support of campaigns and operations—in war and in military operations other than war (MOOTW).” The current version (dated September 2001) replaces the edition issued in 1995 and features revised joint operations concepts.

Some revisions in the publication appear to have been driven by change in the strategic and operational environments as well as technological advances. Chapter I, “The Strategic Concept,” has sections on information systems and theater engagement planning and an expanded description of military operations which include nonmilitary organizations. Chapter II, “Fundamentals of Joint Operations,” contains considerations of both asymmetric environments and joint urban operations as well as a broader look at C³ISR issues. Chapter III, “Planning Joint Operations,” augments key planning factors to include a commander’s critical information requirements, concept of fires, countering air and missile threats, space operations, force protection, and the environment. One of the noteworthy aspects of this chapter is that it takes the phases from the previous edition, reduces them from five to four, retitles them, and revises their descriptions. Chapter IV, “Joint Operations in War,” adds sections on dimensional superiority, information superiority, joint strategic attack, and sustainment.

Other revisions are more subtle and substantive, particularly those related to the operational art in chapter III. For example, doctrine defines center of gravity in terms that include sources of power rather than locations, and acknowledges that “COGs also may exist at the operational level.” And the concept of decisive points is expanded to include specific key events and systems.

Unfortunately, one amendment is missing. Joint Pub 3-0 still includes a parenthetical note to the effect that “functional component commands are component commands of a joint force and do not constitute a ‘joint force’ with the authorities and responsibilities of a joint force as described in this document, even when composed of forces from two or

more military departments.” There is much to mull in that passage which, starting with the phrase “the authorities and responsibilities of a joint force.” What does that mean? Where are they succinctly stated?

These are not the only unanswered questions. The definition of center of gravity represents the third revision in three editions (1993, 1995, and 2001). Readers may ask why the change was made without explanation. Another example comes from a section in chapter II on “Organization of the Operational Area.” The 1995 edition stated “subordinate unified commanders are typically assigned theaters of operations.” That phrase, which links subunified commanders to theaters of operations, is omitted from the 2001 edition (associating JTF commanders with joint operations areas). Why has joint doctrine failed to link a theater with a particular commander?

However linkages are quite apparent between Joint Pub 3-0 and other joint references. For example, the pub includes a chart on command relationship identical to one found in Joint Pub 0-2, *Unified Action Armed Forces*. In addition, chapter V of Joint Pub 3-0 lists those types of military operations other than war that more closely correspond to, and actually expand on, those outlined in Joint Pub 3-07, *Joint Doctrine for Military Operations Other Than War* (June 16, 1995). But at least one doctrinal disconnect appears. In discussing multinational command and control, Joint Pub 3-0 outlines the purpose of a “coalition, coordination, communications, and integration center (C³IC)” depicting it in relation to Desert Storm (figure VI-3). Joint Pub 3-16, *Joint Doctrine for Multinational Operations* (April 5, 2000), uses the same chart bearing the acronym F²C² (friendly forces coordination council). C³IC is not described or depicted in Joint Pub 3-16.

An assessment of Joint Pub 3-0 would be incomplete without acknowledging that most of the joint concepts advanced in 1995 survive in this new edition with the same format, organization, and much of the content. Compared to the previous edition, it is twenty pages longer and contains more illustrations. Much of the narrative is cross-referenced to publications that have appeared in the period since 1995. Moreover, some of the language has changed to accommodate the concepts in joint vision statements such as full spectrum dominance and information superiority.

The general compatibility of the 1995 and 2001 editions of Joint Pub 3-0 seem to confirm that the joint and service communities have grown comfortable with the principles and ideas found in *Doctrine for Joint Operations*. Future editions may call for minor adjustment in the descriptions of joint concepts. Nevertheless, any changes in doctrine, whether blatant or subtle, should not go unnoticed. Subsequent revisions of existing publications would better serve its users by offering brief accounts of salient changes, perhaps in the executive summary. Such a device would herald those key changes that warrant careful consideration.

JFQ

ALLIED JOINT DOCTRINE

Developing Allied joint doctrine has turned into a growth industry for the Joint Doctrine, Education, and Training Division (J-7), Joint Staff, and doctrine community at large.

Thus far the United States has ratified 16 allied joint publications (AJPs)—15 within the last year. As a requisite number of nations ratify this doctrine, promulgated copies will be issued. These publications include: AJP-01(A), *Allied Joint Doctrine*; AJP-2.2, *Counter Intelligence and Security Procedures*; AJP-2.5, *Handling of Captured Personnel, Equipment, and Documents*; AJP-3.3, *Joint Air and Space Operations Doctrine*; AJP-3.4.1, *Peace Support Operations*; AJP-3.6, *Allied Joint Electronic Warfare Doctrine*; AJP-4, *Allied Joint Logistic Doctrine*; AJP-4.4, *Movement and Transportation*; AJP-4.5, *Allied Joint Host Nation Support Doctrine and Procedures*; AJP-4.6, *Multinational Joint Logistic Center Doctrine*; and AJP-4.10, *Allied Joint Medical Support Doctrine*. AJP-01(B), *Allied Joint Doctrine*, and AJP-03, *Allied Joint Operations*, will be promulgated soon.

Moreover, the Joint Doctrine, Education, and Training Division has developed a staffing guide for Allied joint doctrine actions which explains the doctrine process and codifies U.S. procedures and responsibilities. The guide also links the U.S. portion of Allied joint doctrine development to processes described in Joint Pub 1-01 and provides policy governing participation in multinational standardization activities.

JFQ

PULPLESS PUBS

The Chairman has approved a recommendation to end the production of joint publications in paper format, except for capstone and keystone titles. With this change, all below-the-line pubs will only be available electronically via the Joint Electronic Library on the Internet or CD-ROM.

Users can download and print current pubs from the Joint Electronic Library. To improve readability online versions have been modified to eliminate scrolling. Moreover, the Joint Staff has a stock of capstone, keystone, and selected reference volumes on hand. And the Joint Warfighting Center will retain an inventory of printed doctrinal pubs until below-the-line supplies are exhausted as part of the dial-a-pub program. **JFQ**

Lessons Learned

A BETTER WAY

The Joint Center for Lessons Learned (JCLL), which serves as the DOD executive agent for the joint lessons learned program (JLLP), enables the resolution of joint issues and shares knowledge on a range of joint matters. Through this process observations submitted by one unified command and then surfaced by others can be identified as joint warfighting issues. The center synthesizes observations into a single view of issues, trends, and knowledge. Furthermore, through integrated analysis with the joint experimentation process, JCLL recommends near-term changes in doctrine, training, leadership, education, matériel, personnel, organization, facilities, and capabilities.

The purpose of a joint lessons learned program is twofold. First and foremost, it exists to identify issues of joint warfighting significance, which are eventually forwarded to an appropriate resolution process. The program captures observations from organizations with diverse operations to develop issues which, when submitted to the resolution process, address existing deficiencies.

One challenge in establishing a common structure is defining terms, which must be simple and intelligible for all users. Beginning at the point of entry, information gathered during an event, regardless of type, is known as an observation, namely, a circumstance observed and documented, based on the level of expertise of an observer. It is nothing

more than a data point as seen through the eyes of an observer; it is not raw data. An observation captured by an observer experienced in a particular area should be considered accordingly.

Analysis is conducted once observations on an event are collected. It involves examining, organizing, and evaluating information as well as identifying component parts, relationships, and trends to establish facts for subsequent use. The level of analysis is determined by the organization conducting the review based on its available resources and can simply take the form of a review to vet aggregated observations or a much more detailed examination such as that conducted by JCLL. A finding is called a lesson, and may be an issue to be resolved or knowledge to be shared.

The determination of a potential joint warfighting issue as a result of analysis is the primary purpose of JLLP. Issues are worked on each level of the process. On the organizational level, this can include updating a standing operating procedure or operations plan. On the JCLL level, it can involve analysis of observations from participating organizations to determine potential issues and trends requiring mediation by the Joint Staff, for example, under the Chairman's Remedial Action Program. Issues are considered only after they are incorporated

in planning, doctrine, tactics, and training, enabling a task to be accomplished to standards.

The program has four major components—the user, inputs, process, and outputs—which shape the collection, analysis, and distribution of observations. Regardless of the type or level of an operation (training or contingency), no part is ever omitted. In a typical operation, for example, the joint task force or user collects and records the observations (inputs) from assigned commands, organizations, and staffs. At the end of an operation, or in given period of an ongoing operation, inputs are processed, analyzed, and eventually distributed to the next level, for example, the office of primary responsibility at a unified command. On each level that office has the responsibility for processing observations to ensure accuracy and completeness, conducting a level of analysis, and distributing the final report to the next higher level to meet established suspenses.

Contact the center at jcll@jwfc.jfcom.mil or <http://www.jwfc.jfcom.mil/dodnato/jcll/>; write to U.S. Joint Forces Command, ATTN: JW 4000, 116 Lakeview Parkway, Suffolk, Virginia 23435-2697; or call (757) 686-7270/DSN 668-7270 or Fax (757) 686-6057/DSN 668-7270. **JFQ**



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WAR BY ANY NAME

A Book Review by
KALEV SEPP

Winning Ugly: NATO's War to Save Kosovo

by Ivo H. Daalder and Michael E. O'Hanlon
Washington: Brookings Institute Press, 2000.

343 pp. \$24.95
[ISBN: 0-8157-1696-6]

Virtual War: Kosovo and Beyond

by Michael Ignatieff
New York: Metropolitan Books, 2000.
246 pp. \$23.00
[ISBN: 0-8050-6490-7]

Two books on the Kosovo conflict—one intended for diplomats and military professionals and the other for “citizens of modern democracies”—offer us some valuable lessons. *Winning Ugly: NATO's War to Save Kosovo* by Ivo Daalder and Michael O'Hanlon is a crisp, reasoned critique of political and military actions in the Balkans during 1998–99. Notably, they consider key issues of concern to joint commanders and planners alike, including coercive diplomacy, humanitarian intervention, and casualty avoidance. *Virtual War: Kosovo and Beyond* by Michael Ignatieff is the third in a series of books in which the author criticizes “the way Western governments have used military power to protect human rights since the end of the Cold War.” Although Ignatieff applies knowledge of ethnic conflict and nationalism to the same operational issues, he consciously offers “no policy prescriptions for politicians, and no advice for generals.” He only sets out to explain “the emerging morality governing . . . the new technology of war,” a theme that he examined in an earlier work entitled *The Warrior's Honor*.

The thesis advanced by Daalder and O'Hanlon is reflected in the title of their book. NATO made serious mistakes during the crisis preceding the conflict, and was actually losing to Serbia in the initial campaign—but then changed its overall approach and won the war convincingly. The structure of their argument is both straightforward and clear, from the introductory first chapter (which serves as an



Kosovar Albanians
celebrate arrival of
marines.

2nd Marine Division (Craig J. Shell)

executive summary), through the historical background, escalation, and entry into war between Serbia and NATO, and initial Allied failure and subsequent victory. The analysis found in the final chapter is followed by excellent appendices (a chronology, key documents, and “Military Issues in Operation Allied Force”) and enhanced by detailed and readable charts. These alone make the book a valuable reference work.

The idea that coercive diplomacy can be effected using airpower alone receives little support in *Winning Ugly*. According to Colin Powell, the exclusive use of aerial bombardment is a hope-to-win rather than a sure-to-win method. Although the authors determine that the “air campaign was the most fundamental factor” in the defeat of Serbia, they also credit Russian diplomatic pressure on Slobodan Milosevic, NATO unity, and development of “a credible threat of a ground invasion.” The United States has a well-deserved reputation for liberating conquered territory from occupying armies—and when a land offensive seemed imminent, the Serbs folded.

The Japanese thought they could send a signal with air strikes on purely military targets at Pearl Harbor that would drive America from Asia. In 1999, “The basic idea of using bombing as an element of coercive diplomacy was pushed . . . by the State Department, with strong support from NATO . . . [which] expected air strikes to last only a few days.” The consequences of Allied miscalculation were fortunately recoverable,

largely because Milosevic escalated ethnic cleansing in Kosovo after the bombing campaign began.

The body-bag syndrome—tied to both quick-war and no-ground-force assumptions—has never been substantiated and remains unproven by Kosovo. As Andrew Erdmann pointed out in *Orbis* (Summer 1999), it is not a contradiction that the United States prefers no military casualties but will accept them in a worthy cause. The administration never adequately explained the national interest and humanitarian crisis in Yugoslavia to the American people or to Congress. Ethical issues aside, the real problem with pilots bombing with impunity from high altitude was that it was ineffective. Powell assailed the implication that military leaders were fearful of losses in an op-ed published in *The Wall Street Journal* (September 14, 2000): “The no-casualty approach is not a military strategy. It is a political strategy used when a political judgment is made that the American people will not support the loss of their GIs for the goals being pursued.”

Daalder and O'Hanlon feel that the ongoing debate over appropriate conditions for military interventions, and their objectives, is muddled because “the Powell doctrine is often confused with the Weinberger doctrine.” Determining vital national interests is less important in decisions on the use of force than the necessity to ensure such force is swift and decisive when used; and the view expressed by Powell was validated in the case of Kosovo.

Lieutenant Colonel Kalev Sepp, USA (Ret.),
taught history at the U.S. Military Academy.

Any intervention for humanitarian reasons will raise seeming contradictions for campaign planners. As the crisis escalated in Kosovo, the desire to act quickly and decisively was countered by the need to build consensus within an unsure NATO and also with a contrary Russia. Milosevic had to be pressured to end his violent purge without unduly encouraging Kosovar Albanian separatists (since Kosovo's autonomy but not full independence was the agreed diplomatic objective). What is more, Milosevic was assumed by Western diplomats to be essential in the resolution of the larger Balkans crisis, so there would have to be limits in efforts to coerce him. Similar conundrums exist in Colombia, Sierra Leone, Afghanistan, East Timor, the Congo, and other places currently beset by civil wars and hundreds of thousands of refugees.

In the tradition of avid Wilsonian internationalism, *Virtual War* is an account of the Kosovo conflict that advocates "the necessity of war in defense of human rights" while criticizing the West for its lack of commitment to that principle. The book is a collection of six essays (three of which have appeared in *The New Yorker*) depicting several prominent actors. It is also an analysis intended to help average citizens "understand military power much better than we usually do."

These character studies are illuminating contributions to the history of the crisis. The actors include Richard Holbrooke, principal American official in the Balkans; Robert Skidelsky, a Britain who advocates human rights enforcement as the sole justification for foreign military intervention; Louise Arbour, a Québécoise magistrate who indicted Milosevic for war crimes; and Aleksa Djilas, the Harvard-educated Serb and son of the famous anti-Stalinist dissenter. The officer who directed the NATO aerial bombardment, General Wesley Clark, is the *virtual* commander of a *virtual* war. The book's description of painstaking targeting process followed by Clark exposes the strictures of the air campaign—"to wage a war that was clean yet lethal, just yet effective, moral yet ruthless."

The author's critique of the conduct of virtual war is not as coherent as his earlier analyses. For example, Ignatieff asserts that "the Kosovo campaign obtained its objectives" without citing any of them, but variously states that the conflict ended as an "incomplete victory," mere "military technical agreement," "debacle," and "virtual" victory. His notions of the "Colin Powell" and

"Air Force" doctrines, as a basis for his arguments, are unlike any of the official versions, and he seems to accept the discredited zero-casualty war premise as a policy standard. He does not question why the Serbs are cast as the enemy in the Balkans, or if bombing was unavoidable; and he defines war itself only in passing as "an uncertain gamble."

According to Ignatieff, much of the case for the viability of military intervention in human rights crises rests on the presumed technologically-driven revolution in military affairs (RMA). But some leading analysts, including Michael O'Hanlon, Colin Gray, and Paul Van Riper, dispute the existence of a definitive RMA. Van Riper challenges the idea that cell phones and laptops have transformed war into something utterly new, requiring the replacement of established concepts and terminology with Toffleresque buzzwords. Williamson Murray has warned that the fascination with such an RMA "represents . . . a return to the McNamara paradigm" that promised a quick, cheap victory in Vietnam using efficiencies gained from technology.

Moreover, Ignatieff retails the fallacy that the Army failed to embrace RMA, and thus could not move quickly to the Balkans—forgetting that an infantry corps (50,000 soldiers) was ready to begin deploying from the United States in a matter of hours, and that a "heavy industrial" armored corps, with logistical support, was stationed in Europe. Railways could carry lead Army units to the Serbian border within a day, narrow tunnels notwithstanding. It is unlikely that any neglected technology could have restrained or accelerated such a movement.

Virtual War introduces readers to the dialogue that Ignatieff and his circle have on evolving concepts of human rights and universal values. But the book falls short in its announced purpose of explaining the present and future character of force and statecraft either in theory or application. It is likewise unconvincing in proffering virtual war as a new phenomenon or even a new designation for an age-old concept—limited war.

While Daalder and O'Hanlon may equivocate ("Could war in Kosovo have been prevented? . . . maybe.") and miss a historical point (the first NATO combat action was Operation Deliberate Force in 1995), their conclusions should be further debated. Nonetheless, *Winning Ugly* is good reading for joint commanders and planners who advise policymakers and execute their decisions to use force in wars of intervention.

THE FIGHT FOR PEACE

A Book Review by

GEOFFREY D.W. WAWRO

After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars

by G. John Ikenberry

Princeton: Princeton University Press, 2001

320 pp. \$55.00

[ISBN: 0-691-0509-2]

In terms of national interests, this book has appeared at just the right moment. Using three case studies, John Ikenberry persuasively shows that the defense of a great power is best assured not by coercion or triumphalism, but by a shrewd, patient policy of a postwar order acceptable to winners, losers, and those states in between. *After Victory* laudably reduces theory to a minimum, and within that limitation, not a word is wasted. The author takes on the realists, assailing what is regarded as a false dichotomy between anarchic foreign relations (the strong dominating the weak) and domestic politics (which often as not result in the strong being blocked or attrited by coalitions of weaker parties and interest groups).

International and domestic politics are essentially the same according to Ikenberry. In order to lead victorious states must accede to restraining pacts to reassure losers, entice fence-sitters, and bind the hegemon—such as Great Britain in 1815 and the United States in both 1945 and 1990—to a larger cooperative system with constitutional characteristics. Though he overrates British power in 1815, he convincingly proves that Britain did well to offer France generous terms and prolong the Quadruple Alliance—which won the Napoleonic Wars—as a peace-regulating congress system into the 1820s. Deft diplomacy by Castlereagh secured the peace by drawing the middle powers, Austria and Prussia, into the system with generous grants of territory, conceded France its ancient frontiers, and took pains to reward and restrain Russia, Britain's chief rival at the time.

World War II ended on a note of comparable complexity. Germany, like

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JFQ

France in 1815, was broken and beaten; the United States, like Britain 130 years before, confronted Russia across Central and Western Europe. There the similarities ended: no concert diplomacy existed between the ideologically-minded Americans and Soviets. With the Cold War in full swing, there would be no Congress of Vienna or Paris Peace Conference to tie up the loose ends. And yet America had to somehow resolve them. In a review by the Department of State in 1948, George Kennan pointed out the vulnerability to Soviet adventurism: "We have about 50 percent of the world's wealth but only 6.3 percent of its population." The United States needed to secure markets and raw materials from around the globe. Geopolitics was enjoying a renaissance: "if the rimlands of Europe or Asia became dominated by one or several hostile powers, the security implications for the U.S. would be catastrophic." Washington came up with a two-pronged solution: contain the Soviet Union and achieve economic peace with the rest of the world. President Roosevelt had hoped that a unified, rebuilt Europe would pool its resources against Soviet aggression, but Britain and France had little enthusiasm for European union. Britain wanted America to act as a counterweight to Germany or Russia, but lacked the resources and political will to develop European military power that would further strain the Commonwealth. Paris shared the concerns expressed by London but also wanted U.S. troops and aircraft in Europe to relieve its forces for colonial service. In this way, NATO was born, and Americans became committed to European bases. Ikenberry clearly spells out the issues: U.S. forces were a necessary component

of the new Europe, part of that a complex system needed to make and preserve the peace.

Until the Korean War, the world economy concerned Washington as much as Moscow's designs. Looking back on the 1920s and 1930s, America attributed the Great Depression and rise of fascism to the autarkic, protectionist policies pursued by many advanced industrial states. From the U.S. perspective, an open, international economic order was a prerequisite for future stability. Yet that was precisely what France and Britain did not want. Worn down by World War II, they sought revival through trade with their colonies. John Maynard Keynes actually alluded to Washington's "lunatic proposals" for a free trading system. American leaders set patiently to work again, forging compromises that would establish the United Nations, Bretton Woods, Group of Seven, and rapid integration of Japan into the global economy. These were strategies designed to broaden American power without alarming the world. Bound by these "restraining pacts" and institutions, the United States could exercise power without seeming omnipotent.

Constructing an international system like that conceived by Truman or Castlereagh is never easy, as the failed peace of 1919 amply demonstrates. President Wilson's conceit was his attempt to reinvent the world. Where other statesmen worked with the imperfect tools inherited after a war to achieve a functioning settlement, Wilson assumed that the Bolshevik revolution and collapse of the German and Austro-Hungarian empires augured a new age of liberalism

and social democracy that would make old-fashioned appeals to national or strategic interest obsolete. In this context, the League of Nations was not so much idealistic as fatuous. He ignored protests from the French, British, and Congress, failing to establish an international consensus for postwar revival. Another issue was the relatively small number of American casualties, only one tenth of French or British losses. To the Europeans, the United States had not suffered enough to lead the peace effort.

Wilson had failed to grasp what Ikenberry calls "the problem of power." The Great War led to new asymmetries of power—a rich America and a shattered Europe—that bred fear and suspicion. U.S. advantages—in population, agriculture, manufacturing, raw material, and capital—were only magnified by World War I. For America to lead, it needed to engage wholeheartedly in European integration and reconstruction. Instead Wilson bypassed European statesmen and appealed directly to the masses on two trips to Europe in 1918–19. He was mobbed by newsmen, trade unionists, and the left. "I can fancy the generation of Washington, Hamilton, Jefferson, and the Adamses looking on with enraptured amazement that the American spirit should have made such conquest of the world," the President stated in 1919. Quite the contrary: the end of the war caused a shift to the right in Britain and France which wanted to squeeze Germany until the "pips squeaked." The end-run by Wilson—his appeal to the "organized opinion of mankind"—alienated both Clemenceau and Lloyd George, who were essential allies.

After Victory concludes with a caution. The end of the Soviet Union left the United States at the pinnacle of power, tempting America to intervene when and where it likes while shucking off "institutional encumbrances" that the author views positively. Such encumbrances will be familiar: landmine and environmental accords, the international criminal court, and U.N. Secretary Generals (such as Boutros-Ghali). There is obviously a liberal bias in this last section of the book; there are reasonable objections to many of Ikenberry's points. But his argument is consistent: he would like the United States to return to the spirit which prevailed in the wake of World War II and renounce "hyperpower." Events over the next several years are likely to write the last chapter of this book.

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MACARTHUR'S AIR WAR

A Book Review by

THOMAS E. GRIFFITH, JR.

Fire in the Sky: The Air War in the South Pacific

by Eric M. Bergerud

Boulder, Colorado: Westview Press, 2000.

752 pp. \$20.00

[ISBN: 0-8133-3869-7]

Biak, Buna, and Port Moresby are all place names that lack the emotional impact of Anzio, Normandy, or the Bulge. Although the harsh conditions of the South Pacific during World War II affected thousands of soldiers, sailors, marines, and airmen, the conduct of the war in that theater remains unknown to most American readers and unexamined by many historians. *Fire in the Sky* is the second book by Eric Bergerud in a planned three-part series intended to fill this gap. A first volume, *Touched With Fire*, analyzed ground warfare in the same theater while the third will be focused on the conduct of naval operations.

Fire in the Sky examines how the air war in the South Pacific unfolded from early 1942 to early 1944. Inspired in part by a lack of attention to this aspect of World War II, Bergerud focuses on this specific period for various reasons. He argues that those who cite overwhelming firepower as an explanation for the American victory all too often ignore the rough parity of opposing forces during these years. This symmetry explains the uncertainty which confronted the participants and how they viewed their efforts. Perhaps more importantly, this period provides a glimpse into how the Japanese lost the ability to fight effectively in the air, a weakness that would lead to their defeat. In addition, the relatively small size of the units involved offered an opportunity to better grasp the complexity of modern warfare by examining actions more closely than is possible in the case of the European theater.

The author tackles the subject topically rather than chronologically, an approach which can be tough for those

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Douglas Dauntless dive bomber over Wake Island, 1943.

U.S. Navy

unfamiliar with the course of the war. He first considers the three-dimensional battlefield of the air war. Bergerud looks at the environmental factors that influenced air combat as well as more down to earth matters such as the size of the area, terrain, climate, and the impact of tropical diseases. This section weaves an overview of the war, from the buildup and attack by the Japanese through 1944 when the majority of American units moved out of the South Pacific.

Next the author discusses armament, interwar aviation development, and preparation for war. In-depth profiles of both sides provide analyses of the most widely used aircraft which dissect their strengths and weaknesses as well as their employment in combat.

Finally, Bergerud offers details on aerial combat from a perspective of the warriors involved, based on interviews with participants. He also considers tactics and formations, highlighting differences between the real air war and romantic wartime descriptions and newsreel footage.

Fire in the Sky presents a close-up view of the air war as seen by those who flew missions, serviced the planes, and worked at hundreds of other tasks to mount combat sorties. In addition to these rich accounts, this book focuses on the complex nature of airpower and how both scientific and technological contributions combine with doctrine, training, supplies, and morale.

Bergerud provides little coverage of the challenges faced by air commanders. He focuses instead on the average pilot and airman on the ground. Nor are there new interpretations of the war. Bergerud rather presents casual asides that are not fully developed or supported by research. For instance, he states that: "The weather facing men in the South Pacific was not extremely severe when compared with many other theaters" and "It would be rare for a U.S. aircraft to suffer fatal structural failure because of a storm, but no doubt it happened." These claims are not borne out by the facts. In the Southwest Pacific it was accidents, mostly caused by the weather, that accounted for almost as many losses as those attributed to Japanese, and U.S. commanders directed aviators to avoid flying through thunderstorms because of the possibility of structural damage.

The author does not examine how airpower complemented ground and naval forces even though the Southwest Pacific provided the best laboratory of jointness. Land, sea, and air forces fought together daily. Bergerud relates the symbiotic relationship of various forces, but foregoes any analyses of joint warfighting. Although his concentration on land, sea, and air operations does fill a gap in the history of World War II, perhaps a fourth volume by Bergerud on joint warfare would address a conspicuous void in the literature on the conflict.

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MILITARY HISTORY RECONSIDERED

A Book Review by

HOLGER H. HERWIG

Was ist Militärgeschichte?

edited by

Thomas Kühne and Benjamin Ziemann
Paderborn: Ferdinand Schöningh, 2000.
359 pp. DM 78.00
[ISBN 3-506-74475-5]

Some one hundred historians, notably Germans who were born after World War II, met at the University of Bochum in late 1998 under the auspices of the Working Group for Military History to take stock of their profession. Buoyed by the increasing number of dissertations on military history submitted to German universities and the establishment of the first chair in military history at Potsdam, these academics reviewed the past, analyzed the present, and finally commented on the future of military history. Although the published proceedings of this seminal event—*Was ist Militärgeschichte?*—remain inaccessible to those who do not read German, their significance for students of military history is obvious.

One of the contributors to this volume, Stig Förster (Bern), recalled that it was Clausewitz who first rescued military history from the “drums and bugles” genre of his own day and that not only politics but also the social, economic, and technological face of war had received attention from Otto Hintze, Max Weber, and Hans Delbrück. In turn, this resulted in the war-and-society military history in the Anglo-Saxon world in the 1950s—led by Sir Michael Howard, Geoffrey Best, Brian Bond, et al. In part, this development was the impetus for the establishment of the Military History Research Center at Freiburg in 1957 (since removed to its putative roots at Potsdam), replete with its own journal and publication series. Like similar institutions in the United States and elsewhere, it was conceived as a civilian-military partnership, but it is deemed a failure by one of its erstwhile members, Wolfram Wette, because of the dominance of officers and the emergence of entrenched bureaucratic inertia.

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Part of the problem is that the German account of the two world wars had been dominated by military commanders turned historians. When it came to writing the official history of the Great War (14 volumes, 1925–55), for example, Delbrück was quickly marginalized and the tone was set by officers. “The old army conducted the war,” crowed General Karl von Borries of the Historical Commission, who was entrusted with producing the series, “and therefore [the work] must also be written by the members of the old army.” Following World War II, argues Wilhelm Deist (Freiburg), General Franz Halder, a former chief of staff, and Field Marshal Georg von Küchler used ties to Basil Liddell Hart to head off critical assessments of either the *Wehrmacht* or Third Reich. Küchler recommended the sanitized official history, *Der Weltkrieg 1914 bis 1918*, as a model and demanded that there be “no criticism on leadership decisions.” For efforts to retard historical investigation, Halder received the U.S. Civilian Service Award in 1961. It is no wonder then that Gerd Krumeich (Düsseldorf), paraphrasing Georges Clemenceau, warned the conference that military history was too important to be left to the military.

Still change was afoot. In 1967 when the Military History Research Center was founded, Rainer Wohlfeil, its leading historian, addressed the nature of military history in the inaugural issue *Militärgeschichtliche Mitteilungen*. Defining military history as an inquiry into “the armed forces of a state . . . as an instrument of politics . . . concerned with the problem of leadership in peace and war,” he pleaded that it be recognized as a “subdiscipline” of general history. Indeed, much of the speculation in the volume under review takes up that plea. What should be the relationship of military history to history overall? Roger Chickering (Georgetown) contends that military history must be *histoire globale* and *histoire des mentalités*—total war of the 20th century requires nothing less than total history. Somewhat less formidably, Anne Lipp (Tübingen) states that military history is also cultural history; that the symbolic and heroic nature of wars and warriors awaits theoretical conception. And Christa Hämmerle (Vienna) calls on scholars to end the “asymmetry” of male-female polarity and to “demilitarize” and reinvent military history as gender history. More traditionally, Jost Dülffer (Cologne) tells us that after all war is a political act. Marcus Funk (Berlin) pleads for more sociological

analysis of the military system. Stefanie van de Kerkhof (Cologne) argues for attention to the “sinews of war” while Stefan Kaufmann (Freiburg) implores historians to finally come to grips with the revolution in military affairs.

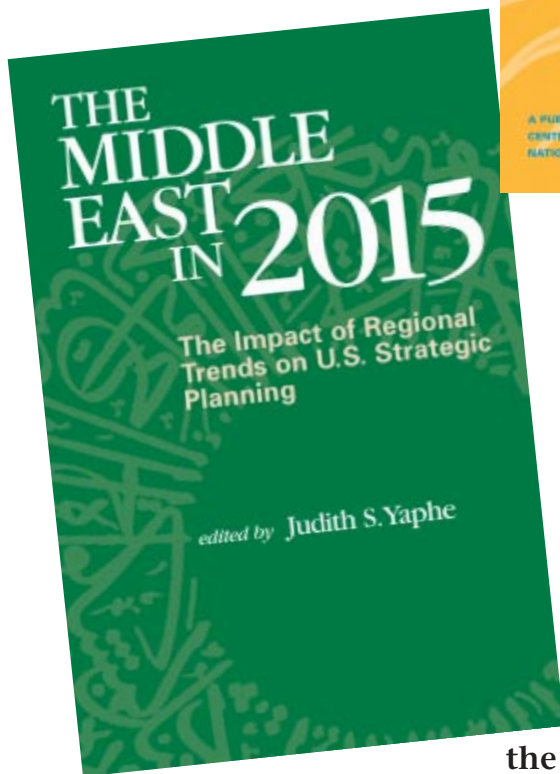
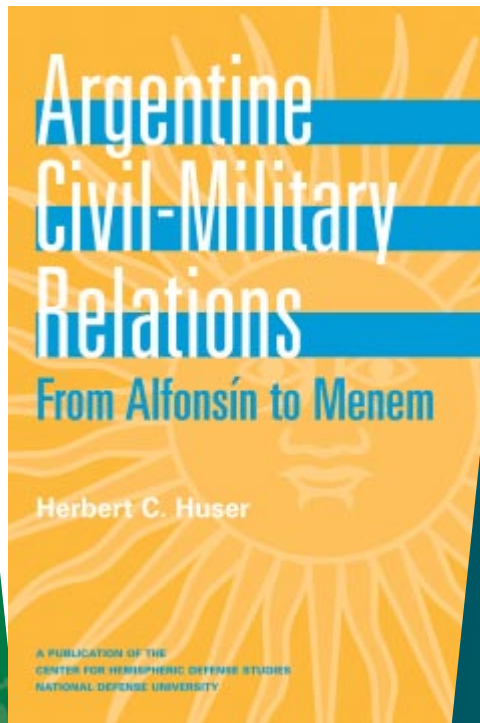
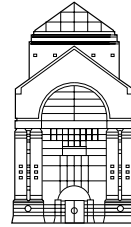
In unquestionably the most powerful section of the book, Bernd Wegner (Hamburg), ably seconded by Dennis Showalter (Colorado College), demands that operational history not continue to be abandoned to military buffs, memoirists, and former soldiers. It still is not taught in Germany at civilian or even *Bundeswehr* universities. It is not to be found in library catalogues. And internet search engines instruct one to look up “opera history”—this in a country that more than others put operations front and center. Academic political correctness decries the study of operations as superfluous and even morally offensive. But Wegner asks how the world would have looked if the Battle of the Marne in 1914 had come out differently—or the *Sichelschnitt* of 1940 in France had collapsed—or if Moscow had fallen in 1941. For all the flood tide of books on the Nazi era, why is there so little on Hitler as warlord? And why in general surveys is there so little (often only 20 percent) on the war, the alpha and omega of the Nazism? “War,” as John Keegan has argued, echoing Clausewitz, “ultimately is all about fighting.”

So what is the status of *Militärgeschichte* in Germany today? It has slowly nudged open the gates of academe. It has organized a working group which includes the editors of this volume. It is back on publishers’ lists. It will even find formal recognition as a subdiscipline of general history, as Wohlfeil demanded in 1967. But I suggest that it will, as suggested by Chickering and Ute Frevert (Bielefeld), become fully integrated into a general history of society—a new cultural or total history. For that to occur it must overcome many bastions of bias and power. A new history that elegantly combines military operations with political, social, economic, technological, cultural, psychological, and gender history, would tax its most ardent apostles. Perhaps Wegner and others will succeed in convincing the *Bundeswehr* to drop its insistence on using the term *defense history* (*Wehrgeschichte*) and to embrace the term *military history* (*Militärgeschichte*). But that may be too much to ask of an institution that transferred its Military History Research Office to Potsdam after 1990—while the Federal Military Archive remained 800 kilometers to the south at Freiburg.

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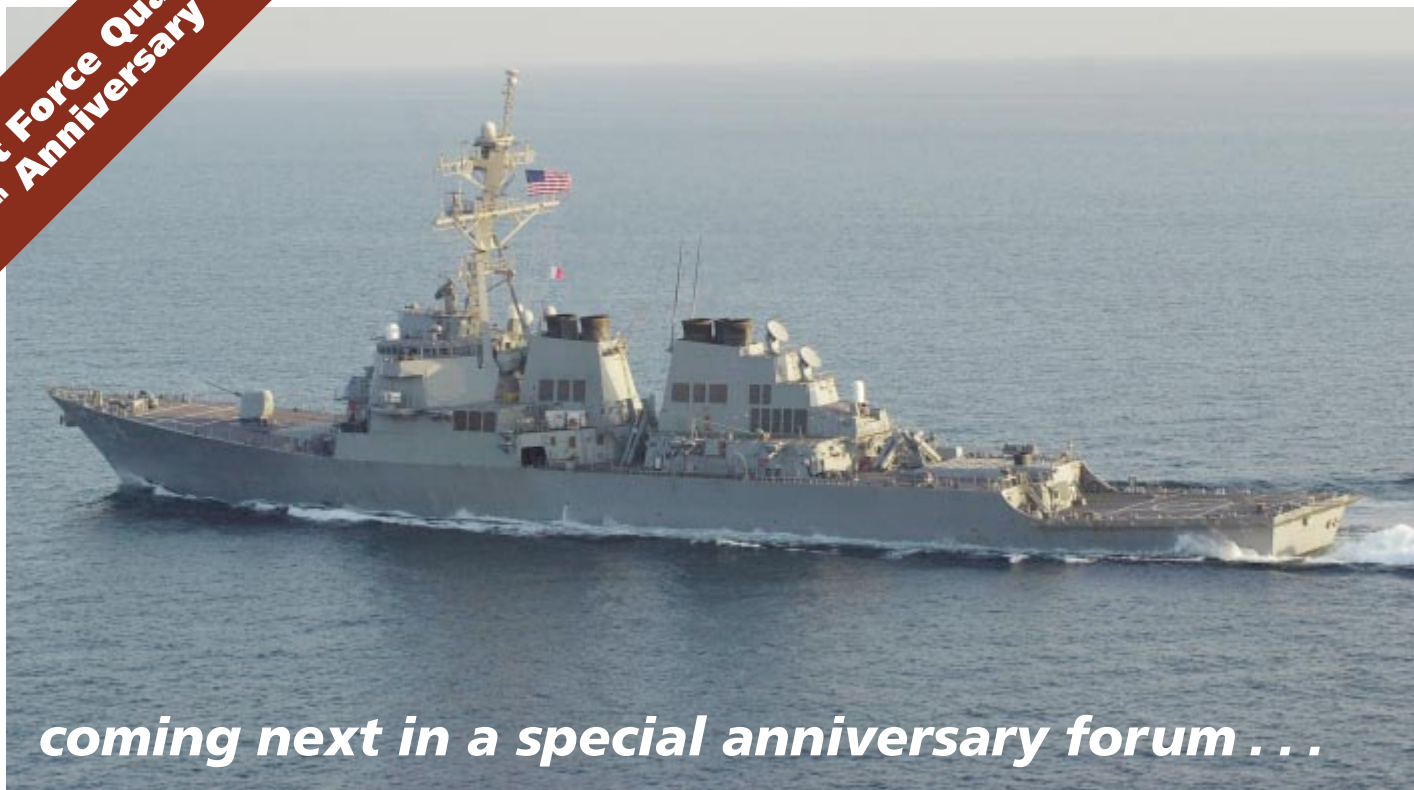
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