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NDU Press is the National Defense University's cross-component, professional military and academic publishing house. It publishes books, policy briefs, occasional papers, monographs, and special reports on national security strategy, defense policy, national military strategy, regional security affairs, and global strategic problems.

ABOUT THE COVER

Front cover shows World War II U.S. and British military leaders discussing strategy on war in Europe and Pacific at Conference of Combined Chiefs of Staff headquartered at Mena House Hotel, Cairo, Egypt, December 4, 1943. Left from front: Commander Richard Duke Coleridge, RN; Lt-Gen. Sir Hastings Ismay, BA; Admiral of the Fleet Sir Andrew B. Cunningham, RN; Chief of Imperial General Staff General Sir Alan G. Brooke, BA; Air Chief Marshal Sir Charles Portal, RAF; Field Marshal Sir John Dill, BA; Chief Combined Secretary Brigadier Harold Redman, BA; and unidentified British officer. Right from front: Colonel Andrew J. McFarland, USA; Chief of Naval Operations Admiral Ernest J. King, USN; Admiral William D. Leahy, USN; Captain Forrest B. Royal, USN; and Commanding General of the U.S. Army Air Forces General Henry H. ("Hap") Arnold, USAAF.

From the Chairman

Strategic Communication: Getting Back to Basics

It is time for us to take a harder look at "strategic communication."

Frankly, I don't care for the term. We get too hung up on that word, *strategic*. If we've learned nothing else these past 8 years, it should be that the lines between strategic, operational, and tactical are blurred beyond distinction. This is particularly true in the world of communication, where videos and images plastered on the Web—or even the idea of their being so posted—can and often do drive national security decisionmaking.

But beyond the term itself, I believe we have walked away from the original intent. By *organizing* to it—creating whole structures *around* it—we have allowed strategic communication to become a thing instead of a process, an abstract thought instead of a way of thinking. It is now sadly something of a cottage industry.

We need to get back to basics, and we can start by not beating ourselves up.

The problem isn't that we are bad at communicating or being outdone by men in caves. Most of them aren't even in caves. The Taliban and al Qaeda live largely among

ADM Mullen addresses media

U.S. Navy (Chad J. McNeeley)

the people. They intimidate and control and communicate from within, not from the sidelines.

And they aren't just out there shooting videos, either. They deliver. Want to know what happens if somebody violates their view of Sharia law? You don't have to look very far or very long. Each beheading, each bombing, and each beating sends a powerful message or, rather, *is* a powerful message.

Got a governance problem? The Taliban is getting pretty effective at it. They've set up functional courts in some locations, assess and collect taxes, and even allow people to file formal complaints against local Talib leaders. Part of the Taliban plan to win over the people in Swat was to help the poor or displaced own land. Their utter brutality has not waned, nor has their disregard for human life. But with each such transaction, they chip away at the legitimacy of the Afghan government, saying in effect: "We can give you the stability the government cannot."

No, our biggest problem isn't caves; it's credibility. Our messages lack credibility because we haven't invested enough in building trust and relationships, and we haven't always delivered on promises.

The most common questions that I get in Pakistan and Afghanistan are: "Will you really stay with us this time?" "Can we really count on you?" I tell them that we will and that they can, but when it comes to real trust in places such as these, I don't believe we are even in Year Zero yet. There's a very long way to go.

The irony here is that we know better. For all the instant polling, market analysis, and focus groups we employ today, we could learn a lot by looking to our own past. No other people on Earth have proven more capable at establishing trust and credibility in more places than we have. And we've done it primarily through the power of our example.

The voyage of the Great White Fleet told the world that the United States was no longer a second-rate nation. The Marshall Plan made it clear that our strength was only as good as it was shared. The policy of containment let it be known we wouldn't stand for the spread of communism. And relief efforts in the wake of natural disasters all over the world said calmly and clearly: we will help you through this.

We didn't need a public opinion poll to launch that fleet. We didn't need a "strat comm" plan to help rebuild Europe. And we

Chairman outlines military operations in Afghanistan during interview with CNN

sure didn't need talking points and Power-Point slides to deliver aid. Americans simply showed up and did the right thing because it was, well, the right thing to do.

That's the essence of good communication: having the right intent up front and letting our actions speak for themselves. We shouldn't care if people don't like us; that isn't the goal. The goal is credibility. And we earn that over time.

Now I'm not suggesting we stop planning to communicate or that we fail to factor in audience reaction, perceptions, or culture. I recognize the information environment today is much more complex than it was in 1909, or even 1999. As someone who "tweets" almost daily, I appreciate the need to embrace the latest technologies.

But more important than any particular tool, we must know the context within which our actions will be received and understood. We hurt ourselves and the message we try to send when it appears we are doing something merely for the credit.

ADM Mullen hands out notebooks at opening of Pushghar Village Girls School in Panjshir Valley, Afghanistan, July 2009

We hurt ourselves more when our words don't align with our actions. Our enemies regularly monitor the news to discern coalition and American intent as weighed against the efforts of our forces. When they find a "say-do" gap—such as Abu Ghraib—they drive a truck right through it. So should we, quite frankly. We must be vigilant about holding ourselves accountable to higher standards of conduct and closing any gaps, real or perceived, between what we say about ourselves and what we do to back it up.

In fact, I would argue that most strategic communication problems are not communication problems at all. They are policy and execution problems. Each time we fail to live up to our values or don't follow up on a promise, we look more and more like the arrogant Americans the enemy claims we are.

And make no mistake—there has been a certain arrogance to our "strat comm" efforts. We've come to believe that messages are something we can launch downrange like a rocket, something we can fire for effect. They are not. Good communication runs both ways. It's not about telling *our* story. We must also be better listeners.

The Muslim community is a subtle world we don't fully—and don't always attempt to—understand. Only through a shared appreciation of the people's culture, needs, and hopes for the future can we hope ourselves to supplant the extremist narrative. We cannot capture hearts and minds. We must engage them; we must listen to them, one heart and one mind at a time—over time.

I'm a big fan of *Three Cups of Tea* by Greg Mortenson. In fact, I had the opportunity this summer to help him open up a new school for girls in the Panjshir Valley. Greg believes that building relationships is just as important as building projects. "The enemy is ignorance," he told me, "and it isn't theirs alone. We have far more to learn from the people who live here than we could ever hope to teach them."

He's right. We are only going to be as good as our own learning curve. And just the simple act of trying, of listening to others, speaks volumes all by itself.

I know *strategic communication* as a term of reference is probably here to stay. Regrettably, it's grown too much a part of our lexicon. But I do hope we take this opportunity under the coming Quadrennial Defense Review to reexamine what we mean by it. Strategic communication should be an enabling function that guides and informs our decisions and not an organization unto itself. Rather than trying to capture all communication activity underneath it, we should use it to describe the process by which we integrate and coordinate.

To put it simply, we need to worry a lot less about *how* to communicate our actions and much more about *what* our actions communicate.

I also hope we learn to be more humble, to listen more. Because what we are after in the end—or should be after—are actions that speak for themselves, that speak for us. What we need more than anything is credibility. And we can't get that in a talking point. **JFQ**

MICHAEL G. MULLEN
Admiral, U.S. Navy
Chairman of the Joint Chiefs of Staff

Marine officer addresses key officials and residents during shura on reestablishing district government, Helmand Province, Afghanistan

U.S. Marine Corps (James Purschwitz)

Introducing *PRISM*

National Defense University (NDU) is pleased to introduce *PRISM*, a complex operations journal. *PRISM* will explore, promote, and debate emerging thought and best practices as civilian capacity increases in operations in order to address challenges in stability, reconstruction, security, counterinsurgency, and irregular warfare. *PRISM* complements *Joint Force Quarterly*, introduced by General Colin Powell, Chairman of the Joint Chiefs of Staff, 16 years ago to similarly advance joint force integration and understanding.

PRISM welcomes articles on a broad range of complex operations issues, especially those that focus on the nexus of civil-military integration. The journal will be published four times a year both online and in hardcopy. It will debut in December 2009. *PRISM* is supported by an interactive Web site that allows readers to search past issues, submit manuscripts, provide subject matter feedback, and post letters to the editor.

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PRISM is chartered by the Center for Complex Operations (CCO), which was established to (1) provide for effective coordination in the preparation of Department of Defense personnel and other U.S. Government personnel for complex operations; (2) foster unity of effort during complex operations among the departments and agencies of the U.S. Government, foreign governments and militaries, international organizations and international nongovernmental organizations, and domestic nongovernmental organizations; (3) conduct research, collect, analyze, and distribute lessons learned, and compile best practices in matters relating to complex operations; and (4) identify gaps in the education and training of Department of Defense personnel and other U.S. Government personnel relating to complex operations, and facilitate efforts to fill such gaps. CCO is established within the Center for Technology and National Security Policy at NDU.

Manuscripts submitted to *PRISM* should be between 2,500 and 6,000 words in length and sent via email to prism@ndu.edu.

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LETTERS

To the Editor—I have studied and applied systems theory for the last 40 years, encompassing three careers including that of a military officer. My advanced degree includes a specialty in the field of systems thinking. So I find it appalling that *Joint Force Quarterly* would publish such a completely misinformed piece as that by Professor Milan Vego ("Systems versus Classical Approach to Warfare," *JFQ* 52, 1st Quarter 2009). How one can critique the field of systems theory and its related subdisciplines without referencing a *single work* that defines the field is sufficiently disquieting; how an esteemed quarterly such as yours can publish it is beyond belief. Either the editors are ignorant of the basics of the field, or they are coopted by the author.

Professor Vego starts with an encouraging premise: that the bastardization of the systems disciplines by the U.S. military is incongruent to the realities of war and warfare. Effects-based operations, the latest variant of the so-called Warden school, is far more representative of the American penchant for creative English (through invention of attractive slogans and acronyms) than serious systems theory (read Paul Van Riper's commentary in this same issue). In fact, the distorted, even perverted American concepts of systems theory and thought as applied to war and warfare seem far more akin to the old continental ideas of "orderly battle" than the dynamic environments that they now are.

And this is where Vego, the historian, goes completely awry. In chastising American doctrine, he generalizes his critique to *all* systems theory. One of his comments, highlighted by the editors in the article, suffices to demonstrate his ignorance of systems science. He adduces that systems theory would include the "neo-Newtonian view of the world . . . that everything runs smoothly, precisely, and predictably." That is completely the opposite of what systems theorists have discovered and published, believe, and practice. In fact, if Vego had bothered to do the *slightest* research in this field, as it applies to the military, he would have found what systems thinkers believe in Barry Watts' classic monograph, *Clausewitzian Friction and the Future of War*, or Tom Czerwinski's collection of essays, *Coping With Bounds: Speculations on Non-Linearity in Military Affairs*, or Alan Beyerchen's classic article,

"Clausewitz, Nonlinearity, and the Unpredictability of War" (*International Security,* Winter, 1992–1993). These treatises are well known among systems thinkers and theorists interested in military affairs; they are also known to many professionals in the military.

Alternatively, if Professor Vego had wanted to critique systems theory from some of its source documents, he could have accessed the many works of scientists and philosophers such as Russell Ackoff, C. West Churchman, or Carl von Clausewitz. We systems theorists believe that Clausewitz, so ahead of his time, was one of the first systems philosophers on the subject of war. Vego has created a false god in his view of the systems approach ("*the*" approach does not exist), and then broken his phantom icon to his own applause.

In fact, his last section, dealing with operational thinking and vision, is completely consistent with the way systems thinkers view war and warfare. I know because I now teach operational art, using Vego's own book on the subject, and applying my systems knowledge accordingly.

You, dear editor, have been had. Unfortunately, so have your readers.

—**Jonathan E. Czarnecki, Ph.D.**
  COL (Ret.), USA
  Professor of Joint Military Operations
  Naval War College Monterey

To the Editor—I was unpleasantly surprised with both the tone and content of Professor Jonathan Czarnecki's letter. Professional discussion should be free of ad hominem attacks.

My article, as its title implies, was focused on comparing systems and classical approaches to warfare. I have never intended to provide a critique of systems theory in general. My use of the terms *systems* and *systems approach* clearly refers to the way systems theory is being interpreted and applied by leading effects-based operations (EBO)/systemic operational design proponents. This is also shown by repeated use of the terms EBO *enthusiasts* or *proponents*. My article was based on numerous sources, including writings of some leading systems theorists.

It is simply false to claim, as Professor Czarnecki does (and many systems theorists as well), that Carl von Clausewitz was one of the first systems philosophers of war. He was not. Clausewitz's writings cannot be reinterpreted in terms of systems theory, which originated first in biology in the 1920s—that is, some *90 years* after Clausewitz died. In fact, he was vehemently against using rules, principles, or systems in the study of war. In his seminal work *On War,* he wrote:

Efforts were . . . made to equip the conduct of war with principles, rules, or even systems. This did present a positive goal, but people failed to take an adequate account of the endless complexities involved. As we have seen, the conduct of war branches out in almost all directions and has no definite limits; while any system, any model has the finite nature of a synthesis. An irreconcilable conflict exists between this type of theory and actual practice. . . . [These attempts] aim at fixed values but in war everything is uncertain and calculations have to be made with variable quantities (Howard and Paret, 1993, 154–155).

A prominent systems theorist concluded Clausewitz believed that it was desirable to develop a system of principles for the conduct of war but that goal was unattainable. However, one cannot possibly read the above statement and conclude that Clausewitz was somehow a systems thinker. He wrote on friction and linearity/ nonlinearity of war, but not in terms some systems theorists use to explain his writings today. In fact, Heinrich Dietrich von Buelow (1757–1807) and other followers of the so-called mathematical or geometrical school so predominant prior to the French Revolutionary and the Napoleonic Wars had much more in common with some aspects of systems thinking. Not by accident, Buelow's main work was entitled *Spirit of the New System of War* (*Geist des Neueren Kriegssystems*). Like many systems proponents, and EBO advocates in particular, Buelow overemphasized the importance of quantifiable factors in warfare and neglected such factors as political intentions, morale of the army, psychology of the commander, and irrationality.

One does not need 40 years to conclude that systems theory cannot be applied to such

enormously complex human activities as warfare. That does not mean that some parts of such theories cannot be applied to the military domain. Advocates of the systems approach need to prove practical utility of their theories in the conduct of war, and in operational warfare in particular; otherwise, they will deservedly meet the fate suffered by all pseudo-scientific theories of past eras.

—Milan Vego, Ph.D.
Professor of Operations
Naval War College
Newport, RI

To the Editor—There is a proposition that makes its appearance in military discussions on a periodic basis—the quick, decisive victory. Usually the forcing function for this proposition is the historical record of warfare. Here is how it looks: a genius comes along, wins a particularly elegant battle, campaign, or war, and not long after, erudite theorists gather to capture the essentials of his "method." Or to sell books. There is nothing inherently wrong in this approach toward war; however, capturing the universal essentials that lead inevitably to victory is probably a vain pursuit since each situation has its own essentials. Carl von Clausewitz himself scorned "strategic clichés" and "jargon, which . . . bears only a faint resemblance to well defined, specific concepts." Learning from history was something Clausewitz advocated, but not in order to find a silver bullet that guarantees success.

The story of military theory is littered with just these sorts of attempts. But the short, decisive war with a tidy ending is rare, if not nonexistent, in recorded history. The most recent manifestation of this pursuit is best described as "domino warfare." This approach to war is characterized by the achievement of military success through finding the magic action that will cause a cascading series of subsequent events (or effects) that lead to military success. In theory, a carefully focused attack, or series of attacks, causes the enemy to lose both his control and composure on a broad systemic scope. As the dominos fall, they quickly result in a broad psychological paralysis which translates—somehow—into a political or national capitulation. Such a fortuitous result reduces or even eliminates the need for attritional warfare. The very rapidity of victory causes the mass of the people to face the facts and accept the inevitable. When domino warfare is tied to an attractive worldview (or ideology), the postwar situation will take care of itself as the repressed universal values of "the people" emerge and align themselves with those of the victors. Of course, these sorts of assumptions are so much empty nonsense, as recent military history in Iraq, the Balkans, and Afghanistan suggests. The efficacy of domino warfare, however, seems to retain its allure.

Domino warfare has fundamental conceptual errors that are now being comprehensively examined, and it may be the wrong tool to solve most problems. Its most recent manifestation seems to consist of three related concepts: effects-based operations (EBO), network-centric warfare (NCW), and finally systemic operational design (SOD). First, there is the issue of so-called EBO. This particular concept got its start at the operational level of war. EBO is the ideal bumper-sticker for domino warfare adherents. In its original form, EBO targets a relatively simple system, such as an electrical grid, a water management system, or even a telecommunications network. The effects produced can be predicted and factored into the design of the campaign. However, the problem with EBO is that it became an oxymoron. It became effects-based operations *warfare*—thus graduating from an operational approach to a whole way of war unto itself, with its own taxonomy and logic.

The next concept contributing to a domino warfare mindset is NCW. Like EBO, NCW began as a simple construct: use the latest information and space technologies to rapidly gather target data for employment in the less complex maritime environment (as regards human terrain). The concept was at its most coherent for an air defense related problem that rapidly synchronized the sensors and weapons in Navy battle groups. As air defense systems rapidly expanded in tandem with information technologies, NCW came to encompass just about any networked system. Again we see the misuse of language as jargon contributing to the inflation of modest operational concepts into "an emerging theory of warfare."

Finally, there is the issue of SOD. This approach has its genesis in the airpower theories of the 20th century and the elegance of delivering rapid strategic decision from the skies. War would come and those with airpower, against which no defense was possible, would win it. At the U.S. Army Air Corps Tactical School at Maxwell Field, the heirs to Billy Mitchell and Mason Patrick refined an approach that focused on the arrangement and interrelationship of the metaphorical dominos, the industrial system of a potential adversary. After 6 years of bloody combat in World War II and the fielding of an atomic bomb, victory did come—but not quickly. More recently, SOD, when applied to complex human "systems," has proved particularly ineffective in Iraq, Lebanon, and Afghanistan.

Domino warfare encompasses the age-old desire to find the quick military-political victory through some technological or intellectual shortcut or combination of the two. The problem is that complex human systems do not lend themselves well to this approach. Things happen unexpectedly and often slowly in the human domain. For these reasons, domino warfare outcomes are best left to the realm of serendipity as one instead plans for a long chess tournament.

—Dr. John T. Kuehn
Associate Professor of Military History
U.S. Army Command and General Staff College

To the Editor—Although I do not agree with everything Ralph Peters wrote in "Trapping Ourselves in Afghanistan and Losing Focus on the Essential Mission" (*JFQ* 54, 3d Quarter 2009), I commend him for reducing a complex issue to an understandable solution by answering the questions: (1) Where are we? (2) How did we get there? (3) Where are we going? Essentially, LTC Peters wrote, first we are in Afghanistan. Second, we went there to neutralize al Qaeda after the attacks on 9/11. Third, with al Qaeda neutralized in Afghanistan, where are we going by expending our resources in fighting the Taliban and nation-building when we have bigger fish to fry?

—LtCol Fred L. Edwards, Jr., USMC (Ret.)

Executive Summary

For every complex problem there is a simple solution that is wrong.

—George Bernard Shaw

In this issue, *Joint Force Quarterly* returns to issues of grand strategy, from the training of strategists and associated concepts to a survey of regional context in its formulation and execution. Strategists cannot hope to arrive at a secure destination of mastery in the face of complexity and nonlinear change. Strategy demands an endless pursuit of contextual knowledge that is organized around and built upon a foundation of scholarship and social insight. This edition of *JFQ* is presented, in part, to reduce the risk of adopting simple solutions in its formulation.

The Forum begins with an informed essay by Dr. Thomas Mahnken, who addresses defense planning and complex operations through the prism of a "grand new bargain." The author observes that comprehensive approaches are supplanting joint operations in the evolving global security environment, consequently changing the identity of the Armed Forces. There is no denying the fact that the Department of Defense has become the principal agency to address complex contingencies and that organizational flexibility across multiple core competencies has made it possible for "other parts of the national security community to dodge their responsibilities." Efforts to build greater civilian capacity in the past have been foiled by the Federal bureaucracy and an absence of congressional support. The key to overcoming these obstacles is Presidential mandate in the form of a new National Security Planning Guidance.

The second article is from two former National War College professors who have been collaborating on a history of that institution. Their research led Dr. Janet Breslin-Smith and Colonel Cliff Krieger to conclude that, while the War College remains remarkably faithful to the vision of "Hap" Arnold,

George Marshall, Dwight Eisenhower, Chester Nimitz, and James Forrestal, action is required by the Chairman of the Joint Chiefs of Staff to fulfill the pressing requirement for a premier "school of strategy." The authors' observations and recommendations span the college's mission, leadership, faculty, student body, and academic program, leading to a proposed framework for strategic analysis. Widening their scope to nonmilitary instruments of statecraft, they note that the War College and Industrial College of the Armed Forces were envisioned as part of a constellation of colleges that included a State Department College, Administration College, and Intelligence College. In the absence of this augmentation, the authors propose a College of Diplomacy and Development to foster greater institutional strength at the Department of State and U.S. Agency for International Development.

The third Forum installment also speaks to the development of strategists, but in this case the authors are Naval War College professors Derek Reveron and James Cook. They argue that the challenge before military strategists is to coordinate the levers of national power in a coherent, smart way that shapes the security environment and defuses situations before they become crises through a strategy of prevention at the theater level. Their essay leads the reader through the basics of strategic thought employing a U.S. prism, from levels of strategy to related principles of war and from authoritative strategic planning guidance to joint doctrine. In practice, strategic decisions must always compete with the demands of domestic politics, the most important of which concerns the "size and distribution of funds made available to the armed forces." When done correctly, "theater strategy enables the combatant commander to effectively secure U.S. national interests

by obtaining and synchronizing available resources from within the interagency to achieve theater objectives within a multinational environment."

In our fourth Forum article, CNA China Analyst Dean Cheng traces American interests in East Asia from the earliest days of U.S. history to its present role as the guarantor of regional stability. Perhaps counterintuitively, East Asia is far more complex than Europe, embodying not only ideological conflicts rooted in the Cold War, but also historical animosities, unsettled borders, internal instabilities, and the absence of regional institutions that might ameliorate some of the ensuing tensions. In light of this, it is not surprising that the end of the Cold War did not abate regional tensions. Rather, it merely removed the ideological component from some of the complicated relations within the region that draw upon age-old prejudices and hatreds. The author concludes with several important points for U.S. strategists. First, there is no "Asian perspective" on issues, as all nations examine each parochially. Second, knowledge of history matters, and any U.S. action must be examined in history's light to avoid unintended consequences due to long memories. Finally, internal instability for several East Asian countries has been muted by expanding national economies. With an outlook of extended economic malaise, growing discontent and interstate tensions are likely to manifest themselves unexpectedly and violently.

The fifth article takes *JFQ* readers to the Middle East with a comparative survey of Iranian military capabilities courtesy of Dr. Richard Russell of the Near East South Asia Center for Strategic Studies. Because of the sophisticated conventional military capabilities of the United States and its Arab allies in the region, the author posits that Iran is "likely to turn to its time-tested unconventional ways of war to exploit Arab Gulf state and American vulnerabilities in future conflicts." However, the author also makes the case that Gulf Arab conventional forces are more bark than bite and cites a "massive overemphasis on the procurement of high technology and serious underemphasis on

Dust from downwash creates sparks during night landing of CH–46 in Helmand Province, Afghanistan

MichaelYon-online.com (Michael Yon)

manpower issues, personnel selection, training, and maintenance." It is "not much of an exaggeration to say that the first, second, and third missions of their forces are to protect the regime from internal threats, while the lagging fourth mission is to protect from external threats." On the other side of the scale, Iran's military is impressive in quantity but underwhelming in quality. The bulk of Iran's inventories are American-built weapons bought before the 1979 revolution and a mix of Soviet and Chinese weapons that are qualitatively inferior to the modern American and Western weapons systems in the Gulf Arab inventories. At the end of the day, these states will have to decide whether to balance or to appease Iranian power in the Gulf. Professor Russell concludes that Washington needs to encourage the Arab Gulf states to balance, but in doing so, it should focus less on building up their conventional military capabilities and pay more attention to the Iranian threats stemming from unconventional warfare.

From the Persian Gulf to the largest country in the world, the Forum's sixth

article is a wide-ranging mosaic of Russian strategic considerations by Peter Humphrey of the Institute for National Strategic Studies. Expanding on the premise that Russia has downsized its ambitions from global dominance to Eurasian suzerainty, the author attempts to attribute numerous bilateral behaviors to a coherent strategy for success in the face of serious impediments to its most conservative aspirations. Beginning with the nations on Russia's periphery, Mr. Humphrey sketches exhibitions of insecurity and arrogance, gambits, and genuine sovereign interest. The "bizarre and unsupportable claims" that Russia has made to the Arctic make clear a desperate attempt to survive as a broker of raw materials in the absence of an ability to compete in the technology market. The author subsequently explores the demographic trends that he characterizes as disastrous and that help to account for contemporary aggressive behavior. He concludes with a series of issues for the West, extrapolated from the foregoing argument.

The Forum concludes with an insightful article from a frequent *JFQ* contributor, Dr. Stephen Cimbala of Pennsylvania State University–Brandywine. In this essay, he considers various options for U.S.-Russia strategic nuclear arms reductions within the larger politico-military context of post–Cold War geopolitics and offers a provisional assessment of prospects for success. He presents hypothetical treaty-compliant and smaller forces for both the United States and Russia, conditions for their employment, and an analysis of outcomes. Beyond raw data, he subsequently addresses the psychological impact of deterrence, coercion, and reassurance. Dr. Cimbala concludes with the description of two dangers for Presidents Dmitry Medvedev and Barack Obama if they move beyond nuclear stasis. First, the arms control process must not become the province of arms control experts and "bean counters" who threaten progress and, second, it would be unwise to rush to agreement for agreement's sake. **JFQ**

—D.H. Gurney

A New Grand Bargain

Implementing the Comprehensive Approach in Defense Planning

By THOMAS G. MAHNKEN

The United States faces a security environment in which comprehensive approaches are supplanting joint operations. The military's heavy involvement in complex operations poses a conundrum for U.S. force planners and ultimately challenges the identity of the Armed Forces. Closing the gap between our commitments and national security capacity requires a new formulation of risk and a new grand bargain on national security roles and missions.

The Spectrum of Challenges

The United States today faces the most complex and challenging security environment in recent memory. Dealing with these challenges requires a versatile military force. Military power has played an important role in the struggle to defeat violent extremist organizations such as al Qaeda and its affiliates. The United States has used, and will continue to need, military power to disrupt the ability of terrorist groups to strike globally, bolstering the ability of local regimes to deal with insurgents on their own territory. To achieve success, the U.S. military will need to develop and sustain a proficiency in irregular operations equal to that which it possesses in high-end conventional warfare. Although the United States has made considerable progress in this area in recent years, more

Dr. Thomas G. Mahnken is a Visiting Scholar in the Philip Merrill Center for Strategic Studies at the Paul H. Nitze School of Advanced International Studies, The Johns Hopkins University.

Marine sniper engages enemy during firefight in Helmand Province, Afghanistan

U.S. Marine Corps (William Greeson)

must be done, for example, to institutionalize the mission of training and advising foreign military forces as a core mission of the Army and Marine Corps.

Military power will also play a crucial role in dealing with regional rogues, particularly those who possess or are seeking nuclear weapons. The threat of military force has played a central role in deterring these states and their surrogates from aggression. However, thinking about deterrence—a central mission of the U.S. military throughout the Cold War—went out of fashion with the collapse of the Soviet Union and has only recently begun to stage a comeback. We need to revive our understanding of deterrence and develop new approaches for competing with North Korea and Iran over the long term. The United States also needs to improve its ability to defend against the missile arsenals that regional rogues use to coerce their neighbors. Finally, the U.S. military needs the ability to preempt or retaliate against aggressive behavior, ranging from rogue states' use of terrorist surrogates, through the use of conventional force, to the use of nuclear weapons.

Finally, military power has a role to play in dealing with the rise of China. Specifically, the United States must, through its words and actions, maintain a preponderance of power in the Pacific in order to reassure allies and friends in the region and ensure access to the global commons. The Armed Forces also need to develop asymmetric responses to those Chinese capabilities that put U.S. forces at risk.

Beyond these long-term challenges, the United States must be prepared to confront any number of disruptive events that could destabilize the international system, ranging from the outbreak of a virulent pandemic, to the collapse of a strategic state, to the use of nuclear weapons. Recent experience, in the form of the September 11, 2001, terrorist attacks, shows that such shocks can shape what the President and the American people expect of the military.

Complex Operations

The U.S. military must not only prepare for a broad spectrum of contingencies but also plan to conduct a wide range of missions in those contingencies. Although policymakers frequently espouse a comprehensive approach to meeting current and future contingencies, the military in fact has become the instrument of choice for handling complex contingencies in recent years. In Iraq and Afghanistan, it is

not only combating insurgents and providing security to the local populace, but also building infrastructure and supporting economic development. Across the globe, combatant commanders plan to respond to future contingencies and play a major role in security cooperation with a broad range of allies and partners. At home, the military is being asked to deal with the spillover of crime and drug trafficking from Mexico into the United States. For example, Governors of states in the Southwest have asked the Department of Defense (DOD) to dispatch 1,500 troops to the U.S.-Mexican border to analyze intelligence and provide air support and technical assistance to local law enforcement agencies.

beyond long-term challenges, the United States must be prepared to confront any number of disruptive events that could destabilize the international system

The Armed Forces have become the preferred means for dealing with national security challenges for several reasons. They are highly professional and increasingly expeditionary. They are also responsive: the Nation's leadership can order troops into action, and they will heed the call of duty. And when these troops reach their destination, they have demonstrated the ability to perform admirably, including in roles they did not anticipate when they joined the military. For example, Navy and Air Force officers have been asked to lead Provincial Reconstruction Teams in Iraq and Afghanistan. Similarly, members of the Reserve Component and National Guard have frequently been called upon to use their civilian skills rather than their military training in areas such as law enforcement and public administration. Above all, however, because of its size, the military has the capacity to undertake a range of tasks, a capacity that the remainder of the national security community lacks.

The wars in Iraq and Afghanistan have demonstrated the limits of U.S. national security capacity. If counterinsurgency is "20 percent military and 80 percent nonmilitary," the military all too often finds itself performing not only its 20 percent, but also a substantial part of the nonmilitary 80 percent. If there is a gap between our military commitments

and capacity, then there is a growing chasm between our national security commitments and capacity.

DOD is currently in the midst of the Quadrennial Defense Review (QDR), the congressionally mandated report that helps set the future course of the military. According to the fact sheet on the QDR's terms of reference, the study will "re-balance DoD's strategies, capabilities and forces to address today's conflicts and tomorrow's threats."[1] One of the central issues that defense planners must grapple with in this context is the role of the military in complex interagency operations.

The fact that the Armed Forces are heavily engaged in complex operations, and are likely to remain so for the foreseeable future, poses a conundrum for defense planners. Should the Services prepare for the best case or the worst? In other words, should DOD plan on being able to concentrate on its main role, which is the use of force to achieve the aims of policy, with other departments and agencies playing their roles? Or should it, based on recent experience, plan on conducting missions beyond its core competency, including reconstruction and stabilization, law enforcement, and development assistance? How we answer that question will have a major impact on the size and shape of our forces.

This is truly a conundrum because DOD leadership cannot know a priori what the correct choice is; the answer depends not only on what DOD chooses to invest in, but also on the capability and capacity of other parts of the national security community. Even more broadly, it depends on what activities Congress chooses to fund.

There are real costs associated with these choices. Taking the narrow approach of focusing on combat tasks runs the risk of leaving the Nation unprepared to carry out the full range of postconflict missions in a future war, as it was in Iraq and Afghanistan. Similarly, electing to focus on one portion of the conflict spectrum, whether countering insurgencies or the threat posed by capable states, risks leaving the United States unprepared for future contingencies where our adversaries fail to adhere to our preferred approach to war.

Taking the broad approach of embracing the new, expanded set of missions carries its own costs. It risks diluting the military's expertise in its core mission of warfare. It also risks allowing other parts of the national

security community to dodge their responsibilities in complex contingencies. Although the military has in recent years become the favored instrument for carrying out a range of tasks, it is doubtful whether it is, or can become, an adequate substitute for experts in political reconciliation, development, law enforcement, or governance.

Secretary of Defense Robert Gates has spoken eloquently of the need for a dramatic increase in funding of the civilian instruments of national security, including diplomacy, foreign assistance, and economic reconstruction and development. As he put it in his Landon Lecture at Kansas State University in November 2007:

We must focus our energies beyond the guns and steel of the military, beyond just our brave Soldiers, Sailors, Marines, and Airmen. We must also focus our energies on the other elements of national power that will be so crucial in the coming years. . . . Civilian participation is both necessary to making military operations successful and to relieving stress on the men and women of our armed services who have endured so much these last few years, and done so with such unflagging bravery and devotion.[2]

Gates' well-publicized call for greater civilian capacity was not, however, the first. The 2006 QDR examined the need for greater national security capacity, noting that:

Although many U.S. Government organizations possess knowledge and skills needed to perform tasks critical to complex operations, they are often not chartered or resourced to maintain deployable capabilities. Thus, the Department has tended to become the default responder during many contingencies. This is a short-term necessity, but the Defense Department supports legislation to enable other agencies to strengthen their capabilities so that balanced interagency operations become more feasible—recognizing that other agencies' capabilities and performance often play a critical role in allowing the Department of Defense to achieve its mission.[3]

Drafters of the 2006 QDR based their analysis of future defense requirements on the assumption that other parts of the national security community, such as the Department of State and U.S. Agency for International Development, would become larger and more

adept at complex operations, thus relieving the military of much of this burden. The recent track record belies that optimistic assumption. The question that DOD must now face is the degree to which the military will play an active role beyond its core competency in complex operations.

Redefining the Military Domain?

The military's heavy involvement in complex operations raises the question of how the military domain of national security should be defined. Today, one frequently sees two pathologies at work within the officer corps. One is to define the military domain in excessively narrow terms. In this view, the role of the military was to fight

certain types of wars—generally the wars we *want* to fight. To take just one example, Air Force Major General Charles Dunlap has argued that the military cannot succeed at counterinsurgency and should not even try. Rather, in his view, "we need the bulk of the Army prepared to go toe-to-toe with the heaviest combat formations our adversaries can field."[4]

The opposite tendency is to define the military domain in excessively broad terms. Think of it as the embodiment of the military's "can do" attitude on steroids. This manifests itself in not only willingness, but

also indeed eagerness, to take on all manner of tasks, whether the force was well suited to them or not.

Now, more than ever, what is needed is a frank debate over the scope and contours of the military profession. Officers and the civilians they serve need to answer some difficult questions, namely: what *must* the military be able to do, and what *should* the military be able to do? In what skills must Soldiers, Sailors, Marines, and Airmen be proficient? And what skills should they be aware of?

The Armed Forces must above all be able to fulfill their core mission of fighting and winning our nation's wars. It would be a mistake to understate the difficulty of this task, or the cost of failing to perform it

although the military has become the favored instrument for carrying out a range of tasks, it is doubtful whether it is, or can become, an adequate substitute for experts

successfully. It is the core reason the United States has a military, and no other organization can carry out this mission. The core tasking of the U.S. military is to fight and win *all* of the Nation's wars. These range from counterinsurgency campaigns to the need to combat states with advanced capabilities. Moreover, the Armed Forces must be able to fight and to win. They must thus be proficient in tactics and operational art—and strategy.

The military also exists to prevent or deter wars. This includes maintaining forces in readiness to deter attacks of all sorts and training and advising foreign security forces,

Chairman speaks to Soldiers in Afghanistan

DOD (Chad J. McNeeley)

as well as a range of other security cooperation activities.

Finally, the military exists to keep the peace. That includes a range of military operations short of war, including ensuring the freedom of navigation, enforcing sanctions, and combating piracy.

If these are the missions the military *must* be able to carry out, what *should* it be able to do? In order to carry out these missions, the men and women of the Armed Forces should be aware of all the other instruments of national power and how they

U.S. Army (Bobby L. Allen, Jr.)

Soldiers await instructions after patrolling village in Diyala, Iraq

relate to the military mission. They should have an understanding of foreign culture and language and be able to work closely with allies and friends. They should also be able to contribute to nonmilitary tasks, such as humanitarian assistance and disaster relief.

A New Risk Calculus

The prevalence of complex contingencies and the military's heavy involvement in them call for a new approach to judging risk and ultimately a new grand bargain to align our capabilities and requirements.

In the past, the U.S. military displayed a strong preference to minimize risk. One manifestation was the Weinberger Doctrine, which set overwhelming force as the precondition for launching military operations. Another was a traditional emphasis on material superiority as the recipe for success.

Such an approach was of questionable utility in the past but is clearly inapplicable to the situation we face today and will face in the

future. Given limited resources, minimizing risk against one type of threat only creates additional risk in other areas. For example, specializing in irregular warfare would raise our risk to attack through other means. Rather, now and for the foreseeable future, we will need to balance risks.

Fortunately, the flexibility of the military as a joint force can help balance risks. Although each Service has a significant role to play in meeting each challenge we face, the struggle against violent extremist organizations will involve the Army and Marine Corps more heavily than the Navy and Air Force, whereas shaping the rise of China will involve naval and air forces more than ground forces. By continuing to invest in a balanced joint force, we will mitigate risks.

We also need to conceive of risk more broadly—not only in terms of the military, but also in terms of national security overall. Increasing the capacity of the national security community would relieve stress on the force and help reduce the possibility of conflict. As Secretary Gates has noted, "Having robust civilian capabilities available could make it less likely that military force will have to be used in the first place, as local problems might be dealt with before they become crises."[5]

Achieving this greater balance will, in turn, require a new grand bargain on national security—a reaffirmation and redefinition of national security roles and missions. Too often in the recent past, efforts to build greater civilian capacity were truncated or aborted

due to bureaucratic foot-dragging or lack of congressional buy-in. Even successful innovations, such as the Section 1206 authorities that allow DOD to fund some programs to train and equip foreign forces, enjoy only tepid congressional support. To overcome such obstacles, such an effort must be led personally by the President and must involve both his Cabinet and key leaders in Congress. Only through such direct action can the United States achieve the type of integrated approach required.

To implement a new grand bargain, the Obama administration should act on the recommendation of the 2006 QDR and draft *National Security Planning Guidance*. Such a document would set priorities and clarify national security roles and responsibilities to reduce capability gaps and eliminate redundancies. It would help departments and agencies better align their strategy, as well as budget and planning functions, with national objectives. Such an effort would help ensure that operations better reflect the President's National Security Strategy.[6]

To meet the challenges of today and tomorrow, we need a military characterized by flexibility, agility, and versatility. We buy that versatility through the technology we procure. More than that, we purchase flexibility through the people we recruit, train, and educate. By rebalancing national security roles, missions, and resources, the United States can ensure that it is actually able to implement the comprehensive approach. **JFQ**

NOTES

[1] Department of Defense, "2010 QDR Terms of Reference Fact Sheet," April 27, 2009, available at <www.defenselink.mil/news/d20090429qdr.pdf>.

[2] Remarks by Secretary of Defense Robert M. Gates, Manhattan, Kansas, November 26, 2007, available at <www.defenselink.mil/speeches/speech.aspx?speechid=1199>.

[3] Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, 2006), 86.

[4] Quoted in Julian E. Barnes and Peter Spiegel, "A Pentagon Battle over 'The Next War,'" *The Los Angeles Times*, July 21, 2008. See also Charles J. Dunlap, Jr., "America's Asymmetric Advantage," *Armed Forces Journal*, September 2006.

[5] Gates.

[6] *Quadrennial Defense Review Report*, 85.

Strategic Drift?

The Future of the **National War College**

By **JANET BRESLIN-SMITH** *and* **CLIFF KRIEGER**

The National War College at Fort Lesley J. McNair, Washington, DC

Above: General of the Army Dwight Eisenhower developed the War College as an institution for inter-Service and interagency education

Right: The Chairman is charged with reclaiming ownership of and strengthening the National War College

DOD (Chad J. McNeeley)
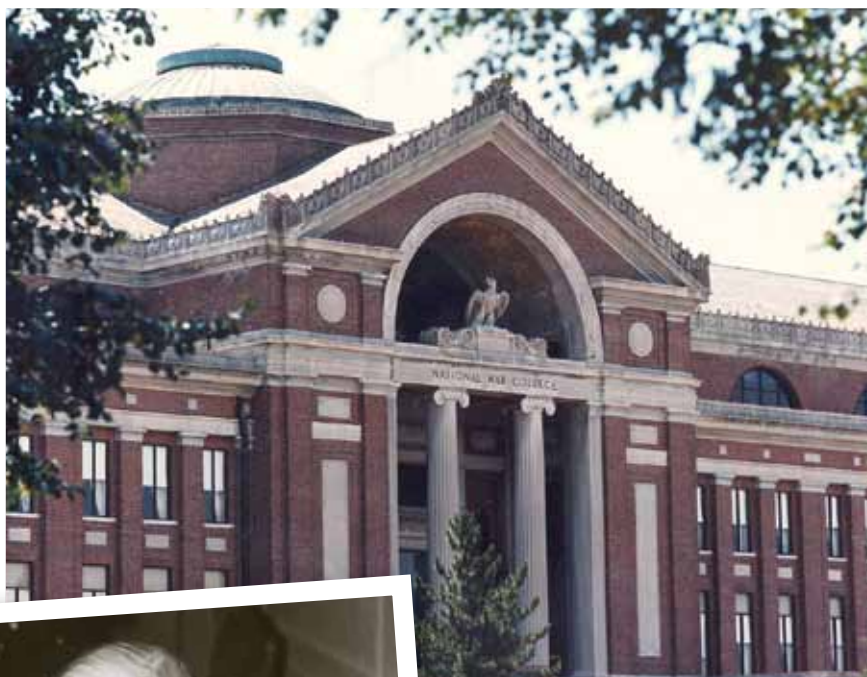
Each year, as students get their assignments to the National War College (NWC), the faculty wonder: Is there a "Kennan" among the group? Would this class produce a strategist in the mold of the college's first deputy commandant and author of the Cold War containment strategy, George Kennan? It *is* a legitimate question.

After all, from its beginning, the purpose of the school was clear: "The College is concerned with grand strategy and the utilization of the national resources to implement that strategy. . . . Its graduates will exercise a great influence on the formation of national and foreign policy in both peace and war."[1] While the call for grand strategists comes but once a generation, the college has a perpetual duty: turning out senior military, diplomatic, and national security officers who can perform problem analysis at the national strategic level and thus support their seniors in taking the decisions needed to achieve our national objectives.

And that certainly was the intention in 1946. The National War College was created to prepare senior military officers and other national security officials for higher professional responsibilities. The brainchild of Army Generals Henry "Hap" Arnold, George Marshall, and Dwight Eisenhower, as well as Admiral Chester Nimitz and Secretary of the Navy James Forrestal, the college had support from the highest levels of government and was essentially an American experiment in professional military education. It would be the Nation's first senior inter-Service and inter-

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agency school to offer a program in strategic military/political studies on war and politics.

For over 60 years, the college has been at this task and has remained remarkably faithful to the founders' vision for the school. The alumni of the college read like a "who's who" of national security—Chairmen, Service chiefs, combatant commanders, Ambassadors, sub-Cabinet officials. And even though the college has more than doubled in size from its original 100 students, and its core course program has undergone constant review and revision, the genius of Eisenhower and Arnold's concept lives on. On any given day, in any seminar room, we might hear combat veterans and seasoned diplomats grappling with contentious policy issues; academic specialists and intelligence officers stimulating student discussion over tribal issues in the Middle East or new threats from space; or Army officers comparing wartime experiences with Provincial Reconstruction Team members from the Department of State or the U.S. Agency for International Development (USAID), who practiced their political or economic skills in the midst of war. It is still a special place.

Indeed, Secretary of Defense Robert Gates could not have designed a better program to develop his idea of the 21st-century national security professional.

All institutions change over time—shifts in the political environment and new bureaucratic forces push, poke, and prod, and attempt to modify the mission, redefine the program, and adapt to changing political currents. The National War College, once a well-known, independent, professional program for national security senior officials, is now but one part of a larger unit, the National Defense University (NDU), in effect a subset of a multifaceted organization that includes research centers, other schools and colleges, and various outreach activities.

Moreover, the NWC program is no longer distinct. Over time, the other senior Service colleges expanded and shifted their curricula to approximate the joint/interagency orientation of the War College and accommodate the integrating requirements of the Joint Staff J7. The college must once again ask, "Is the college still unique and of value? Has it adapted to meet the needs of a new strategic era? What do the Nation's senior national security officials—in and out of uniform—need to know and be able to do in the 21st century, as strategic leaders?"

These questions take on new urgency with the current Defense Science Board Task Force on Joint Professional Military Education (JPME). It will study both Service-specific and joint professional military education curricula as well as overall steps to make JPME "more effective in preparing U.S. military personnel to meet the uncertainties and challenges of future missions." Buried in this study directive may be an implied conceit. In fact, the Defense Science Board charge may describe a critical fault line. Strategic leaders must give as much premium to "the thinking about" as to the "meeting" of uncertainties and challenges.

U.S. Army

DOD

Above: The War College's first deputy commandant and author of Cold War containment strategy, George Kennan

Left: General "Hap" Arnold helped establish the National War College in 1946

That insight drove the founders to create the college in the first place. Strategic thinking, in their view, had to be given primacy over operational art and tactical actions, or else leaders would not be able to orchestrate and prioritize the application of state powers. Deep analysis of the problem at hand, a global perspective, and profound thinking about vision must drive strategy, decisions, actions, and assessments.

We recently completed a history of the National War College and have reflected on the school's promise and problems. While the college remains remarkably faithful to the founders' vision, it faces challenges unforeseen by those wartime leaders. If the college is to fulfill its original intention as a "school for strategy," it is time for the Chairman of the Joint Chiefs of Staff to reclaim the institution as his own. Both the Chairman and the Joint Chiefs collectively should clarify the NWC mission, enhance its leadership, encourage the Services in their selection of appropriate faculty and students, and provide leadership in

Joint Staff are preoccupied with more urgent matters, and that professional military education falls to the bottom of the list. Understandably, the Services focus on and support their respective colleges—all of which now have JPME II accreditation. As champions of jointness, the Chairman and the Joint Staff need to own the National War College.

Is the school still needed and still unique? Yes. The National War College's special focus on national security strategy, its highly developed curriculum, deep joint traditions, and interagency character set it apart. Over a quarter of the student body comes from the Departments of State, Homeland Security, and Treasury, the U.S. Agency for International Development, Federal Bureau of Investigation, and the Intelligence Community; the faculty reflects a joint, interagency, and academic mix. There is also a large representation of international military fellows. The college's extraordinary access to Washington policymakers and world leaders is as remarkable now as it was over six decades ago.

deep dedication to the NWC mission. The three-star commandants during this era reported directly to the Chairman and had management control of the school. While Service rotation did not guarantee strong performance in commandants, this abiding tradition brought continuity and accountability. With the advent of the National Defense University in 1976, the commandant's rank was reduced, and over the past few decades leadership stability was disrupted by limited tenures, frequent turnover, and breaks in the rotation between Services.

For the college to thrive, the commandant must be more than the NDU president's administrative overseer for the college. He or she must be his or her own person, with a defined mission and the freedom and resources to accomplish it.

Short tours and ill-defined powers frustrate even the most dedicated leader. Ideally, the commandant position should have a longer tenure, to include teaching responsibility, and attract officers who demonstrate a commitment to lead an institution that is a specialized professional school. This has been an ongoing concern over the years. In a report to the commandant in 1953, a member of an academic review team wrote:

the Chairman and the Joint Chiefs collectively should clarify the National War College mission, enhance its leadership, encourage the Services in their selection of appropriate faculty and students, and provide leadership in driving the focus of its curricula

driving the focus of its curricula. We offer the following observations and recommendations to strengthen the college, so it can better serve the Nation in this new era. We also suggest that the college and the university itself go back to its roots and revive the original concept for joint—and interagency—senior education that Eisenhower and other post–World War II leaders had for the college in 1946.

Mission and Leadership

The Chairman and the Joint Staff need to clarify and support the distinct mission of the college, which began as an experiment in professional military education and had the active support of President Harry Truman, Secretary of Defense Forrestall, Secretary of State James Byrnes, and the Service chiefs. Both the War College and the Industrial College of the Armed Forces (ICAF) anchored a new educational endeavor at Fort Lesley J. McNair in Washington, DC, that earned remarkable official and public acclaim. Now there is a sense that both colleges have become orphans, that the Chairman and the

For the school to fulfill its mission, it needs its senior stakeholders. The college needs the active involvement of the Chairman and the Joint Chiefs in policies that will invigorate the leadership team, give more responsibility and stability to the position of commandant, and reaffirm the standing of the school.

As in the case of any institution, the college needs strong leadership. As former faculty members, we know the benefits of an involved and accomplished dean of faculty, who must bring academic direction and continuity to faculty relations. But we also know that the college thrives when commandants have the discretion to engage fully in the academic program, teach, and have enough tenure to support the college's mission.

As our research reveals, for the first 30 years, the National War College had a set pattern and tenure for commandants: a rotation between Services for full 3-year tours. Admiral Harry Hill, the first commandant, set the standard, with prior combat experience, intellectual curiosity, and a

The top management has been less effective than it could be expected to be. The reasons . . . are the relatively brief tenure of the Commandants . . . and their lack of experience in running an institution of higher learning. Men of fine character, excellent minds, and wide experience have served as Commandants. . . . But their previous experience did not equip them to head a major, new, high-level academic institution in the exploratory field of national grand strategy under conditions of possible global, total war. And the shortness of their terms of office prevented them for accumulating very much experience.

To attract and mentor new commandants, an NWC Oversight Board, along the lines of the original Board of Consultants, should be reconstituted. From 1946 to 1976, this board played a vital role in advising, assisting, and providing feedback and evaluations for the commandant and the college.[2] A revived board would include, as it did in the past, distinguished former general officers, Ambassadors, Cabinet and sub-Cabinet officials, as well as academic leaders. Many should be NWC graduates. This board could

function as a selection advisory group for the Chairman, defining the criteria for leadership and reviewing the needs of the school.

But leadership goes beyond the selection of commandant to the command structure of the college. In the early decades of its existence, the National War College had an elaborate staffing structure, with 89 support personnel and a multitiered command structure. Currently, the college has but a fraction of its original staff, and overall management duties fall on the dean of faculty and a combined civilian dean of students/chief of staff. Traditionally,

> *for the college to thrive, the commandant must be his or her own person, with a defined mission and the freedom and resources to accomplish it*

both deans were Active-duty colonel/captain billets. We propose that the dean of students revert to Active duty, separating out the chief of staff function as either a military or civilian billet. We also suggest that the dean of faculty position be open to either military or civilians, ideally NWC graduates with prior teaching experience. Specifically, we think the position of dean should be open to civilians since that position requires a doctorate.[3] The Services have been hard-pressed to nominate candidates. As the Active-duty forces are stressed by two ongoing wars and a multitude of other responsibilities, it is hard for military officers to find the time to study for advanced degrees. The Defense Science Board needs to address this issue for all the professional military education (PME) schools.

Faculty

Military Faculty. Throughout its history, the National War College debated the criteria and performance of its military faculty. The selection of this faculty for the college is largely left to the individual Services and the criteria lack transparency. As we found in our research, the problem is exacerbated in times of war. The demands of deployments and wartime surges stress the ability of the Services to release combat veterans to come back for advanced education and to return to teach.[4]

At a more basic level, do the Services value those teaching at senior PME institutions? We believe that an assignment to the college is critical to our nation's security and should be respected. The college needs intellectually engaged military faculty from a variety of backgrounds to best prepare the next generation of leaders. What matters is not an officer's potential for promotion, but his or her enthusiasm, intellectual engagement, and ability to teach. This has been a perennial challenge at the college. Over the years, a number of recommendations have been advanced in this regard:

■ offer selected officers opportunities to pursue a doctorate with a future assignment to the college, and expand these options for minority officers to broaden the diversity of the faculty

■ extend the NWC tour to 3 or 4 years

■ allow for military faculty above and below the rank of colonel/captain

■ work with the Services to recruit officers who would best perform at the college.

Over the years, the college has been blessed with a corps of outstanding military faculty, but it appears to be more happenstance than design. NWC leadership has no insight into the grand plan of any of the Services. Here again, an active Oversight Board could assist with military faculty selection and potential promotion options.

Agency/Department Faculty. In an effort to enhance the quality of Defense Department and agency personnel assigned to the faculty, the college needs to expand its interagency recruitment efforts, to encourage the best match between faculty background and interest in teaching at the college. The standard set by George Kennan was impressive; he taught and spoke at the college over

U.S. Navy

U.S. Navy

DOD

Fleet Admiral Nimitz (left) and Navy Secretary Forrestal (center) helped institute the War College; General Omar Bradley (right) was on college's Board of Consultants

his entire career. Recently, the college was privileged to have Ambassador Ryan Crocker for a brief tour, continuing the Kennan tradition. We need the Department of State, USAID, and the intelligence agencies to increase awareness of the NWC program and to alert younger personnel who might want to make longer term career choices based on an eventual tour at the college.

Civilian Faculty. The civilian faculty presents a series of special challenges. In the first few years, the college had four civilian "visiting professors," who taught only in the fall semester. As it quickly became apparent, this "visiting" approach provided no continuity or planning for the following year's course, and within a short time civilian academic faculty was given multiyear contracts. Currently, most of the civilian faculty members are hired under Title 10 of the Federal Code for the Department of Defense, for mainly 3-year renewable contracts. There is no tenure process at the college.

The absence of tenure reflects, in part, the distinct nature of the school and its unique mix of faculty groups. It was clear from the beginning that the college was not intended to be a typical graduate school, not created to produce researchers but policy- and decisionmakers. Given the diverse backgrounds of the faculty—a blend of

to enhance the quality of the faculty, the college needs to expand its interagency recruitment efforts, to encourage the best match between faculty background and interest in teaching at the college

scholars and practitioners (military officers, Ambassadors, and intelligence officers)—we strongly support the NWC tradition of collegiality and mutual professional respect. Appreciative faculty members in our study reported that it was rare in "stovepiped" Washington to work and learn with professionals who are "not in your lane." Underscoring this atmosphere, the Chairman's commitment to academic freedom is deeply valued. The college's gift to the students is the vibrant exchange of views, a mature and vigorous debate between all communities.

The college is an intellectual refuge that must be protected.

The Student Body

The National War College is designed for its unique student body—men and women in midcareer whom their Services and Departments believe will go on to higher positions in the national security area. But do they? The process for selection to the college as well as the decisions for follow-on assignments has always been opaque. The Services have their own senior school selection boards and tightly control these decisions. In the early 1990s, the college attempted to work with the Services, highlighting the national security strategy focus of the program. We believe this effort should be redoubled. As the Joint Chiefs and the Defense Science Board consider the role of PME and the mission of the National War College, serious attention should be paid to student selection and follow-on assignments. The Nation invests scarce resources into the college, a specifically designed program. It should be offered to the most appropriately chosen student body.

This is easy to say, but is a challenge for each Service to do. Even as early as the mid-1950s, the NWC commandant noted that the Services fought to send their best to their own senior schools. Since the National War College has no "sponsoring" individual Service, the Chairman's leadership in this area is vital.

The Academic Program

The philosophy of the school's program has not changed over the years. As the early student handbooks in the 1950s noted:

the best preparation which can be given its students for their future work is an increased capacity to think *broadly, objectively, and soundly* [about] *national security in this increasing complex world in which we live. The emphasis therefore is on the* educational *process as opposed to the* training *process. The College does* not *train its people to be future J-3's and Counselor of Embassy. But it does strive to make them* think *in such a manner that they cannot help but be better J-3's and Counselors of Embassy for having had the experience of attending this College* [emphasis in original].

The academic program was established to educate senior military and civilian officials to think broadly and soundly. The program's focus has always been on grand strategy, all

the tools of statecraft, as well as joint and interagency operations. But each year there is lively debate over a number of key issues that pose challenges for the future. Should the college keep the focus on grand strategy, or should it focus on the operational level? There are two components to this question. The first reflects assumptions about the uniqueness of the college and the strategic nature of its curriculum. While the other senior schools have expanded their own programs to include grand strategy as well as joint and interagency topics, this is the key and central component of the NWC program. Indeed, its curriculum has shifted closer to, not away from, the strategic level of analysis, the broader view of grand strategy using all the tools of critical analysis and statecraft. With the mounting cries that we lack "strategic leaders," it seems that the focus should remain and deepen.

Secondly, is this focus on grand strategy too abstract, too "next-war-itis" in a world of immediate regional threats? Following the attacks by al Qaeda in 2001, the NWC faculty discussed refocusing the course on the Islamic extremist threat. While some faculty members argued that this indeed was the strategic threat of the era, others held that this was merely the "crisis du jour" and thus should not impact the current course offerings. This has been a continuing debate over these past 8 years. In the context of the early years of the school, the crisis du jour of Stalin's aggression became the existential threat defining a 50-year period of deterrence and smaller military campaigns. Are we simply in the early stages of another multi-decade challenge?

In this regard, it is useful to go back to the college's earliest days to get a better sense of strategy and threat. Rather than jumping immediately into courses on strategy, the college focused on an analysis of the threat. Kennan's study of the Soviet Union led him to three basic, but profound, conclusions:

- the Soviet Union, even if defeated in battle, was too large to occupy—and we do not do occupations well
- a war fought with atomic weapons would have no victors
- the ideological attraction and logic of communism had to be countered.

Acknowledging the Nation's exhaustion after World War II, Kennan's lectures at the college focused on "measures short of war."[5] This reasoning, and his deep understanding

of Soviet motivations, led him to the elegant and enduring strategy that contained the Soviet impulse to expand, stressed its central planning model, and addressed conditions of poverty that fed the appeal of Marxism.

If Kennan were still teaching at the War College today, we believe that he would be deep into a similar analysis of "the sources of militant Islamic conduct." He knew the strategist's first task is to understand motive, causes, and symptoms of grievance. He would be analyzing movements that go beyond the nation-state, centered on tribal traditions and theology. Following along these lines, he would be joined by General David Petraeus and Ambassador Crocker team-teaching courses in advanced strategy for hybrid conflicts.

Of course, this is not the only threat we face, and the college must prepare students to cope with conflicts of any ilk. How do we make time in the academic program to present a thorough study of the host of nations,

the curriculum has shifted closer to, not away from, the strategic level of analysis, the broader view of grand strategy using all the tools of critical analysis and statecraft

movements, and conditions that challenge us now? Should the intermediate schools begin this study with the college providing booster-shot instruction? Indeed, to do this job adequately would require a 2-year program.[6]

Underscoring this argument is a more basic question of focus. Should the curriculum be U.S.-centric or "other"-centric? That is, should the majority of the academic program consider the United States, its diplomatic history, bureaucratic politics, military history, joint military structures, and foreign policy and crisis management challenges? Or should more time be devoted to the texture and detail of "the other?" As our history project revealed, the National War College did not offer detailed—indeed, any—courses on Korea or Vietnam during those wars: nothing on the politics, cultural traditions, social or ethnic dynamics of these two battlefield nations. Now, there are so many "targets of concern" that the college does not have the time to provide the same depth that Kennan offered in the 1940s.

This argument about focus is not confined to discussions about the NWC curriculum; it can be seen in the larger, lively debate within the military on doctrine. Should the military just concern itself with battles and operations or with political development and governance? Traditionally, military studies concentrated on orders of battle, operations, maneuver, envelopments, emplacements, tactics, technology, logistics, and victory. Armies faced armies over a battlefield, sea and air campaigns subdued an enemy force. But as war gravitated to complex political conflicts, insurgencies, and now tribal and religious conflicts, the military leadership in our nation is calling for new national doctrine and new definitions of center of gravity. In report after report, the Chairman, combatant commanders, and Secretary of Defense have called for "unconventional thinkers to address unconventional challenges." As this approach is operationalized in the new Army and Marine Corps counterinsurgency doctrine and Provincial Reconstruction Teams in Iraq and Afghanistan, the War College has adjusted its curriculum to reflect this debate in military thought and the larger issues of national security strategy.[7] In the end, however, the college is not about a single nation or region, but about analytic structures and broad threats. Just as David Kilcullen's *The Accidental Guerrilla* looks at an analytic structure that is applicable from Timor to Afghanistan to Iraq to Spain and England, so the War College must help its students to see the broad patterns but learn to adapt quickly to local conditions, based upon local expertise.

A final observation is in order. The Departments of Defense and State find themselves in the midst of dynamic intellectual debates over military doctrine, interdepartmental and interagency relations, and the global role of the United States. Frustrations on the battlefield challenge the Obama administration. Underlying the pressures of current operations are lingering questions about the ramp-up to war, the lack of adequate planning, the diminished role of State, and the absence of overall strategy. The spate of books covering Iraq and Afghanistan in the early years was followed by articles from Activeduty troops themselves, as well as blogs and online journal articles in sites such as Small Wars Journal. Some address "failures in generalship"; others focus on poor integration between State, USAID, the nongovernmental organization community, and the military.

Since many generals and higher ranking civilians involved in the current debates and challenges attended the college during the 1990s, we must look carefully at this criticism. Did the graduates bring their NWC education to the policy arena? Although the college had a well rounded program, we make two suggestions to focus and deepen student preparation.

We suggest that students need the mental discipline that comes from the use of strategic frameworks to guide analysis and that this discipline be repeatedly exercised in complex scenarios. The pressure to respond to attack, to act, to "do something" in crisis is so great that only a disciplined education, with appropriate specializations, can prepare an officer or civilian official to "stand there" and think through the problem, seeing the pitfalls, before recommending the best course of action.

Currently, NWC oral examinations include scenario analysis, and core courses weave case studies throughout. But we have come to believe that this method must be intensified. One approach for teaching as well as student evaluation was designed by Colonel George Raach, a former Army member of the faculty. Colonel Raach took an NWC strategic framework and applied it to what we now refer to as "hybrid conflicts." He found that if students could answer and grasp the impact of the following questions, they would have the foundation for strategic analysis. Using this framework, a student must evaluate and understand:

- What U.S. interests are at stake?
- How important are these interests?
- What are the risks of acting or not acting?
- What assumptions have been made?
- Is this conflict intrastate or interstate?
- What is the root cause of the conflict or dispute?
- Who are the antagonists and what are their relationships?
- What are the antagonists' resources, capabilities, strengths, weaknesses, and likely courses of action?
- What are the antagonists' belief systems, both religious and tribal?
- How willing are the antagonists to compromise?
- Who are the antagonists' internal and external allies?
- What are the antagonists' centers of gravity? When did the problem begin? What are the antecedents?
- What is the political, social, and economic context?

■ What are the significant geographical aspects of the area?

■ What are the capabilities of regional organizations?

■ How long is the operation likely to last?

■ What are the interests, goals, and objectives of coalition partners?

■ What wildcard countries or conditions exist?

■ Can the policy objectives be obtained with military force?

■ How will the economic, political, diplomatic, and social elements of power be synchronized with military operations?

■ How will success be measured?

Did NWC graduates—both military and civilian graduates—go through this discipline, planning and preparing for action in Afghanistan or Iraq? Even setting aside this thoroughgoing analysis, and just using the basic components in policy or military campaign planning, did any graduate object when courses of action, branches, and sequels were not adequately evaluated? Were any alumni concerned with how little knowledge decisionmakers had about Iraq or Afghanistan—history, key leaders, culture, political dynamics—the questions that Kennan would have raised at the time?

At a deeper level, did NWC graduates "speak truth to power"? We argue that the students need not only the discipline of the strategic analysis models, but also the mental preparation to present their best military or professional advice, even in the face of overwhelming political pressure. Some may call this ethics or leadership training, but despite the fact that the college had topics on both, past policy failures suggest that we need to confront this issue.

Finally, the Defense Science Board should consider the calls made by the Chairman, Secretary, and President for a "whole-of-government" or "integrated component" approach in national security, with reference to the balance between the military and the nonmilitary instruments of statecraft, the so-called mix of defense, diplomacy, and development. Recent efforts to develop national security professional education should review the original concept for postwar professional education: a national security consortium of schools. As originally envisioned by Eisenhower and the NWC founders, both the War College and ICAF would have been joined by three other senior professional schools: a State Department College, an Administration College, and an Intelligence College. Our updated proposal would include a College of Diplomacy and Development to complement the NWC program and foster greater institutional strength at State and USAID. We would advocate that the Industrial College also reclaim its roots. This could be ICAF's day in the sun. It is designed for industry studies, mobilization assessments, and economic analysis. It can help the Nation evaluate the impact of the economic crisis, our industrial contraction, on strategy.

This broader "integrated component" proposal suggests a larger interagency review panel, and the Defense Science Board should propose a side study to this effect. But with or without a broader reform at the National Defense University, the proposals above for the strengthening and focusing of the War College stand.

The school has never been more important, the mission never more vital, and the requirement for strategic leaders never more timely. **JFQ**

NOTES

1 Report of Leonard T. Gerrow (1945), Washington, DC, National Defense University Library Special Collections.

2 Over the years, the board has included General Omar Bradley, Father Theodore Hesburgh, Dr. Bernard Brodie, and John J. McCloy.

3 The Ph.D. criterion reflects, in part, the Middle States Accreditation requirements for Master's degree–granting institutions. Some in the field question this requirement, noting that few great strategists in history had advanced degrees.

4 A number of the Services are concerned with this issue—particularly the Army, which is addressing this tension and working to bring experienced officers for tours at West Point, Leavenworth, and Carlisle.

5 Giles D. Harlow and George C. Maerz, eds., *Measures Short of War: The George F. Kennan Lectures at the National War College, 1946–47* (Washington, DC: National Defense University Press, 1991).

6 A 2-year program, referencing the past German General Staff structure and its military education system, was proposed by Martin van Creveld, *The Training of Officers, from Military Professionalism to Irrelevance* (New York: Free Press, 1990).

7 See Derek S. Reveron and Kathleen A. Mahoney-Norris, "'Military-Political' Relations: The Need for Officer Education," *Joint Force Quarterly* 52 (1st Quarter 2009). But with this focus, there is the concern that future opponents will take other tacks, and so the college must cover all aspects of threat.

Developing Strategists

Translating **National Strategy** into **Theater Strategy**

By DEREK S. REVERON and JAMES L. COOK

Tactics without strategy are a variety of roads that are going nowhere and will lead to a very short-term focus on a mission.[1]

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To update an old saying, "Russians play chess, Chinese play 'go,' and Americans play poker." While this saying is meant to evoke the astrategic nature of the United States and convey the image of the naive American policymaker going from crisis to crisis, it fails to capture the strategic continuity in U.S. grand strategy or its importance in contemporary foreign policy. Since 1945, the United States has consistently followed a strategic logic of global leadership through international economic and political institutions. The United Nations, North Atlantic Treaty Organization, International Monetary Fund, and the predecessor of the World Trade Organization were born and raised in America.

These international institutions speak with an American accent. Through these institutions and others like them, the United States has been attempting to ameliorate historic rivalries, promote economic development through international trade, and collectively address threats to international peace and security.

While there are limits (even for superpowers) that underscore policy inconsistencies, exemplified by economic engagement with China versus the economic isolation of Cuba, such exceptions should not be mistaken for a lack of a grand strategy. Rather, they should be interpreted as outcomes of a democratic political process that enables organized minorities to have significant influence on policy. To be sure, the United States in the

Soldiers train for joint air assault operation with Afghan National Army and Border Police

U.S. Army (Derek L. Kuhn)

pursuit of its national interests sometimes behaves outside of the international norms it seeks to promote. Employing force against Belgrade in 1999 and imposing tariffs on Canadian soft lumber are but two examples. Yet the United States behaves more like a platinum card member exacting special privileges from organizations that it helped create than it does a hegemon on the offensive.[2]

With a strong notion that strategy helps either prevent train wrecks or prepare for them, Washington follows a grand strategy that shapes the security environment. To avoid going from crisis to crisis, the United States, and in particular its national security actors, attempts to defuse situations before they become crises through a strategy of prevention.

The challenge for the strategist is to coordinate the various levers of national power in a coherent or smart way. Secretary of State Hillary Clinton emphasized this during her January 2009 confirmation testimony when she argued, "We must use what has been called 'smart power': the full range of tools at our disposal—diplomatic, economic, military, political, legal, and cultural—picking the right tool, or combination of tools, for each situation."[3] Calls for smart power are a reaction to George W. Bush's foreign policy, but more importantly they underscore that power relations are stratified. In the context of military power, unipolarity dominates thinking about the U.S. position in the world, but recent foreign policy frustrations illustrate that power relations are stratified.[4] At the military level, U.S. power is unparalleled and unprec-

edented. At the economic level, the United States is checked by other great economic powers such as Japan, the European Union, and the People's Republic of China, and through institutions such as the World Trade Organization. And, at the transnational level, the United States is but one of many state and nonstate actors that influence global events.

To be effective in a stratified world, strategists must answer three basic questions: Where do we want to go, or what are the desired *ends*? How do we get there, or what are the *ways*? And what resources are available, or

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unipolarity dominates thinking about the U.S. position in the world, but recent foreign policy frustrations illustrate that power relations are stratified

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what are the *means*? While the first question is largely the domain of civilian policymakers, military officers are expected to advise on and ultimately implement strategy. As the *Joint Operating Environment* notes, "Future joint force commanders will not make grand strategy, but they must fully understand the ends it seeks to achieve. They will have a role in suggesting how the Joint Force might be used and the means necessary for the effective use of joint forces to protect the interests of the United States."[5]

Defining Strategy

At a minimum, strategy links ends, ways, and means. For the Department of Defense (DOD), *strategy* is "the art and science of developing and employing instruments of national power in a synchronized and integrated fashion to achieve theater, national, and/or multinational objectives."[6] Put differently, strategy is about *how* leadership can use the *power* available to the state to exercise control over people, places, things, and events to achieve *objectives* in accordance with national interests and policies.

Henry C. Barnett visualizes strategy as an interaction among key variables such as the security environment, ends, ways, means, resource constraints, and risk.[7] As represented in figure 1, strategy is shaped by the security environment, which it in turn attempts to shape. Allies, partners, and adversaries impact successful strategy implementation. At the same time, resource constraints impact strategy too.

Successful implementation is determined by the interaction of all variables, but achieving objectives or attaining ends is the overall goal of strategy. The strategist can look to national interests as a starting point to determine ends because they help identify the reasons countries commit military forces. National interests can be universal, such as ensuring the security of the state and its people. And national interests can be the product of national policymakers, such

DOD (Jerry Morrison)

U.S. Navy (Tiffini M. Jones)

Left: Secretary of State Clinton believes national power must be coordinated in coherent, smart way
Above: Chief of Naval Operations meets with senior South African defense leaders in Pretoria, South Africa

as advancing democratic institutions. The attempt to differentiate intensity of national interests is important. Hans Morgenthau differentiated between *vital* national interests and *secondary* interests, which are more difficult to define.[8] One relatively simple approach to this rather complex and somewhat ambiguous concept is to stratify national interests:

■ Vital interests: What are we willing to die for (destroy al Qaeda)?[9]

■ Important interests: What are we willing to fight for (prevent genocide in Kosovo)?

■ Peripheral interests: What are we willing to fund (deploy African Union peacekeepers to Darfur)?

Given the U.S. ability to achieve air supremacy or launch standoff weapons, it can kill with limited risk to its Airmen or Sailors, giving it a coercive advantage. In the 1990s, for example, missile attacks against Iraq and the air war for Kosovo exemplified that the United States was willing to fight to achieve objectives, but was not willing to suffer fatalities (during the 38,000 sorties in Yugoslavia, not a single pilot was killed). In both cases, the United States deliberately withheld ground force options, which would have considerably raised the stakes. It seemed that airpower alone could achieve strategic interests.[10]

In addition to using military force, the United States also pursues its national interests through friendly surrogates. In such cases, the Nation is willing to fund others to provide humanitarian assistance, conduct peacekeeping operations, or provide regional stability. The clearest example is through the Global Peacekeeping Operations Initiative (GPOI), which was designed to train and equip 75,000 foreign peacekeepers for global deployment.[11] A program such as GPOI is consistent with the preventative war strategy of the United States, which seeks to limit the impact of regional crises. And it gives the international community a ready response to crimes against humanity. Along these lines, the United States was willing to fund African militaries to take part in African Union/United Nations missions to stop and prevent genocide in Darfur. Deploying American ground troops or establishing a no-fly zone has yet to emerge as a viable option.

As Presidents and their administrations evaluate national interests, the above

approach suggests certain criteria for the employment of military forces. Not all crises around the world warrant the commitment of U.S. forces, especially considering the availability and utility of other elements of national power. The military, in particular, favors a conservative approach to force employment that can be traced to the Weinberger Doctrine, which emphasized six criteria for the commitment of forces. One of these criteria was a clear description of U.S. or its allies' vital national interests.[12] Donald Rumsfeld proposed a similar framework in 2002 by asking, "Is the proposed action truly necessary? If people could be killed, ours or others, the U.S. must have a darn good reason." Ultimately, the President determines what constitutes a vital interest, but the three questions act as a way to understand the intensity of national interests and defining ends. Not all foreign policy crises result in deploying ground forces, and we argue that the type of force deployed (air, ground, or allies) is a good empirical way to understand the intensity of national interests.

cive. Diplomacy is coercive when the threat of military force underlies a demand, or it can be noncoercive when it offers diplomatic recognition to a new government or country. Likewise, the military is coercive when it engages in combat, while it is noncoercive when it provides humanitarian assistance.

Ways can be reworked to be seen as concepts, which are end-to-end activities that define how elements, systems, organizations, and tactics combine to accomplish national objectives or tasks.[13] By specifying ways or concepts, the military departments can then develop required capabilities and attempt to limit redundancies. For example, there are many ways for the military to conduct global strike operations: submarine-launched missiles, precision weapons delivered by bombers, sabotage missions conducted by Special Forces, and others.

In 2009, there are about 20 concepts that range from preparing for major combat operations to conducting engagement activities. Each concept is designed to fully appreciate the various missions the military may

after ends are defined, policymakers and national security professionals develop the ways to achieve national interests

After ends are defined, policymakers and national security professionals develop the ways to achieve national interests. Ways are often equated to the tools of national power (diplomatic, information, military, and economic). Yet power is more nuanced, and all tools can be coercive and noncoer-

undertake and is used to identify excesses and gaps in military force structure. The choice is ultimately the President's, but DOD sees its role as developing options with various levels of risk involved. When evaluating ways, strategists should analyze for feasibility, suitability, and acceptability. First, given the

Figure 1. The Shaping of Strategy

ends, is the action *feasible* with the means available? Second, is the action *suitable* to achieve the desired ends? Finally, is the action *acceptable* given public, political, and ethical considerations?

If ways operationalize elements of national power, then means are the tools that operationalize the ways. Resources are not means until they are considered and prioritized within the context of strategy. Overall strategic success is based on how well ends, ways, and means are balanced. Julian Corbett observed that one has to keep in view

as a way to achieve this objective, but does not possess any power projection capability (means), then the resulting mismatch places the strategy at risk. Likewise, neighboring countries can respond by matching defense acquisitions, which would be an example of the security environment impacting the strategy. In considering military strategy, DOD considers four dimensions of risk.[16] *Operational risk* is associated with the current force's ability to execute the strategy within acceptable costs. *Future challenges risk* considers the military's capacity to

know yourself; in a hundred battles you will never be in peril."[18] Ideally, perfect knowledge ensures success, but history is replete with evidence to the contrary. Since war "is . . . an act of force to compel our enemy to do our will," the enemy has a vote too.[19] War is characterized by fog and friction; strategy attempts to reduce (not eliminate) uncertainty.

Levels of Strategy

Grand strategy is the highest level strategy and encompasses all elements of national power. While the country has always followed a grand strategy (for example, containment during the Cold War), Congress required the President to clearly state the overall vision of the United States in a national security strategy under the Goldwater-Nichols Department of Defense Reorganization Act of 1986.

Since this statutory requirement, there have been eight national security strategies released by U.S. Presidents. While each President responded to particular security challenges during his tenure, there have been continuous policies related to trade, America's leadership in global affairs, and the promotion of international organizations to unify action. The United States roughly follows President Kennedy's Cuba policy, President Nixon's China policy, and President Clinton's trade policy.

Deriving strategic guidance from the country's grand strategy, DOD has regularly produced a National Military Strategy (NMS) since the 1990s. In 2003, Congress formally required the Chairman of the Joint Chiefs of Staff to submit a biennial review of the strategy in even-numbered years. The NMS outlines the strategic direction for the Armed Forces of the United States, which should be consistent with the current National Security Strategy. Unfortunately, the Chairman has not released one since 2004, but one should follow the Quadrennial Defense Review when it is released in early 2010.

Though there is no statutory requirement, the Secretary of Defense released a National Defense Strategy (NDS) in 2005 and 2008. Since the strategy is written (or at least directed and signed) by the civilian head of the military, the strategy should be read as directions to the uniformed military. Though strategic documents are subtle, they are one form of civilian control. The NDS provides a more direct link between the National Security Strategy and the National
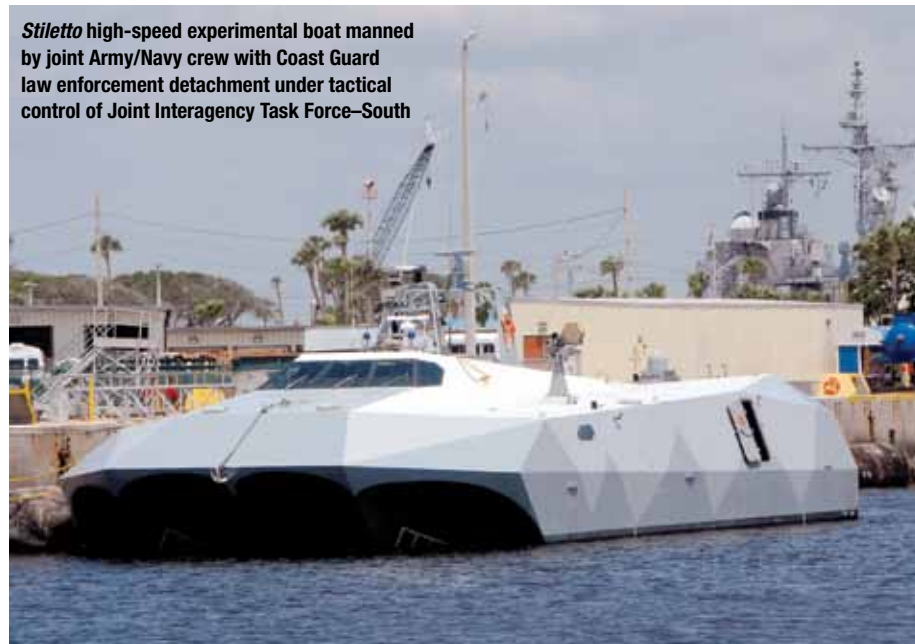
Stiletto high-speed experimental boat manned by joint Army/Navy crew with Coast Guard law enforcement detachment under tactical control of Joint Interagency Task Force–South

U.S. Navy (Alan Gragg)

constantly the politico-diplomatic position of the country (on which depends the effective action of the instrument) and its commercial and financial position (by which the energy for working the instrument is maintained).[14] General Anthony Zinni, USMC (Ret.), emphasized the importance of resources: "Even if the [commanders in chief] produced good strategies at their level (and I believe we did), with good ends and reasonable ways to achieve them, we still had no idea whether or not the administration and the Congress would come through with the means."[15]

A strategy is not considered complete until a risk analysis is conducted to determine the ability of the organization to carry out the tasks and missions implied by the strategy. Risk results from a "mismatch" among ends, ways, and means.

One example of a mismatch is country X's objective to become a regional power (ends). If country X relies on its military

execute future missions against an array of prospective challengers. *Force management risk* considers recruiting, training, equipping, and retaining personnel. And *institutional risk* focuses on organizational efficiency and financial management.[17] The "right" way is ultimately determined by policy, but the decision is informed through experimentation, war games, and exercises.

As the preceding discussion suggests, strategy is developed in the context of the international security environment. An analysis of the security environment is essential to the strategist; it identifies threats to national interests and challenges that impede the advancement of national interests. Furthermore, the security assessment can identify new opportunities, too. The analysis also forces the strategy to interact with the real world. Strategy shapes and is shaped by external actors, which differs from Sun Tzu's famous exaltation, "Know the enemy and

Military Strategy. It lays out strategic objectives for the defense of the Nation and its interests, articulates the ways the United States will achieve those objectives, and discusses implementation of the strategy. The various strategic documents are intended to "nest" together; that is, each document is intended to support the tasks, missions, and intent of the next higher strategy. Yet delays in releasing the strategies do not always enable the strategic documents to nest as neatly as we might like.

Theater Strategy

Using national strategy as a guide, combatant commanders develop theater strategies, which are:

strategic concepts and courses of actions directed toward securing the objectives of national and multinational policies and strategies through the synchronized and integrated employment of military forces and other instruments of national power. Theater strategy is determined by [combatant commanders] based on analysis of changing events in the operational environment and the development of options to set conditions for success.[20]

Theater strategy links national strategy to operational level plans and activities, tailored to the commander's area of responsibility in a joint, multinational, and interagency environment.[21]

A major challenge in the development of theater strategy is the requirement to coordinate and synchronize theater security cooperation activities with other U.S. Government activities. These activities can cover the entire spectrum of conflict and often occur simultaneously, providing an additional level of complexity for commanders and their staffs to consider during planning and execution of the theater strategy. Theater strategy must therefore be broad and flexible enough to encompass a wide variety of political-military activities across a combatant command's area of responsibility at the same time.[22] It must also take into account other countries' activities.

Unity of effort is the key to a successful theater strategy. For example, a prominent way the United States pursues its strategy of global engagement is through military-to-military cooperation. Admiral James Stavridis, USN, views promoting security as an important mission. His approach—working with interagency partners and partner nations—implies

the criticality of developing partner capacity to address the challenges in today's security environment. This notion is reinforced in the 2008 National Defense Strategy, which states, "Arguably the most important military component of the struggle against violent extremists is not the fighting we do ourselves, but how well we help prepare our partners to defend and govern themselves."[23] However, simply building partner capacity is insufficient without a strategy to provide direction and ensure activities are unified with other government activities and the partner country's goals.

> *the United States roughly follows President Kennedy's Cuba policy, President Nixon's China policy, and President Clinton's trade policy*

Despite the complexity and criticality of theater strategy, there is relatively little doctrine or other guidance on developing it. The Chairman of the Joint Chiefs of Staff has issued direction that requires professional military education institutions to teach senior officers how to "synthesize how national military and joint theater strategies meet national strategic goals across the range of military operations."[24] To bring rigor to theater strategy development,

Mackubin Owens offers a logic model designed to translate grand strategy and associated strategic direction into theater strategy and associated plans, including theater security cooperation (see figure 2).[25]

The model begins with national (grand) strategy, which defines U.S. security interests, objectives, and priorities and provides guidance to all who are charged with its execution, including regional combatant commanders. Given the National Security Strategy, DOD and the Joint Staff produce strategic guidance that focuses on the military instrument of national power and provides direction for the combatant commanders through several critical documents. For example, the Unified Command Plan (UCP) "sets forth basic guidance to all unified combatant commanders; establishes their missions, responsibilities, and force structure; and delineates the general geographical [area of responsibility] for geographic combatant commanders."[26] The 2008 UCP sets general roles and missions, but it also includes explicit guidance.

According to the 2008 Strategic Management Plan, the DOD Guidance for the Employment of the Force (GEF) "covers how to use the current military to generate military effects within the battlespace, along with resource and capability needs."[27] The GEF provides strategic direction for the

Figure 2. Strategy and Theater Security Logic Model

GRAND STRATEGY — NSS → **STRATEGIC DIRECTION** — NDS/NMS/JSCP/UCP → **STRATEGIC ESTIMATE** — Operational Challenges/NIC/NIE/JOE

SCIENCE AND TECHNOLOGY

WAR GAMING SCENARIOS EXPERIMENTATION

RISK ANALYSIS

STRATEGIC CONCEPTS — Attributes CCJO/JFC/JOC/JIC

THEATER PLANS — OPLANs/CONPLANs/TCP ← **THEATER STRATEGY**

RISK ANALYSIS

Key: CCJO: Capstone Concept for Joint Operations; CONPLANs: Contingency Plans; JFC: joint force commander; JIC: Joint Intelligence Center; JOC: joint operating concept; JOE: joint operating environment; JSCP: Joint Strategic Capabilities Plan; NDS: National Defense Strategy; NIC: National Intelligence Council; NIE: National Intelligence Estimate; NMS: National Military Strategy; NSS: National Security Strategy; OPLANs: Operations Plans; TCP: Theater Campaign Plan; UCP: Unified Command Plan

combatant commander in the development of near-term (2-year) operational activities and priorities, as well as global posture and force management guidance, and is designed to link strategy to military operations. The GEF also provides strategic end-states and priorities to the combatant commands in the development of campaign and contingency plans, as well as security cooperation activities.[28]

Finally, the Chairman's Joint Strategic Capabilities Plan implements the guidance contained in the GEF and "provides [focused] military strategic and operational guidance and direction to combatant commanders and Service chiefs for preparation of operations plans and security cooperation plans based on current military capabilities. It is the primary vehicle through which the Chairman exercises responsibility to provide for the preparation of joint operation plans."[29] This plan also provides guidance concerning operational requirements and the apportionment of resources.

Armed with grand strategy and strategic direction described above, as well as any guidance provided by the combatant commander, the staff is prepared to begin formulating theater strategy. One of the most critical steps in developing strategy is to conduct a thorough theater estimate, which is "the process by which a theater commander assesses the broad strategic factors that influence the theater strategic environment, thus further determining the missions, objectives, and courses of action throughout their theaters."[30] The estimate includes a mission analysis that derives specified, implied, and essential tasks, as well as theater-strategic objectives (ends) and desired effects.[31] Given the complex nature of the security environment as well as changes in strategic direction, the theater estimate requires continuous refinement. In addition to a detailed analysis of the combatant command's mission, capabilities, and limitations, the estimate should address the following:

■ any states, groups, or organizations in the security environment that may challenge the combatant command's ability to advance and defend U.S. interests in the region. This analysis should include an appreciation for relevant geopolitical, geoeconomic, and cultural considerations within the area of operations.

■ major strategic and operational challenges facing the combatant command

■ known or anticipated opportunities the combatant command can leverage including those states, groups, or organizations

that could potentially assist the command in advancing and defending U.S. interests in the region

■ risks inherent in the depiction of the security environment.

The theater estimate is crucial for setting the context for the combatant commander mission analysis. The commander articulates his intent through the theater strategic vision that describes how the theater strategy supports the goals and objectives of the United States as derived from grand strategy and strategic direction. The vision should discuss the general methods to achieve those objectives to include strategic communication, pertinent economic tools, and diplomacy. Additionally, the vision may describe where the commander is willing to accept risk. Finally, the vision should introduce and describe the appropriate strategic and operational concepts for the military instrument of power.

When crafting a vision, the commander should succinctly capture the strategic desired outcome.[32] The vision is a snapshot of what the commander wants the theater to look like in the future. Effective visions are usually short, focused, imaginable, positive, and motivating.[33] Constructing an effective vision statement is difficult: one or two sentences must reflect the consolidated theater strategy's goal so it is easily understood and engaging.

A good vision must also be compelling to a broad audience. For instance, if the commander is embraced by coalition partners, regional leaders, and Congress, there is a good chance that the strategy has enough critical mass necessary for success. A coherent and credible vision serves as a practical reference point for subsequent strategic communication initiatives in a complex and cluttered environment. The vision is primarily an essential communication tool that provides strategic continuity and integrity to the everyday challenges and decisions within the combatant command's theater.

Once the theater estimate and strategic vision are complete, the strategist must develop a strategic concept that articulates the ways to achieve the theater strategy objectives

or ends. First, the strategist must consider strategic alternatives that can be expressed either as broad statements of what is to be accomplished or lines of operations. As a useful reference in this process, the strategist can turn to the U.S. Joint Forces Command Joint Operating Concepts (JOCs), such as irregular warfare and the military contribution to cooperative security, that describe "how a Joint Force Commander will accomplish a strategic mission through the conduct of operational-level military operations within a campaign." JOCs identify "key ideas for solving those challenges, effects to be generated to achieve objectives, essential capabilities

given the National Security Strategy, DOD and the Joint Staff produce strategic guidance that focuses on the military instrument of national power and provides direction for the combatant commanders through several critical documents

likely needed to achieve objectives and the relevant conditions in which the capabilities must be applied."[34] In the 2009 *Capstone Concept for Joint Operations* (CCJO), the Chairman recognized that these concepts are not intended as "one size fits all" approaches for the combatant commanders. The CCJO requires the joint force to "[a]ddress each situation on its own terms, in its unique political and strategic context, rather than attempting to fit the situation to a preferred template."[35]

The strategic concept also forms the basis for subsequent planning efforts that include combat operations, security cooperation, and other support operations.[36] Given the size of the geographic combatant command areas, it is possible (if not likely) for these commanders to simultaneously conduct operations across the spectrum of conflict ranging from major combat to humanitarian assistance. The development of a sound strategic concept within the framework of theater strategy allows the command to better articulate to senior leadership what adjustments to doctrine, organization, training, material, leadership, personnel, facilities, and policy or to current capabilities the commander needs during the next 8 years to achieve his theater strategy objectives.

Having determined the ways, the strategic planner must now address the required capabilities (means) to prosecute the strategy. DOD uses Joint Capability Areas (JCAs) as its capabilities management language and framework.[37] The Joint Staff (J7) defines *JCAs* as "collections of like DOD capabilities function-

ally grouped to support capability analysis, strategy development, investment decision making, capability portfolio management, capabilities-based force development and operational planning."[38] There are currently nine top-level (Tier 1) JCAs developed along functional lines to meet combatant command and DOD requirements: force support, battlespace awareness, force application, logistics, command and control, network-centricity, protection, building partnerships, and corporate management and support.

The strategic planner carefully analyzes these capability areas and determines the necessary means that may also include other governmental and nongovernmental capabilities within an interagency context. Upon completion of this analysis and an assessment of current capabilities, the combatant command must determine what capabilities to request from the Secretary of Defense. One mechanism for this request is the combatant command's annual Joint Integrated Priority List, "a succinct statement of key capability gaps that could hinder the performance of assigned missions"[39] and "identifies those areas that require priority attention during" the DOD resource allocation process.[40]

Implementation

Once the theater strategy is complete and approved by the combatant commander, the next step is *implementation*, or executing the strategy. Without the means, competencies, and informed thinking to carry out the commander's intent, the strategy is just an idea.[41] Theater strategy should outline the critical pathways and components necessary to carry out that strategy, as well as the required means, potential obstacles, risk assessment, timeframes, and functional accountability. Implementation requires the cooperation of multiple governmental and nongovernmental organizations, as well as multinational allies and partners. One of the most challenging tasks for the combatant command staff is ensuring that there is a

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if the commander is embraced by coalition partners, regional leaders, and Congress, there is a good chance the strategy has enough critical mass necessary for success

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credible commitment among all participants to accomplish the common goals.

With strategy playing a guiding role in U.S. foreign policy, it is important to know how to evaluate the strategy. At a minimum, a strategy is designed to change the security environment by preventing the emergence of a peer competitor, increasing the number of democracies in the world, or eliminating biological weapons. In a broader sense, strategy develops and employs all tools of national power to advance and defend the national interest. Consequently, when evaluating strategy, one must examine the strategy's concept of national interests, view of the security environment, strategic priorities, role of power, impact on resources, required means, risk, and acceptability.

During traditional combat operations, it is relatively easy to measure whether the military disrupts, degrades, or destroys enemy forces. However, in permissive environments, the objectives are generally broader and can be less clear. Chairman of the Joint Chiefs of Staff Admiral Michael Mullen noted that the effects may never be clearly measurable and cultural sensitivities might preclude measurement.[42] However, in a resource-constrained environment, it is important to understand which activities are more effective.

A theater strategy should contain measurements to calibrate its progress toward achieving goals and objectives. There are three broad categories of measures: input, output, and outcome. Resources are typical examples of *input*. Interagency or coalition support might be other resource inputs. Performance measures that directly track progress toward goals and objectives are considered *outputs*, which are dependent on adequate resources, such as

Bataan Amphibious Ready Group serves as theater reserve force for U.S. European Command

U.S. Marine Corps (Theodore W. Ritchie)

securing an area or building infrastructure, and are accomplishments over which the combatant command has considerable direct control. These measures usually are quantifiable and have associated timeframes. In contrast, *outcomes* are more difficult to measure (often qualitative) and are usually only influenced, not directly controlled, by the combatant command. Examples may include the strength of regional security agreements or the relative receptivity of U.S. forces within the partner country. Outcomes are often referred to as strategic *effects*, the ultimate goals of theater strategy and the commander's intent.[43] If the desired strategic outcome is political or economic stability, examples of outcome measures or *effects* might be representative participation in government or the absence of political violence, or gross national product and revenue from oil production.

The practical value of performance measures is that they let the combatant commander evaluate the theater strategy's progress in achieving goals and objectives. Most theater strategies have a hierarchy of performance measures; high-level measures are supported by more detailed and granular measures. The essential point here is that all performance measures need to be consistent and aligned with the strategic goals.

In practice, strategic decisions must always compete with the demands of domestic politics, or what Samuel Huntington has called "structural decisions." These are choices "made in the currency of domestic politics." The most important structural decision concerns the "size and distribution of funds made available to the armed forces." The strategic planner can never ignore fiscal constraints. Indeed, political reality sometimes dictates that budgetary limits will constitute the primary influence on the development of strategy and force structure. Additionally, bureaucratic and organizational imperatives play a major role in force structure choices. Potential mismatches create risks. If the risks resulting from an ends-ways-means mismatch cannot be managed, ends must be reevaluated and scaled back, means must be increased, or the strategy must be adjusted.

That said, when done correctly, theater strategy enables the combatant commander to effectively secure U.S. national interests by obtaining and synchronizing available resources from within the interagency to achieve theater objectives within a multinational environment. **JFQ**

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Chinese and North Korean POWs were released during Operation *Comeback* after Korean War armistice was signed

National Air and Space Museum

Asia
Facing Interesting Times

By DEAN CHENG

Since the earliest days of the Republic, the United States has had vital interests in Asia. Indeed, the ink was barely dry on the Treaty of Paris, which formally recognized American independence, before the Nation was establishing its own trade links there. The arrival of the U.S. merchant ship *Empress of China* in 1784 inaugurated what today is $900 billion in trade between the United States and Asia.[1] The opening of Japan in 1854 and the Open Door policy half a century later were both intended to ensure that American interests in the region were known and respected. Consequently, American security concerns have long included Asian contingencies. Well before the battles of the Pusan Perimeter and the Chosin Reservoir, U.S. forces had operated on the Korean Peninsula.

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Today, American security concerns in Asia are often associated with the potential for conflict in the Taiwan Straits or on the Korean Peninsula. In both cases, substantial American forces are arrayed and prepared to engage in open, high-intensity warfare.

These are not, however, the only two flashpoints. Indeed, Taiwan and Korea are part of a larger set of rifts and faults that underlie most of the East Asian security landscape. At the same time, the growing economic interconnections between China and the region, as well as with the United States, result in a constantly shifting kaleidoscope of rivalries and accords among the various states. Unlike the confrontation between the North Atlantic Treaty Organization (NATO) and the Warsaw Pact, East Asia is far more complex, embodying not only ideological conflicts rooted in the Cold War, but also historical animosities, unsettled borders, internal instabilities, and the absence of regional institutions that might ameliorate some of the ensuing tensions.

Last Frontier of the Cold War

The Cold War in Asia was in many ways more extensive than that in Europe. Of the four nations divided ideologically at the end of World War II, three (China, Korea, and Vietnam) were in Asia. The United States fought major wars in two of them. The collapse of the Soviet Union did not neatly resolve the Asian ideological divides, despite being heralded as the end of the Cold War. Indeed, two decades after the fall of the Berlin Wall, the Cold War remains a reality in Asia.

This is expressed in several ways. One is the continued division of both the People's Republic of China (PRC) from Taiwan and North Korea from South Korea, enforced by the deployment of substantial militaries by all sides. On the Korean Peninsula, the physical divide of the Demilitarized Zone reflects the political and ideological gap separating Pyongyang and Seoul.

In the case of the PRC and Taiwan, although the two have become much more closely aligned economically, military and political tensions remain. Beijing continues to oppose any political interactions by third parties with the government in Taipei, blocking their membership in various regional and international organizations. It was not until 2008 that Taipei allowed direct commercial flights between the two sides of the

straits. Meanwhile, the issue of U.S. arms sales to Taiwan continues to roil the trilateral relationship among Beijing, Taipei, and Washington.

Another aspect is the continued one-party rule of Asian communist parties, including in North Korea, the PRC, and the Socialist Republic of Vietnam. These parties survived the fall of the Soviet Union because they did not derive their legitimacy from Soviet support. This was in contrast with Eastern Europe, where the ruling parties were installed by Moscow and the advancing Red Army. Consequently, whereas the collapse of the Soviet Union deprived the leadership of the Warsaw Pact states of their most important support, the same was not true for the Asian communist parties.

This legitimacy was reinforced in several of these countries by independent efforts by the ruling communist parties to reform their economic systems and improve the national standard of living. In both Vietnam and China, the ruling parties had commenced far-reaching economic reforms well in advance

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Asian communist parties survived the fall of the Soviet Union because they did not derive their legitimacy from Soviet support

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of Mikhail Gorbachev's *perestroika*. This has sustained popular support for the ruling parties; as long as the economic benefits continue to accrue, the party's grip on power is unlikely to be significantly challenged. Only North Korea has adhered closely to communist ideology, refusing to end rural collectivization or shift toward a more consumer-based economy.

Economic reform has not been accompanied by political reform in these nations, however, as the various Asian communist parties have evinced little interest in loosening their political controls. Moreover, this has been true whether there has been substantial economic reform (for example, the PRC) or minimal efforts (North Korea). The prospects of reconciling with their opposite numbers are therefore greatly reduced, since both Taiwan and South Korea are not only market economies, but also vibrant democracies. This means that the prospect of ideologically based conflict, including open resort to the use of force, remains a real possibility.

History Remains an Open Book

Ideology is not the only potential cause of conflict in East Asia, however. Indeed, in many cases ideology merely provided an *additional* overlay to longstanding historical animosities. Taiwan, for example, was a source of regional tension long before Chiang Kai-shek evacuated the Nationalist government there in 1949. It first became a territorial issue for Chinese central authorities in 1895, when the Qing Dynasty was compelled to cede it to Japan after losing the first Sino-Japanese War.

That war, in turn, was only part of a centuries-long rivalry between China and Japan to be the preeminent power in Asia. Earlier conflicts included the attempted invasions of Japan by Kublai Khan in the late 13th century and the Japanese invasion of Korea (then a tributary state of China) in the late 16th century. The subsequent Sino-Japanese War of 1937–1945 further aggravated the mutual bitterness by adding a massive butcher's bill to the relationship. The post–World War II Sino-Japanese competition, therefore, not only arose from rival economic and political systems, but also reiterated the general ongoing enmity between the states.

Meanwhile, historic suspicions between Thais and Khmers found renewed expression in 2003, when Cambodian crowds sacked the Thai embassy in Phnom Penh. While it is likely that the riots had roots in a combination of factional politics and ongoing Thai-Cambodian commercial negotiations, it is noteworthy that the proximate reason for the rioting was a Thai television personality's claim that Angkor Wat had been stolen by Cambodia from Thailand.

Nor is history an issue only when raised by ideological rivals. Indeed, throughout most of the Cold War, competitions *among* the communist Asian states were as likely to lead to the use of force as conflicts between capitalist and communist Asian states. Wars among the Asian communist powers included not only the 1979 Chinese invasion of Vietnam, but also the earlier Vietnamese invasion of Cambodia (itself partly in response to Cambodian attacks on Vietnam), as well as the only incidence of open armed conflict involving two nuclear states: the Sino-Soviet border clashes of 1969. In each case, historical animus likely contributed to mutual suspicions.

The Sino-Vietnam War of 1979, for example, has been attributed to Vietnamese

alignment with the Soviet Union, which threatened China with encirclement. From the Vietnamese perspective, however, it only underscored China's longstanding aggressive stance toward Vietnam, dating back over two centuries. Similarly, there is strong mutual dislike between Khmers and Vietnamese, with roots that long antedate the rise of Pol Pot and the Khmer Rouge.

Finally, Japanese historical revisionism, such as their depiction of the World War II "Greater East Asia Co-Prosperity Sphere" as an attempt to benefit Asia, as well as Japanese treatment of the issue of "comfort women" and the Nanking Massacre, have directly affected regional perspectives toward Japan. Japanese politicians' visits to the Yasukuni shrine, where a number of war criminals are interred, regularly arouse significant regional ire and the lodging of diplomatic protests. The Japanese decision to dispatch minesweepers to the Persian Gulf in 1991 after the first Gulf War was opposed in no small part because many in the region thought it might presage a more robust Japanese foreign policy. Similarly, it was not until 2007–2008 that Japanese and Chinese warships engaged in port visits for the first time.

In this light, it is not surprising that the end of the Cold War did not abate tensions in Asia. Rather, it merely removed the ideological component from some of the complicated relations within the region that draw upon age-old prejudices and hatreds.

Internal Stability Not a Given

Further complicating the Asian security dynamic are extensive underlying tensions. Some of these are rooted in ethnic, religious, and other differences, as many Asian states are extremely heterogeneous. In addition, many governments, especially in Southeast Asia, are confronted by questions of their legitimacy, especially from ethnic and religious minorities who often feel underrepresented. The combination of factors means that internal stability in many states should not be assumed.

There is, for example, a range of ethnic and religious separatist movements, as various tribes and groups seek autonomy if not outright independence. Some of the better known separatist groups are in the PRC, including the Uighurs (the East Turkestan Islamic Movement) and the Tibetans. Beijing has refused to countenance any expansion of autonomy for such groups—and its intransigence on the Taiwan issue may well be rooted

in fears that this would encourage other separatists.

The PRC is hardly alone in confronting such movements, however. Other states that have active separatist groups or domestic insurgencies include Burma (Karen, Shan, and other ethnic groups), Indonesia (Free Aceh Movement, Free Papua Movement), the Philippines (Moro Islamic Liberation Front), and Thailand (Pattani United Liberation Organization, among others).

Another potential source of domestic instability involves the substantial ethnic Chinese populations in many Southeast Asian nations. These were described by one Thai king 80 years ago as the "Jews of the East." Like the Jews of medieval Europe, ethnic Chinese were historically often prevented from owning land, deliberately segregated and discriminated against, and channeled into entrepreneurial and financial businesses. As a result, in the postcolonial environment, many became cornerstones of the region's business class.

Today, ethnic Chinese wield economic clout substantially in excess of their proportion of the population. Despite constituting only a quarter of the population or less in most Southeast Asian states (with the exception of Singapore), they control the bulk of listed companies in local stock markets. According to one account in regard to these stock markets, they control "more than 80% in Thailand and Singapore, 62% in Malaysia, about 50% in the Philippines. In Indonesia,

they control more than 70% of corporate wealth—although some dispute this figure."[2] Several of the largest Thai corporations, including Charoen Pokphand, for example, were founded and are still headed by ethnic Chinese Thais.

This substantial economic presence has led to significant tensions between the ethnic Chinese and other ethnic population groups. As a result, many states have pursued efforts to promote "native" populations preferentially. Ethnic Chinese have had to sacrifice certain rights if they wish to be seen as citizens. Simultaneously, there has been a direct effort to assimilate ethnic Chinese through such measures as requiring the adoption of non-Chinese surnames. In Thailand, these measures have been sufficiently thorough as to make it difficult to estimate exact percentages of ethnic Chinese.

Such measures, however, have proven only partially successful in leading to actual assimilation. In times of economic or political stability, the ethnic Chinese population has often nonetheless been the target of violence.

the end of the Cold War merely removed the ideological component from some of the complicated relations within the region that draw upon age-old prejudices and hatreds

M–48 Patton tank moves through jungle in central highlands of Vietnam, June 1969

Indeed, as recently as 1998, ethnic Chinese fled Indonesia in the face of anti-Chinese riots.

One major unknown is how the PRC may react in the future to anti–ethnic Chinese pogroms. Historically, Beijing has protested but refrained from directly intervening, in part because it lacked the wherewithal. But that situation is evolving with the expansion of the People's Liberation Army. As important, although the ethnic Chinese in these nations are not Chinese citizens, many of the most financially successful are significant investors in the PRC. Charoen Pokphand,

power projection platforms, including an aircraft carrier, could be justifiably employed safeguarding Chinese assets and lives (including a noncombatant evacuation operation).

Few Institutions, Little Identity

Not surprisingly, given the cross-cutting concerns and issues that have riven the region, as well as the continuing impact of divergent ideologies and political systems, there is far less regional, transnational, or pan-regional identity in Asia than in Europe. In addition to the historical factors, pan-Asian attitudes are vitiated by the relatively recent independence of many

there is far less regional, transnational, or pan-regional identity in Asia than in Europe

for example, was one of the first companies to invest in China when it initially opened to the West in the late 1970s. Furthermore, the region has become a major trading partner with the PRC, including increasing direct investment by Chinese firms and investors. Whether Beijing would stand idly by if its resources or assets were to be jeopardized by domestic unrest in these countries, consistent with its historical policy of noninterference in foreign domestic affairs, is unclear. Chinese

of the states in the region. Nations that have only recently gained their independence are hardly likely to subsume their hard-won autonomy into a larger regional framework. Unlike Western Europe, nationalism is associated with international recognition and respect, rather than the massive bloodletting of 1914–1945.

Moreover, many of the initial steps that undergirded the European Union have not been taken in Asia. There is, for example, no counterpart to the European Coal and Steel

Community, which was created in 1951 and established a Western European common market in those two commodities. It was the first transnational European organization. It both provided a forum for multilateral discussion of economic issues and acclimatized the leading elites to the idea of mutual coordination. It is often credited as the intellectual and legal forefather to the European Economic Community, itself the basis for the European Union. By contrast, there are few effective institutions in Asia. Nations tend to coalesce on specific issues or in response to particular crises, only to fragment once the moment has passed. There is little around which to create a sense of greater Asian identity.

There is, for example, no Asian common market comparable to the early stage of the European Economic Community. The closest counterpart is the Association of Southeast Asian Nations (ASEAN), which has established an ASEAN Free Trade Area. Rather than eliminating tariffs among members, however, and presenting a single common tariff with external trade partners, there is instead a Common Effective Preferential Tariff, wherein member states pledge to keep tariffs on each other's goods within a band of 5 percent or less. Meanwhile, tariffs for goods originating outside ASEAN are set at the discretion of each state.

The absence of political integration, however, has not been an obstacle to greater economic connectivity. Indeed, Asian Development Bank statistics indicate that intraregional trade has grown in Asia at a pace comparable to that of intra-European trade, despite the absence of pan-regional institutions.

Regional security is even more fragmented. There is nothing comparable to NATO; that is, there is no single security-focused entity that covers most or all of East Asia. While a number of subregional security organizations have been established, their effectiveness has been limited. In Northeast Asia, for example, despite the security concerns associated with four nuclear powers (the United States, Russia, PRC, and North Korea) and a variety of tensions, no formal security mechanism for the region has ever evolved. Some had hoped that the Six-Party Talks, originally established to deal with North Korean proliferation, might evolve into a more permanent, wide-ranging regional security body. The failure of the talks to manage Pyongyang's actions suggests that such hopes were probably misplaced.

U.S. Navy (Michael Moriatis)

Royal Malaysian Air Force MiG–29 lands behind F/A–18D at Kuantan Air Base during exercise Air Warrior

A number of security-related organizations have arisen in Southeast Asia, but their track records have been even more mixed. The Southeast Asia Treaty Organization, for example, was established in 1954 and envisioned as an Asian counterpart to NATO. It was always much weaker, however, with no political counterpart to the North Atlantic Council, much less the various NATO joint commands and standing forces drawn from its signatories. There was not even an agreement that an attack upon any member would constitute an attack against all the others. The organization was formally dissolved in 1977.[3]

A more successful security entity is the Five Power Defence Arrangements (FPDA) system. Created in 1971, the FPDA builds upon a series of bilateral agreements among Australia, New Zealand, the United Kingdom, Malaysia, and Singapore to foster multilateral security consultations aimed at deterring aggression against the latter two states. Unique among Asian security mechanisms, the FPDA has an operational component in the form of the Integrated Area Defence System, centered on the Royal Malaysian Air Force Butterworth airbase. It also has no formal American participation.

It is notable, however, that the members of the FPDA avoid the term *alliance*, emphasizing instead the consultative nature of the various arrangements. This is rooted in part in a desire to avoid excessively antagonizing Indonesia, one of the original inspirations for the agreements. Moreover, despite the agreements, actual cooperation between Malaysia and Singapore has always been vulnerable to the vagaries of their relations. Malaysia, for example, refused to allow any Singaporean army units to exercise on its territory from 1971 until late 1989.

Instead of establishing region-wide institutions for resolving disputes or realizing greater security cooperation, most of the Asian multilateral organizations are formalized, regularized meetings of senior government officials. One of the most visible, the Asia Pacific Economic Cooperation entity, hosts an annual regional summit of its 21 "member economies." Yet it has steadfastly refrained from even labeling itself as an organization, simply describing itself as a forum. Its Web site specifically notes that it has "no treaty obligations required of its participants," with all commitments being nonbinding. Similarly, the ASEAN Regional Forum, with 27 members, and the ASEAN + 3 talks, which brings together the 10 ASEAN member states with the PRC, Japan, and South Korea, mainly serve as opportunities for dialogue.

As a consequence of this lack of regional institutionalization, there is no real "Asian" counterpart when dealing with the region. Instead, any response to a crisis will first entail individual negotiations with various states, often on an ad hoc basis. As important, especially in the security context, it means there are distinct limits to interoperability, as Asian forces often have little experience interacting.

> *instead of region-wide institutions for security cooperation, most Asian multilateral organizations are formalized, regularized meetings of senior government officials*

Regional Stabilizer

Instead of allying with each other, much of Asia prefers Washington as the guarantor of regional stability. Moreover, if the United States is not always the most trusted nation, it is generally the least *dis*trusted. The result has been a series of individual bilateral alliances, coupled with a general willingness to rely on the United States to preserve the regional balance of power.

In terms of formal alliances, there is a "wagon wheel" of bilateral agreements with the United States at the hub. These include:

■ Mutual Defense Treaty between the United States and the Republic of the Philippines (1951)
■ Republic of Korea–U.S. Mutual Defense Treaty (1953)
■ Treaty of Mutual Cooperation and Defense between the United States and Japan (1960)
■ Security Treaty among Australia, New Zealand, and the United States (1951)
■ Southeast Collective Security Treaty, or Manila Pact (1954).

Other U.S. security arrangements that supplement these treaties include the Thanat-Rusk Agreement with Thailand (1962), the Taiwan Relations Act (1979), and the Strategic Framework Agreement with Singapore (2005). This system of alliances and understandings was largely developed in the early years of the Cold War, but continues to be the main structure for regional security.

U.S. Air Force (Jerry Morrison)

Secretary Gates briefs press after trilateral meeting with counterparts from Japan and South Korea in Singapore

Compared with major regional powers such as Japan or China, the United States offers significant advantages as the preserver of the overall regional balance of power. Given the overlapping demands and claims involving just about every Asian state, no regional power is likely to be seen as an honest broker. By contrast, Washington has no territorial aspirations in the region, and much less historical baggage than any of the major Asian states. At the same time, unlike any grouping of smaller states such as Malaysia, Thailand, or Indonesia, the United States also possesses a range of instruments of power, making it less subject to intimidation by major regional powers such as the PRC. Finally, by seeking to preserve the status quo and ensure that no single Asian power would come to dominate the region, the United States has maximized the opportunities for the majority of Asian states, at minimal cost to them. In essence, America has freed local resources for "butter" that would otherwise have gone toward "guns."

In particular, the U.S. alliance with Japan has served these functions, while reassuring the region. On the one hand, the security commitment from the United States has obviated the necessity for Japan to create its own conventional or nuclear deterrents, thereby allowing it to maintain its "peace constitution," which formally renounces war as an instrument of national policy. Both Japanese and Asians generally would prefer to see Japan continue to operate under such strictures. At the same time, the U.S. alliance constitutes what one American Marine general termed the "cork in the bottle" on any Japanese rearmament. In essence, Japanese military expansion would be rendered visible because of the close security relationship with the United States.

This does not mean, however, that the region necessarily shares the views of Washington on regional policy beyond the desire for stability. For example, it would be a mistake to assume that the various states view Chinese economic growth as necessarily detrimental to their own. Indeed, many of the regional economies have become suppliers of raw materials and intermediate inputs to the PRC economy. In addition, China has been expanding its imports of industrial goods, especially in machinery and transport equipment, to help sustain its own exports to the rest of the world.[4] Only for China have the U.S. and European

Union economies become more prominent over the past 15 years. For states such as the Republic of Korea, the Philippines, Singapore, and Thailand, the United States and the European Union have been progressively displaced as an export destination by the PRC (measured as a percentage of total exports). Thus, in the Asian context, the PRC is increasingly seen as a partner to local economies, as well as a competitor.

Implications for the United States

Given these undercurrents within the Asia-Pacific region, what are the implications for American policymakers? Several important conclusions might be derived from this overview.

First, there is no "Asia." While there is a geographical region, there is no "Asian" perspective on issues. Instead, each nation holds its *own* view, examining issues in light of its *own* interests. Consequently, one cannot craft a single message or expect a unified perspective, whether on developments on the Korean Peninsula or trade negotiations. This means there will be competing demands on policymakers as they seek to forge an American policy; what will be popular in Seoul is unlikely to resonate in Kuala Lumpur or Bangkok. Picking and choosing policies that maximize regional support, while still attaining U.S. objectives, will require regular displays of Solomonic wisdom.

Second, knowledge of national histories matters. In light of the mutual suspicions that permeate the region, and in the absence of security institutions, recognizing that a given policy is as likely to alienate neighboring states as to please them is essential. Thus, where exercises are held, and with whom, is likely to be the focus of much negotiation. As important, every state is likely to garner American support for their position—or at least make it appear they have.

Another aspect of the knowledge of local conditions and histories is the need to recognize that, while most of the *nations* in Asia are quite young, they come from a number of ancient *civilizations*. This makes for a volatile combination; the people have a rich history often dating back to the time of Christ or earlier, but at the same time, they may have obtained their independence from Western colonial powers only in the 20th century. Consequently, these nations tend to have a strong sense of history, as well as a great yearning to be treated with respect.

If the region desires U.S. presence to maintain a balance, for the most part it is not interested in taking sides with the United States (except insofar as it relates to their own specific national interests). More to the point, the region does not view any single state as an enemy—least of all the PRC. Indeed, China is a competitor on many levels, especially economically, but it is also a partner, including economically. Therefore, regional support for the United States in any PRC–U.S. confrontation cannot be assumed.

Finally, the various undercurrents outlined earlier are likely to be exacerbated if the current economic downturn proves extended. Internal instability, as outlined above, has often been muted by expanding national economies, allowing leadership groups to buy off opponents. In the event of a protracted global economic downturn, however, and given the reliance of many Asian economies on exports to drive their economic expansion, the combination is likely to lead to growing discontent. Worse, some studies suggest that Asian recessions last longer and hit harder. This will increase domestic instability and likely exacerbate interstate tensions.

The U.S. role as stabilizer and ally makes managing the various relationships both more essential and more difficult. In Asia, U.S. policymakers and policy *implementers*, including U.S. Pacific Command, are likely to confront "interesting times." **JFQ**

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United Arab Emirates Mirage 2000 fighter
over Southwest Asia

U.S. Air Force (Aaron Allmon)

Future Gulf War

Arab and American Forces against Iranian Capabilities

By RICHARD L. RUSSELL

Gulf Arabs are increasingly taking measure of Iran's capabilities to wage war. Military power is relative, not absolute, and to gauge Iran's capabilities to wage war and threaten the Persian Gulf, one must compare Iran's power against that of its regional rivals. A rough net assessment of strategies and military forces in the Gulf needs to weigh Iranian conventional military power—both in its regular military and Revolutionary Guard forces—against the conventional militaries of Saudi Arabia, the other Arab Gulf states, and the United States. By this scale, Arab and American forces are heavier than Iranian capabilities. But because they are, Iran is likely to turn to its time-tested unconventional ways of war to exploit Arab Gulf state and American vulnerabilities in future conflicts.

Long on Hardware, Short on Power

At first glance, the Arab Gulf states look well heeled militarily because they have purchased the most modern and capable weaponry. The United States and Europeans have been eager to sell their military wares for top dollar to the Gulf states. The Saudis, Kuwaitis, and Omanis spend up to 10 percent of their gross domestic product on their militaries, which amounts to about $21 billion, $4 billion, and $2.7 billion, respectively.[1] The Arab Gulf state forces since the 1990 Iraq war also have increased in size. A decade ago, for example, Saudi Arabia and Kuwait could only field about 5 divisions and 215 combat air-

craft, but today they can field 8 divisions and 430 combat aircraft.[2]

The Gulf Arabs have some of the most sophisticated armaments in the world. The United Arab Emirates (UAE), for example, has purchased 80 advanced block 60 F–16s—which are more sophisticated than the block 50 F–16s in the U.S. Air Force—that are optimal for penetrating deeply into Iranian airspace to deliver munitions against ground targets.[3] Saudi Arabia in 2006 agreed to buy 72 Eurofighter Typhoon combat aircraft for $11 billion and to spend $400 million on upgrading 12 Apache AH–64S attack helicopters, while Kuwait has bought 24

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Apache Longbow helicopters and Bahrain has ordered 9 UH–60M Black Hawk helicopters.[4] The United States also wants to sell the Saudis and the UAE Joint Direct Attack Munition (JDAM) kits that convert 500- and 2,000-pound gravity bombs into all-weather precision strike weapons guided by satellites. The George W. Bush administration proposed selling the Saudis 900 kits and the Emirates 200 JDAM systems.[5]

There is less than meets the eye to Gulf Arab military power, however. Governments have acquired impressive weapons holdings, but they are too often for show and not for waging modern warfare. As Anthony Cordesman and Khalid Al-Rodhan assess, the emphasis on acquiring the shell of military capability, rather than the reality, is partly the "result of a tendency to treat military forces as royal playgrounds or status symbols, partly a lack of expertise and effective military leader-

General Petraeus, commander, U.S. Central Command, with Saudi Arabian Prince Khalid bin Sultan in Riyadh

ship, and partly a result of the fear that effective military forces might lead to a coup."[6]

Gulf Arab conventional forces are impressive for military parades, but would be less formidable in an actual clash of arms. The UAE, for example, is greatly increasing its equipment and weapons holdings with large arms purchases, but the military suffers from too many diverse weapons that are better suited for the garrison than expeditionary missions, and its readiness, manpower, sus-

tainability, and maneuver capabilities are not keeping pace with arms purchases.[7] Michael Knights notes that Saudi Arabia's armed forces in particular suffer from a "massive overemphasis on procurement of high technology and serious underemphasis on manpower issues, personnel selection, training, and maintenance."[8]

The reasons for the inability of the Arab Gulf states to field effective militaries are wide, deep, numerous, and elude any quick fixes. Kenneth Pollack astutely observes, "Four areas of military effectiveness stand out as consistent and crippling problems for Arab forces: poor tactical leadership, poor information management, poor weapons handling, and poor maintenance. These complications were present in every single Arab army and air force between 1948 and 1991."[9]

The Gulf Arabs are flush with high-ranking officers and prestige, but short on the

noncommissioned officers who make modern militaries run. Their education systems do not produce technically oriented men willing or able to do the grunt work on which effective military organizations depend. The Arab Gulf states are forced to rely excessively on foreign militaries, contractors, and expatriates to run their militaries. Persian Gulf expert Simon Henderson notes that "several conservative Arab Gulf states, lacking trained manpower, rely heavily on foreign contract soldiers and

advisors, including technicians and pilots, to provide professionalism as well as vital skills, and to maintain a high level of combat readiness," and the UAE "is considered the state most dependent on foreign support. About 30 percent of its service personnel are expatriates."[10] These foreign expatriates are akin to mercenaries who make good money in peacetime but would likely be the first to flee in a major regional military conflict.

Arab militaries in general operate under stringent political constraints that profoundly hamper their effectiveness. It is not much of an exaggeration to say that their first, second, and third missions are to protect the regime from *internal* threats, while the lagging fourth mission is to protect from external threats. The Arab regimes have created redundant security and military organizations to complicate and deter military coups. But this makes for a lack of unity in military command and control during war with an external adversary. Arab forces suffer from heavily centralized decisionmaking authority out of concern of coups, which severely hampers battlefield responses and the ability to respond rapidly

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Gulf Arab conventional forces are impressive for military parades, but would be less formidable in an actual clash of arms

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to changing battlefield conditions. Moreover, they lack intraservice cooperation and suppress tactical independent initiative.[11] Arab militaries also have strong propensities to promote leaders and commanders on the basis of family, tribal, and political affiliations rather than on military competence.

The Arab Gulf states do a poor job using technology software to integrate weapons systems hardware to gain synergetic effects on the modern battlefield. The Saudi air force and air defense force capabilities, for example, are not keeping pace for future conflict because they need a modern command, control, communications, computer, and intelligence battle management system to replace the system that the United States withdrew from Prince Sultan Air Force Base after the Iraq war.[12] Likewise, the UAE air force, typical of Gulf Arab militaries, has a "knights of the air" mindset, and it lacks air control and battle manage-

ment systems and has limited training for integrating airpower with ground force operations.[13] These tendencies are in marked contrast to the Israeli approach to war, which Arabs are fond of rhetorically railing against. As Anthony Cordesman observes, "While most Arab states focus on the 'glitter factor' inherent in buying the most advanced weapons systems, Israel has given the proper weight to battle management, sustainability, and systems integration."[14]

The Arab Gulf states, despite living in a dangerous neighborhood, have remarkably little recent battlefield experience. They have largely stayed out of the fray and let others fight in the last three Gulf wars. The Omani army, for example, has not fought in any major conflict for several decades.[15] The Arab Gulf states shied away from providing peace-keeping forces to Iraq after Saddam's ouster, with the Saudis insisting on all sorts of conditions on participation, especially that their forces not be under American command, while discussions about UAE troops to protect Iraq's southern oilfields also never came to fruition.[16]

The Arab Gulf state military performances in the 1990–1991 war in particular were on balance less than distinguished. The Kuwait military was outgunned and outmanned and easily overwhelmed by invading Iraqi forces in 1990, and its ground and air forces collapsed. The Saudis and Qataris had the largest engagement of all Arab forces during the Gulf War, but their performance was lackluster. The Iraqis launched a major attack against Saudi Arabia prior to the coalition ground invasion of Kuwait and captured the Saudi town of al Khafji with one mechanized division, and the Saudi battalion there fled. The Iraqis had moved their division into attack position at night to avoid detection by American intelligence, the limits of which the Iraqis had learned in receiving American intelligence on Iran during the Iran-Iraq war.[17] Saudi and Qatari forces eventually retook the city, but only after launching two amateurish counterattacks; they had no combat experience and only marginal training, with no plan for communication between Saudi and Qatari forces and no plan for direct artillery or air strikes, which is standard procedure for any professional military.[18] In the reconquest of Kuwait, Arab forces did little more than conduct an administrative procession into Kuwait City after the Americans and British secured it.

The Gulf Arabs have comparatively more combat experience in the air than on the ground. Saudi aircraft supported U.S. Airborne Warning and Control System aircraft and patrolled the "Fahd" air defense line during the 1980–1988 Gulf war and destroyed at least one Iranian aircraft.[19] In the 1991 Gulf War, Saudi aircraft mounted 1,656 offensive sorties into Kuwait and Iraq to include 1,133 strike missions, 523 close air support missions, as well as 118 reconnaissance missions. Bahraini aircraft flew 294 combat missions in 1991, and Qatari Mirage F–1s and armed helicopters supported ground operations in the Khafji battle and in the liberation of Kuwait, while UAE aircraft also mounted operations in Kuwait and Iraq.[20] Saudi Arabia could fairly claim a

in the reconquest of Kuwait, Arab forces did little more than conduct an administrative procession into Kuwait City after the Americans and British secured it

U.S. Air Force (Tommy Avilucea)

Iraqi Security Forces mark withdrawal of U.S. forces from Iraqi cities

military achievement in air-to-air battle during the 1990–1991 Gulf War. One Saudi F–15C shot down two Iraqi F–1 aircraft that had been attempting offensive airstrikes in the Gulf.[21]

The Arab Gulf states have shown little to no grit or resolve for joint military action. The United States long pushed the Gulf Cooperation Council (GCC) for a common integrated air defense since the council's

founding in 1986, but to no avail. The GCC countries, meanwhile, buy major weapons systems without coordinating with Arab Gulf states and have little to no interoperability or common doctrine. The coordination and integration problems are so bad that Bahrain's F–16 combat aircraft cannot readily operate from UAE air bases.[22] These realities have been strongly reflected in the steady decline of the GCC, which decided in 2005 to abolish its joint military unit called Dir' Al-Jazeera (or Peninsula Shield) some 20 years after its creation because of Saudi and Qatari rivalry and because of the force's lackluster capabilities.[23]

On the other side of the scale, Iran's military is impressive in quantity but underwhelming in quality. Its forces are composed of some 545,000 troops.[24] In contrast, Saudi Arabia, Iran's largest regional rival, has some 223,500 active duty troops.[25] The small Arab Gulf states have significantly less manpower: Bahrain has 8,200, Kuwait has 15,500, Oman has 42,600, Qatar has 11,800, and the UAE has 51,000 active duty strengths.[26] Iraq's military is still taking shape and is preoccupied with battling internal security threats.

The bulk of Iran's inventories are American-built weapons bought before the 1979 revolution and a mix of Soviet and Chinese weapons that are qualitatively inferior to the modern American and Western weapons systems in the Gulf Arab inventories. Some of the most technologically sophisticated aircraft in Iran's inventory are about 24 Iraqi Mirage F–1 combat aircraft.[27] During the 1991 coalition air campaign against Iraq, most of Iraq's pilots fled in their aircraft to Iran rather than face American and British airpower. It is doubtful, however, that the Iranians are maintaining these F–1s in good repair and order. The Iranians have extraordinary difficulty sustaining their military equipment due to a lack of spare parts and trained mechanics.

Tehran's forces had more combat experience in mobile conventional warfare than their Gulf Arab rivals, but that experience is rapidly aging. The Iranians who fought on the frontlines during the Iran-Iraq war from 1980 to 1988 are retired. The majority of the population, moreover, is under 25 years of age and thus has no personal memory of the Iranian Revolution. In fact, the "vast majority of the combat-trained labor power Iran developed during the Iran-Iraq War left military service by the mid-1990s. Iran now has a largely conscripted force with limited military training and little combat experience."[28]

What to Expect

A rough weighing of Gulf Arab military capabilities against those of Iran has to take into account a variety of conflict scenarios involving air, naval, and ground forces. The Arab Gulf states likely would do reasonably well against the Iranians in air-to-air combat. Although Gulf Arab ground forces capabilities are more limited than airpower capabilities, the Iranians too suffer from severe ground force projection problems. Iranian ground forces also would be vulnerable to Arab Gulf state air attack.

The tight geographic confines in the Gulf would allow the Iranians to make short dashes with combat aircraft to catch Gulf Arab air defenses and air forces unawares and drop ordnance on major cities and military bases. But the Arab Gulf states would be able to put up their guards to marshal combat air patrols to complicate Iranian follow-on air attacks. Iran's combat aircraft, moreover, are aging, and it would be difficult for the Iranians to keep them operational for a prolonged air campaign against Arab neighbors. On the other hand, the Arab Gulf states with F–15, F–16, and Tornado combat aircraft have more capabilities to strike against Iranian targets than Iran has to strike the Arab Gulf. The Iranians are trying to shore up this disadvantage by getting Russian help to modernize their ground-based air defenses.

Iran's combat aircraft are aging, and it would be difficult to keep them operational for a prolonged air campaign against Arab neighbors

The Arab Gulf states also have naval forces that could bombard Iranian ports, oil facilities and platforms, and naval assets. The UAE has a longstanding dispute with Iran over the sovereignty of three islands—Abu Musa, Greater Tunb, and Lesser Tunb—near tanker routes to the Strait of Hormuz, which were seized by the Shah of Iran after the British withdrew from the Gulf in the early 1970s. The

Royal Saudi air force E–3 at Tinker Air Force Base, Oklahoma

U.S. Air Force (Margo Wright)

islands were militarily occupied by the Iranians in 1992 when Tehran claimed that they were an "inseparable part of Iran."[29] The UAE navy could try to reassert control of the disputed islands. By the same token, the Arab Gulf states have coastal facilities that would make attractive targets for Iranian attacks. They all have tanker-loading facilities, as well as power and desalination plants along the Gulf coast.[30]

The Arab Gulf states have more sophisticated and modern ground force equipment than Iran, but the Iranians have the advantage in the number of troops they could field for mobile-conventional warfare. The Iranians in the future could have a border dispute or political crisis with Kuwait and could threaten that country. Kuwait could turn to its GCC fellow members for help, but as previously discussed, the GCC is more political show than military substance. Iranian troops motivated by the spoils of war lying in Kuwait and the Arab Gulf states might have more grit in battle than outnumbered and pampered Gulf state ground forces. Arab Gulf states could leverage airpower to intimidate and deny Iran's air force from protecting the skies over its ground forces and their avenues of advance into Arab territories.

Gulf Arab political equities would also undermine concerted military action against Iranian ground forces. Kuwait, for example, might be reluctant to host its Arab neighbors, especially Saudi forces, out of fear of never being able to get rid of them after the crisis with Iran. Kuwait might worry that calling in Arab ground forces would precipitate an Iranian attack rather than dissuade it. The Kuwaiti royal family made such a calculation when it decided against putting its armed forces on alert in the face of the buildup of Iraqi forces across the border in July 1990. The Kuwaiti army of some 16,000 troops was not fully mobilized on the eve of Iraq's invasion in keeping with the royal family's attempt not to provoke Iraq.[31] The Kuwaitis disastrously misjudged that a military alert would provoke Saddam rather than deter him.

Weighing U.S. Forces

Iran knows well from past warfare in the Gulf that it has to steer clear of American conventional forces. During the Iran-Iraq war in April 1988, for example, while the U.S. Navy was escorting merchant and tanker ships in the Gulf to protect them from Iranian attacks, the Iranians laid a minefield that struck an American ship and wounded 10 Sailors. The United States

retaliated in Operation *Praying Mantis* and attacked Iranian coastal facilities. The Iranians tried to challenge the American Navy surface ships but quickly lost two frigates and four other vessels.[32] The Iranians watched in awe as American and British forces in 2003 dispatched Saddam Hussein's regime in 3 weeks, a feat that Iran could not achieve in 8 years of war with Iraq from 1980 to 1988.

The Iranians are apt to stick with mine-laying proficiencies in future war to counterbalance American surface ship superiorities. They no doubt have learned from Iraq's employment of mines against American and coalition forces during the 1990–1991 Gulf War when the Iraqis laid about 1,300 mines, some of which hit the helicopter carrier USS *Tripoli* and the cruiser USS *Princeton*. These experiences showed the Iranians that multi-million-dollar American warships could be threatened and even rendered inoperable by mines costing no more than a few thousand dollars.[33]

The Iranians have noticed the vulnerabilities of American warships operating in brown waters to suicide bombs at ports. They have seen how the al Qaeda bombing

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in future Gulf warfare, the Iranians could recruit and train a suicide bomber cadre for explosive-laden small craft and jet skis

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of the USS *Cole* in 2000 cheaply used a boat-delivered suicide bomb to kill 17 Sailors and nearly sink a billion-dollar warship. Iran's Revolutionary Guard navy and operatives would be keen to replicate such an operational success against American ships anchored or under way in waters around Bahrain, the UAE, Oman, Kuwait, or Saudi Arabia to scare off American port visits and transit operations.

The Iranians could easily adopt suicide bombers to "swarm" naval warfare. As John Arquilla explains:

The basic vision of this new kind of naval warfare consists of a swarm of small drone craft—something even smaller than a boat, perhaps the size of a Jet Ski, but one chock-full of high explosives. Imagine a number of these remote-controlled craft coming at a traditional

warship—a destroyer, cruiser, or even an aircraft carrier. The larger the number of drones, the greater the chance some will get through, sinking or seriously damaging expensive naval vessels at little cost, and virtually without risk to one's remote pilots.[34]

The Iranians have proven adept at recruiting and training suicide bombers similar to those that Hizballah has thrown against American forces in the past. In future Gulf warfare, the Iranians could recruit and train a suicide bomber cadre for explosive-laden small craft and jet skis.

The Iranians would complement mining and small boat operations with submarine warfare. The Russians have equipped Iran's navy with diesel submarines to make up for its formidable shortcomings in surface ships against American naval forces. Moscow sold Tehran three *Kilo*-class submarines, which are quiet, small, and ideal for operating in shallow Gulf waters with weapons loads of a mix of 18 homing and wire-guided torpedoes or 24 mines.[35] And the Iranians are diversifying their submarine and irregular warfare capabilities and have purchased at least three one-man submarines designed for covert demolition and infiltration operations. They have also obtained midget submarines from North Korea.[36] Moreover, the Iranians claim to be producing their own submarines. Tehran announced in November 2007 that it had launched its second indigenously built *Ghadir*-class submarine, which it claimed could fire missiles and torpedoes simultaneously.[37]

Saturation fire of Iranian cruise missiles, especially in the narrow Strait of Hormuz, is another looming danger. The Iranians have cruise missiles from China and could buy more from Russia. The United States would have its hands full attempting to destroy Iran's missile bases judging, in part, from its experience trying to counter Iraqi cruise missiles. In fact, the United States did not destroy a single land-based Iraqi antiship missile launcher during the Gulf War, and the Iranians now have many launch sites, storage areas, caves, shelters, and small hardened facilities for their cruise missiles, which are difficult to detect and attack.[38] Iran could launch swarms of cruise missiles to try to overwhelm the defenses of a targeted American warship.

Iran's Style of Warfare

These Iranian capabilities leveraged against American vulnerabilities would be

acute problems for American naval forces in a future Gulf war. The U.S. military in 2002 conducted a war game that simulated large numbers of small and fast Iranian vessels attacking American ships in the Gulf with machineguns and rockets. In the simulation, the U.S. Navy lost 16 warships, to include an aircraft carrier, cruisers, and amphibious vessels in battles that lasted 5 to 10 minutes.[39] The lessons from this game have not gained much intellectual traction in a Pentagon and combatant command fully engaged in today's wars in Iraq and Afghanistan and against al Qaeda.

The Iranians more recently have given American forces a taste of their style of unconventional warfare. Five Iranian Revolutionary Guard patrol boats in January 2008 charged a three-ship U.S. Navy convoy in the Strait of Hormuz, maneuvering around and between a destroyer, cruiser, and frigate during a half-hour challenge. One Iranian boat came within 200 yards of an American ship and almost drew fire.[40] The United States needs to guard against such Iranian harassment operations as a deception ploy. The Revolutionary Guard might calculate that periodic challenge operations against warships will make the Americans grow accustomed to them and lower their guard, making the vessels more vulnerable to real attacks. The Iranians might decide that catching a large American warship unawares with a surprise attack would reap huge strategic rewards.

Despite the huge military expenditures and sophisticated Western armaments in their inventories, the Arab Gulf states are ill prepared to defend themselves in low-end (insurgency and militia sponsorship) and high-end (ballistic missile, perhaps with nuclear warheads) scenarios against Iran. These inventories, moreover, are not likely to overcome Gulf Arab shortcomings for defending against asymmetric Iranian attacks. The United States, for its part, is moving to strengthen Gulf Arab military capabilities in conventional warfare while neglecting their capabilities to counter Iran's most likely and more capable forms of force.

At the end of the day, the Arab Gulf states will have to decide whether to balance or to bandwagon Iranian power in the Gulf. Put another way, nation-states may either align against a stronger state or join it.[41] If the Arab Gulf states grow uncertain of the U.S. commitment to their security, they could bandwagon and appease Iran—and in so

doing distance themselves from the United States and give Tehran freer rein in the Gulf. If they are more confident of American security backing, they would balance against Iran and increasingly turn to the United States for security protection because their militaries are inadequate to the task of countering Iran along the full spectrum of warfare. Washington needs to encourage the Arab Gulf states to balance, but in doing so, it should focus less on building up their conventional military capabilities and pay more attention to the Iranian threats stemming from unconventional warfare. **JFQ**

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The State of Play in
Russia's Near Abroad

By PETER B. HUMPHREY

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Right now, Russia is engaged in a grand face-saving gesture: having lost the Cold War in so dramatic a fashion, it is swapping dreams of global domination for dreams of Eurasian suzerainty. Key to this aspiration is rigorous control over the activities, alliances, internal affairs, and attitudes of the (generally former Soviet) states on its periphery, and a new entrant: the Arctic Ocean. With World War II now woven into their being, Russians want to be able to defeat an invader on foreign (rather than Russian) territory, in buffer states such as Mongolia and the Muslim/Slavic "near abroad"—thus, their overwhelming desire to coopt these lands and create a sort of peripheral suzerainty where all others must fear to tread. Attempts to control the next ring of former Warsaw Pact allies have been abysmal, but that has not stopped Russia from trying; witness, for instance, the political capital expended to prevent Kosovo's independence or to torpedo the proposed U.S. antiballistic missile

What is driving Russia is a desire to exorcise past humiliation and dominate its "near abroad."

—Defense Secretary Robert M. Gates, January 2009

Russian honor guard in Moscow

U.S. Navy (Chad J. McNeeley)

defense system in Poland and the Czech Republic. Highly reminiscent of America's own Monroe Doctrine, Moscow is asserting a privileged sphere of influence and expecting the world to concur without objection. It is increasingly laying down markers and drawing red lines in the sand so border states are constantly aware they can only go so far before displeasing their neighbor.

Russia's Periphery

Finland. The nation that gave birth to the term used to describe neighborly strong-arming (*Finlandizing*) lost a substantial slice of territory (Karelia) in the aftermath of World War II. It was expected to conduct its affairs without reference to this territorial excision and avoid any Western military entanglements that might necessitate further military intervention—a sort of forced neutrality that had the advantage of often bridging the interests of the Cold War duelists. Considerably freer in its post-Soviet space, the Scandinavian republic senses the new assertiveness of its neighbor and is pursuing its most substantial military budget increase in many years.

Baltic States: Latvia, Lithuania, Estonia. Before the North Atlantic Treaty Organization's (NATO's) uncomfortable accession of these three republics, Russia touched the Alliance only on the inhospitable Norwegian frontier. With these three new members now an ever-present thorn in its side, Russia has countered by making clear its willingness to militarize its anomalous, isolated enclave at Kaliningrad. It is there that Russia promised to place a new missile force in the event of an antimissile emplacement in nearby Poland. Finlandized almost to the point of absorption, the White Russians make common cause with the Red Russians in almost every endeavor.

Belarus. The possibility of a reintegration plebiscite has been raised more than once—delayed only by the reality that the autocratic Alexander Lukashenko seems unwilling to exchange his current position as president for anything less than a top post in a united republic—an offer that has never been forthcoming. His country's military integration with Russia probably exceeds all other post-Soviet states, and the two nations recently announced entry into a fully integrated Commonwealth of Independent States air warning system. Only Belarus and Nicaragua are sympathetic to the Abkhaz and South Ossetian independence declarations.

The European Union (EU) is exploring membership for Minsk, largely at the urging of former Warsaw Pact members (Poland and the Czech Republic) who would like to coopt the Red and White Russian consolidation. Ever fearing that an accompanying measure (post-Lukashenko) could be NATO integration, Russia is standing firm against the EU feelers with enticements of its own: largely frozen natural gas prices and much needed loans (which Russia can ill afford) at a time of economic disaster. By agreement and as a provision of the Collective Security Treaty Organization (CSTO), a large Russian force will be stationed near the EU/NATO border.[1] Russia subsidizes arms exports to fellow CSTO members such as Belarus.[2] In his 2009 annual Intelligence Community threat assessment, Director of National Intelligence (DNI) Dennis Blair affirmed Belarusian willingness

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Finlandized almost to the point of absorption, the White Russians make common cause with the Red Russians in almost every endeavor

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USS *Annapolis* surfaces in the Arctic Ocean

to assist Russia in stifling U.S.–European missile defense plans, but noted that "Russia's continuing efforts to control key Belarusian economic sectors could prompt Minsk to improve ties with the West to balance Moscow. Lukashenko maintains an authoritarian grip on power and could return to repressive measures if public discontent over the worsening economy turns to protest."[3]

Moldova. Russian "peacekeeping" forces in Moldova continue to be a major source of friction.[4] As one of NATO's Partners for Peace, Moldova clearly views its own accession as inevitable. But Russian forces (2,800 strong) remain in the Russophile Transnistria region, over which the republic has little control. Were it not for the insulation of Ukraine, Transnistria would have gone the way of Georgia's Abkhazia and South Ossetia long ago.

Ukraine. DNI Blair notes that Ukraine has moved toward democracy and Western integration despite numerous political tests since independence:

Progress will be difficult because of weak political institutions, ongoing conflicts with Russia over gas pricing and contracts and the new exigencies of the global financial crisis, which has dramatically revealed the underlying weaknesses of the Ukrainian economy and potentially Ukraine's stability.[5]

Ukraine is of two minds with respect to Russia, and the divide is omnipresent in multiple spheres of civic life. Ukrainians can be effusive in their love for their Slavic brethren, but few forget the Russian-imposed famine that killed millions of Ukrainians in the 1920s, a psychic hard line that will take many more generations to overcome. The republic is populated by minority Uniate Catholics, who tend to look West, and the majority Orthodox, who often look East. This grand societal divide can even be found in the current government, where Viktor Yushchenko hopes to continue the flight from Soviet suzerainty and Yulia Timoshenko embraces a sort of cold pragmatism seeking to mollify Russia, stepping gingerly in any endeavor that might upset its cantankerous neighbor—even at the expense of evolutions that could ensure Ukraine's security and global economic integration. The two will no doubt face off during the winter 2009–2010 presidential election.

The contentious presence of Russia's Black Sea fleet is an artifact of the fall of the Soviet Union. Upon independence in 1991, Ukraine and Russia negotiated a division of Black Sea naval assets, with the stipulation that both fleets could share the extensive base at Sevastopol at least until 2017. But Russia's fleet may be seeing its last decade in the Crimea. Despite regular joint training exercises, relations have deteriorated since the collapse of the Soviet Union and partition of the navy. When the lease expires in 2017, Kiev wants the foreign navy out, but Russia wants to stay.

Russia's full subornment of Ukraine would allow access to Transnistria, which cannot now be realistically liberated or reintegrated without crossing Ukrainian territory. Nonetheless, with the ever-present precedent of fully isolated Russian Kaliningrad, the concept is not stillborn and would, in fact, serve to surround the pugnacious Ukraine if it could be pulled off without Western military intervention.

The Caucasus: Georgia, Armenia, and Azerbaijan. Blair notes that the continued difficulty of bridging fundamental differences between Azerbaijan and Armenia over Nagorno-Karabakh will also keep tensions high in the Caucasus:

Azerbaijan fears isolation in the wake of Kosovo's independence, Russia's recognition of South Ossetia and Abkhazia, and signs of improved Armenian-Turkish relations. Armenia is concerned about Baku's military buildup and does not want to become dependent on Russia. Both countries face the dual challenges of overcoming inertia in democratic reforms and battling endemic corruption in the face of an economic downturn.[6]

In the most festering sore and point of conflict with the West, Russia's longstanding "peacekeepers" in Georgian Abkhazia and Georgian South Ossetia turned hostile and were strongly reinforced in response to a Georgian attempt to reestablish its hold over these constituent territories. August 2008 saw Russian forces crush the nationalist attempt and go on to destroy lives and infrastructure in Georgia itself. By year's end, Russia pronounced the two territories independent and announced its intent to build more bases, particularly in Abkhazia: an airbase in Gadaut and a resuscitation of the Soviet naval facility at Ochamchira to accommodate the probable 2017 expulsion of the Russian Black Sea fleet from Crimea's Sevastopol. There is better news in Chech-

nya: through the instrumentality of the brutal autocrat Ramzan Kadyrov, nationalist Chechens appear to have been coopted at the expense of their Islamist brethren.

Central Asian States: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. Characterized by highly personalized politics, weak institutions, and growing inequalities, Central Asia is ill equipped to deal with the challenges posed by violent Islamic extremism, poor economic development, and energy, water, and food distribution. For instance:

■ Energy helped make Kazakhstan a regional economic force, but any sustained decline in oil prices would affect revenues, could lead to societal discontent, and would derail the momentum for domestic reforms.

August 2008 saw Russian forces crush the nationalist attempt and go on to destroy lives and infrastructure in Georgia

■ Tajikistan and Kyrgyzstan have heavily depended on migrant worker remittances from both Russia and Kazakhstan for a significant portion of their gross domestic product—up to 45 percent in the case of Tajikistan—and will be severely affected by the financial crisis. Tajikistan, in particular, faces increased threats to internal stability from the loss of these revenue streams.

■ Such challenges to regional stability could threaten the security of critical U.S. and NATO lines of communication to Afghanistan through Central Asia.

The Central Asian states are beholden to Russia for at least four reasons:

■ Allegiance to Russia-sponsored security organizations means discount arms and no pressure to reform any rampant autocratic tendencies.

■ Russia is assuaged sufficiently to temper any recent recidivist tendencies.

■ The army of migrant labor (now helping Russia overcome its stark population diminution) may face racist—even occasionally murderous—attacks, but the potential for mass expulsions seems off the table. Central Asian economies could literally collapse

under the weight of hundreds of thousands of sudden returnees who are no longer remanding earned income to their families back home.

■ Even with its strained economy, Russian financial largesse continues as a sort of soft power successor to Soviet military control. In exchange for certain (occasionally anti-Western) favors, Russia continues to provide regime-sustaining grants and loans. Indeed, the global financial crisis provides an opportunity to expand its influence in adjacent nations that are faring even worse than Russia itself. The Kremlin has shepherded a plan to buttress five cash-starved former Soviet republics by establishing a largely Russian-funded $10 billion bailout fund. This year Moscow proposed a separate $2 billion in Kyrgyz economic aid to offset the $17.4 million that the United States pays to rent Afghan-critical Manas airbase (part of a far humbler $150 million aid package). It is all the more astonishing that Kyrgyzstan accepted an annual $60 million plus ancillary contribution of over half that amount. Analysts ponder why Russia signed off on this or whether defiant Kyrgyz are risking an independent streak. If Russia assisted in a Kyrgyz plot to extort the United States, the hand was perfectly played—and Russia subtly aids in the fight against Islamists on its periphery without spending a ruble.

Mongolia. Never a constituent Soviet republic, Mongolia (population 2.7 million) was nevertheless fully Finlandized and long served as a buffer zone between the ambitious Russian and Chinese entities, despite the large Mongolian population within China (4.5 million). (With the majority—over 60 percent—of Mongols living in China, this is indeed a curious geopolitical circumstance that could be exploited by either side.) Imposition of a Cyrillic writing system has endured, and even today's free Mongolia rarely strays far from the Russian party line. Centrifugal forces in a postcommunist China could double the size of this nation.

The Arctic. Arctic expansion in anticipation of ice melt from global warming is taking the forms of:

■ producing and modernizing icebreakers
■ resuming submarine probes and long-range trans-Arctic bomber patrols
■ asserting bizarre and unsupportable territorial claims (uniformly rejected by the United Nations)
■ stationing more researchers throughout that realm, with new stations at Alexandra Land and at Svalbard and Spitsbergen, the latter challenging a well-recognized Norwegian claim (some of these scientists report to Russian intelligence[7]).

Russia's claim is so extensive that no country would be willing to accept it, yet any reduction in the claim would entirely undermine its raison d'etre. Russia's latest Arctic policy paper states that:

■ the nation must complete geological studies to prove its claim to Arctic resources and win international recognition of its Arctic border
■ the Arctic must become Russia's "top strategic resource base" by 2020
■ northern border guard fences must be strengthened
■ a new group of forces must be created to "ensure military security under various military-political circumstances."[8]

Russia's latest Arctic policy paper states that the Arctic must become Russia's "top strategic resource base" by 2020

The driver behind this new addition to the "near abroad" is resource lust for a disproportionate share of what is potentially a quarter of the world's oil and gas. Pelagic fisheries, seabed minerals, and methane clathrates may also prove interesting. Russia

Russian Peacekeeping Presence in Transnistria

UKRAINE

MOLDOVA

RUSSOPHILE TRANSNISTRIA REGION

ROMANIA

BLACK SEA

Chairman meets General Nikolai Makarov, chief of the Russian armed forces, in Moscow

already envisions a time (before 2030[9]) when exploitation of its vast reserves will diminish due to tired infrastructure and the poor climate for foreign investment (which might otherwise have rejuvenated same). Selected offshore reservoirs may offer a fresh start, notwithstanding brutal development and transportation costs. Pumping directly to Europe- or Japan-bound tankers in an ice-free Arctic could cut costs considerably. Even terrestrial reserves will fall prey to domestic consumption eventually, crippling lucrative exports. In grabbing the Arctic, Russia makes clear its intent to survive as a purveyor of raw materials rather than a technological powerhouse such as Japan or Germany. No nation has ever achieved superpower status via this route.

The Rest. Russia borders North Korea for a mere 24 kilometers (km), but that tiny portal may have significance soon. Reports noting the ill health of Kim Jong-il illuminate the possibility of chaos—even regime change—in the near term. China's demonstrated willingness to repatriate the steady stream of defectors who have made their way north does not bode well for an overnight wave numbering hundreds of thousands—and the Russia portal may be the only escape route available. China is completely unprepared for this human deluge and Russia even less so.

Its unrelenting bravado with respect to NATO notwithstanding, Russia's most probable long-term adversary is the overpopulated one-party state to the south, China. Russia touches China along a mountainous 36-km border running between Kazakhstan and Mongolia, but the remote frontier has not been a source of contention since the 1880s. That cannot be said for the Russian Far East, with its centuries of historical claims, counterclaims, unresolved border disputes, and actual shooting in the 1960s. The ongoing depopulation of northern and eastern Russian territories leaves a labor shortage that may intentionally or otherwise be filled by legal or illegal Chinese—a trend that does not bode well for long-term sovereignty over the area. Indeed, Beijing has quietly encouraged Chinese immigration across its border with Russia since the Soviet breakup.[10]

Russian Demographics

Russia is facing a demographic disaster that can help account for recent assertiveness with respect to its near abroad. With no incentives to help build socialism in the tundra, Siberia is depopulating. The end of communist residence permits means sane folks are free to move elsewhere, and the market forces that drive labor requirements often mean that a legal or illegal Chinese immigrant will have to do. With an ethnic negative birthrate approaching a million per year, Russia is being overwhelmed by typically high Muslim birthrates around its periphery—a shadow looming ever larger and increasingly viewed as a Fifth Column.

Russia's national fertility rate is 1.28 children per woman, far below what is needed to maintain the country's population of nearly 143 million. With a death rate 50 percent greater than its birth rate, Russia's population is falling by 700,000 or more per year. It reached 145 million in 2002 and will dip to 100 million in 2050. Not so for Muslim populations—Russia's army (a young cohort) is already almost half Muslim, and by 2020 Muslims will comprise one-fifth of the nation's population. With ethnic Russians now over 80 percent of the population, Russia may be only two-thirds "Russian" in 20 years. At this rate, a Muslim majority is possible by 2050.[11]

Vladimir Putin was blunt when he stated, "Russia needs a million new workers every year. If we don't get them, we can forget about economic growth." Consequently, Russia has its own illegal immigration problem from former Soviet constituent republics (overwhelmingly Muslim states plus the Christian Caucasus). This is not the labor force Putin has in mind. The agenda here is more *Russians*, not more Russian nationals. Russia realizes that time is not on its side and is trying to stake its *Lebensraum* claim *now* before things get any worse. These are Shakeresque trends that really could finish

> *Shakeresque trends really could finish off Russia—and Russians know it*

off Russia—and Russians know it. But their reversal requires exceedingly difficult social engineering. This is a stunningly complex problem to solve, and even a phenomenally successful intervention would take a decade— if not a whole generation. Here, then, is the source of a justifiable paranoia that seeks to secure the margins before it is too late.

Arctic Ocean Borders
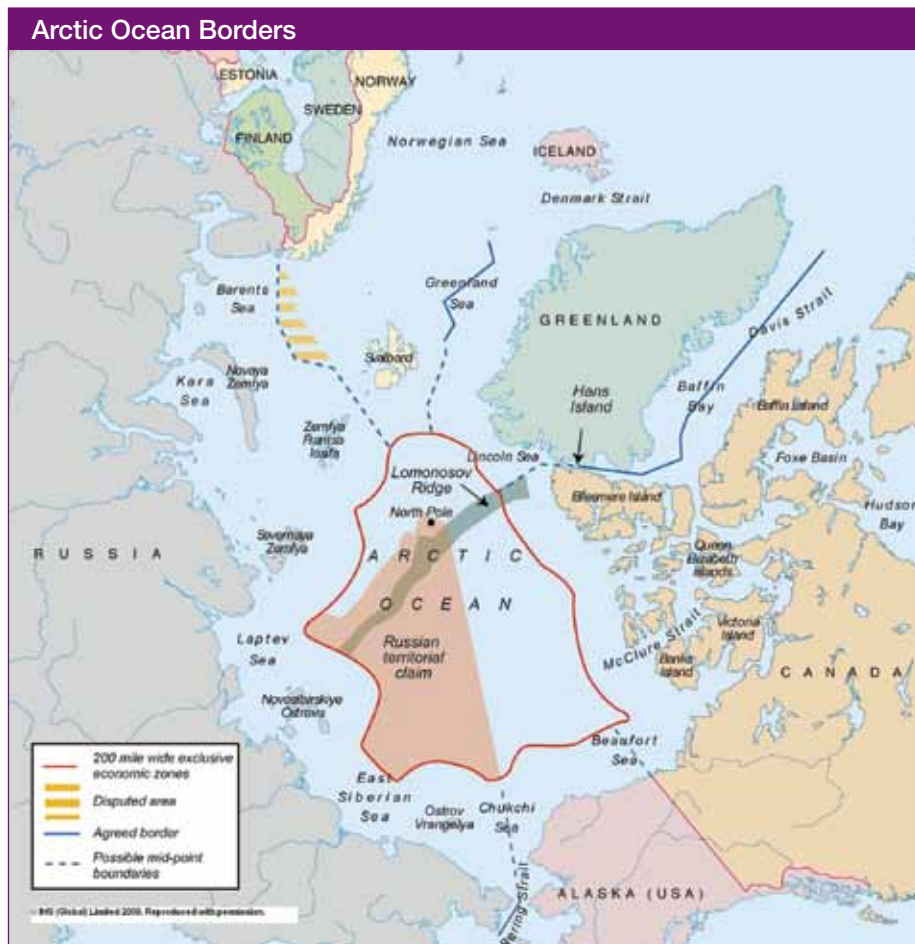
Issues for the West

Economic Domination by a Failing State Assures Failure. Russia is no economic powerhouse, and the degree to which it is able to suborn the generally former Soviet states on its periphery is the degree to which these states may be kept off the path to economic success and integration into the global system, a system that has raised income, labor, environmental, and health standards elsewhere. Finland is an economic success story in spite of—not because of—Russian heavy-handedness, benefitting only modestly from its history as a preferred transit point.

Mini–Warsaw Pacts. Russia's current world view seeks to prevent sovereign states from joining international security and economic organizations, which could nurture those nations and the world as a whole. The countervailing military alliances (the Shanghai Cooperation Organization [SCO] and Collective Security Treaty Organization) are primarily aimed at preventing Western entrenchment but coincidentally serve to protect autocracy.

A good measure of the success of CSTO (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan) is its willingness not to ask a lot of questions in the midst of global pressures to democratize. The notion of alignment with NATO implies a certain respect for and implementation of democratic values that fly in the face of the autocracy now common in Central Asia. CSTO and SCO offer an opportunity to fight terrorism, separatism, and narcotics and provide a framework for dealing with Western intrusion without the pressure to reform. This also makes these organizations attractive to Iran.[12]

Impetus to Islamization? The fact that Russian dominion in Central Asia assures laxity with respect to the democratic evolution of these states may well serve as a font for Islamist fervor—citizens may rally round their faith and hopes of "just rule" as a counterpoint to bad government. Chechnya, once an overwhelmingly secular rebellion, turned harshly Islamist in response to unrelenting Russian assault. Slaughter of innocents in Beslan was the revenge result.

Afghan Resupply. The degree to which Russia is able to control near abroad security affairs is the degree to which Western materiel access to Afghanistan is impeded. Our dependence offers an ever-present crisis spigot that can be turned on or off whenever Russia feels under siege from the West. The nation long ago mastered the art of creating crises that only it can alleviate (in exchange for concessions).

Arctic Gluttony. Russia's bizarre claim that the Arctic Ocean's Lomonosov Ridge—clearly an ancient tectonic boundary—is in fact the Russian continental shelf opens an as yet unchallenged and unprecedented land grab in which Russia purloins more than its fair share of submarine resources. According to Karl-Heinz Kamp:

The consequences of global warming will lead to fundamental changes in the Arctic region affecting NATO and Russia likewise. Melting ice-caps will open new shipping routes, providing new strategic options but also increasing the dangers of ecological disasters. The competition for oil and gas as well as territorial claims might be another potential source of tensions and conflicts. Thus, crisis management and confidence building must have the utmost priority and must be put into practice as early as possible.[13]

Otherwise, Arctic turmoil seems assured.

Energy Brinkmanship. Near abroad dominance assures an unending stream of energy disruptions. With its military in disarray and population in decline, energy is the one button Russia can push over and over again. This can take the form of repeated supply disruption or unending pipeline politics.

Potential Allies Genuinely at Risk. With NATO expansion viewed as the worst thing that has happened since the fall of the Soviet Union, Ukraine and Georgia could actually face preemptive military action. If Russia waits until they join, the provisions of the mutual defense treaty kick in. And that may even extend to prospective membership, which has never been tested.

Godfather of Ethnic Russians. The proposed Compatriot Law now working its way through the Duma aspires to extend Russian protection to Russians living in other lands and raises the specter of "liberation" of like-minded neighboring ethnic enclaves—all too reminiscent of Nazi Germany's "guardianship" of the Czech *Sudetenland*. Russian populations abound in Kazakhstan, Moldova, Ukraine, and the Baltic states. **JFQ**

NOTES

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[10] Peter Zeihan, "China and Russia's Geographic Divide," July 22, 2008, available at <www.stratfor.com/weekly/china_and_russia_s_geographic_divide>.

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SORT-ing Out START

Options for U.S.-Russian Strategic Arms Reductions

By STEPHEN J. CIMBALA

Russian President Dmitry Medvedev and President Obama are committed to progress on strategic nuclear arms limitation

merican and Russian presidents Barack Obama and Dmitry Medvedev have committed their administrations to progress on strategic nuclear arms limitation. A new agreement to replace the existing Strategic Arms Reduction Treaty I (START I) was drafted in July 2009 and may be ready for U.S. Senate ratification prior to the expiration of the treaty in December.[1] The favorable political winds on nuclear arms control between Washington and Moscow might open the door to further accomplishments in their agenda of shared security concerns. These possible areas of convergent interests include Afghanistan, Iran, and nonproliferation.

But nuclear arms control is more than a technical exercise. Embedded in the construction and negotiation of arms pacts are issues related to post–Cold War geopolitics, including North Atlantic Treaty Organization (NATO) enlargement, U.S. missile defenses deployed in Europe, and Russian military doctrine and reform. This article considers various options for U.S.-Soviet strategic nuclear arms reductions within this larger politico-military context and offers provisional but timely assessment of prospects for success.

Reset

START and Other Issues. The Obama administration has indicated that it wants to "reset" the button on U.S. relations with Russia, in contrast with the upsurge of political disputes that characterized the latter years of the George W. Bush and Vladimir Putin presidencies.[2] The U.S. intention to move

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forward on Russia is a positive note for international relations. But the disagreements that characterized U.S. relations with Russia under Bush and Putin are not merely matters of tone. Instead, those areas of disagreement will carry forward into the Medvedev and Obama presidencies because they involve serious and substantive political and geostrategic differences.[3]

One area of possible and urgent security cooperation between Russia and the United States is the decision to either continue or replace the START I nuclear arms treaty, signed in 1991 and set to expire in December 2009. In part, START has been superseded by the Strategic Offensive Reductions Treaty (SORT) of May 2002, an agreement between the Bush and Putin administrations. SORT requires each state to reduce its operationally deployed strategic nuclear weapons to 2,200 to 1,700 warheads by the end of 2012.[4] However, SORT provides for none of the monitoring and verification protocols so characteristic of Cold War–era U.S.-Soviet arms control agreements. In fact, SORT has piggybacked on the START protocols in this regard, but the expiration of START would leave SORT a verification-free radical. The table summarizes the START-accountable launchers and weapons for both the United States and Russia as of January 1, 2009.

Agreement on a post-START and post-SORT bilateral arms agreement is related to other important U.S. and Russian foreign policy objectives. Success or failure in nuclear arms control is also connected to broader issues that mark diplomatic and military fault lines, as between America and Russia. These issues include:

- NATO relations with Russia
- Russian cooperation with the United States and NATO over Afghanistan and Iraq
- U.S.-Russian leadership as an essential constituent of a viable global nuclear nonproliferation regime
- U.S. plans under Bush, now apparently under review by Obama, to deploy elements of the American global missile defense system in Poland and in the Czech Republic.

It would be impossible to do justice to each of these issues in a single article, but their connection to the progress or lack thereof in nuclear arms control is important to appreciate. Russia's objectives in restarting START are both political and military. The military objective of stable deterrence is also a political objective: to create a U.S.-Russian security space in which Russia is recognized as a coequal nuclear partner and, with the United States, as occupying a singular tier in the hierarchy of nuclear weapons states.

Moscow needs this perception of its essential strategic nuclear parity with Washington to provide a foundation for the remainder of its policies in Europe and Asia. Russia's conventional military forces are only now being rebuilt from the locust years of the 1990s, but they are decades and many rubles away from being world class—or even NATO class. Nuclear weapons are Russia's tickets of entry into the geostrategic debates of the 21st century. And those debates involve the very definition of Russia's strategic perimeter and surrounding security spaces well into the remainder of the present century.

The View from Russia. For example, Russia is faced with a NATO expanded far beyond its Cold War boundaries. NATO's membership was expanded to 28 in April 2009 with the addition of Croatia and Albania. Although these two additions pose no particular threat to the Kremlin, interest

Russian Strategic Arms Reduction Treaty inspection team leaves Vandenberg Air Force Base after inspections

U.S. Air Force (Stephanie Longoria)

Table. START Aggregate Numbers of Strategic Offensive Weapons (as of January 1, 2009)

UNITED STATES

Weapon	Launchers/warheads per launcher	Total warheads
Intercontinental ballistic missiles (ICBMs)		
Minuteman III	550*	1,250
Submarine-launched ballistic missiles (SLBMs)		
Trident I	96/6	576
Trident II	336/8	2,688
Heavy bombers		
B–1	56/1	56
B–2	19/1	19
B–52 air-launched cruise missiles	141/7	987
U.S. Total	**1,198**	**5,576**

RUSSIA

Weapon	Launchers/warheads per launcher	Total warheads
ICBMs		
SS–25	180/1	180
Topol-M/SS–27 (mobile)	15/1	15
Topol-M/SS–27 (silo)	50/1	50
SS–19	120/6	720
SS–18	104/10	1,040
SLBMs		
SS–N–18	96/3	288
SS–N–20	40/10	400
SS–N–23	96/4	384
RSM–56 (Bulava)**	36/6	216
Heavy Bombers		
Blackjack	14/8	112
Bear	63/8	504
Russia Total	**815**	**3,909**

Source: U.S. Department of State, "START Aggregate Numbers of Strategic Offensive Arms," fact sheet, April 1, 2009, available at <www.state.gov/t/vci/rls/121027.htm>.
*Minuteman missiles carry either one or three warheads.
**SLBMs are considered deployed once submarines with available launch tubes become operational. Presently, two submarines can carry RSM–56 missiles with a total of 36 tubes between them. Grateful acknowledgment is made to Dr. Pavel Podvig, Stanford University, for clarification of this issue.

on the part of Georgia and Ukraine is another matter. Russia's war with Georgia in August 2008 was not only a prompt response to alleged Georgian attacks on South Ossetia. Moscow was also motivated by its concerns about eventual Georgian membership in NATO. The Alliance had stated its clear intent to offer eventual membership to Georgia and Ukraine as recently as 2008. However, NATO has held back from an actual offer of any Membership Action Plan for either country due to Moscow's sensitivities. Russia also fears interest on the part of previously nonaligned states in Europe in obtaining membership, including Sweden and Finland. In the latter case, NATO's military guarantee would be extended to within a stone's throw of St. Petersburg—breathing down Russia's neck.[5]

the military objective of stable deterrence is to create a security space in which Russia is recognized as a coequal nuclear partner and, with the United States, as occupying a singular tier in the hierarchy of nuclear weapons states

NATO enlargement is tied directly to the issue of U.S. missile defenses deployed in Eastern Europe in two ways. First, the proposed radars for the Czech Republic and missile interceptors in Poland would increase the direct U.S. military presence in former Soviet security space. Second, the European missile defenses are a cause for concern on the part of Russian political and military leaders and other security experts. Although justified by the United States as necessary to deter an Iranian missile attack against European or American vital interests, that rationale is disputed on the grounds that the U.S. European-based ballistic missile defenses (BMD) could threaten the viability of Russia's nuclear deterrent. The argument by pessimists is not that the present small number of proposed interceptors and radars would do so, but that the system could be expanded to include many more BMD interceptors and radars, or even paired with offensive missiles for nuclear preemption or coercion.

Russia's concern about the viability of its deterrent against American missile defenses of undetermined proficiency and size is a worry about not only its strategic

nuclear forces (that is, those based on delivery systems with intercontinental ranges), but also the credibility of its nonstrategic nuclear weapons tasked for deterrence or defense in Europe. Russian military doctrine and leading spokesmen have insisted that a conventional war posing a strategic threat to Russia might prompt a first use of tactical or theater nuclear weapons in order to impose a deescalation of the fighting on terms favorable to Russia. In other words, the Kremlin will not lose a conventional war within, or near, its state territory without reserving the option of nuclear first use against an attacker. U.S. or NATO missile defenses that did not include Russia as a player in the matrix of BMD deployments and monitoring systems could pose such a threat to Russia's regional military deterrent and, therefore, to its homeland security.

Indeed, more is at issue than allegedly broken promises or U.S. and NATO sensitivities to Russian concerns. Moscow's self-perception as a revived great power in Eurasia includes an assumed right to dominate former Soviet security space politically. Political hegemony in this region includes military flexibility for Russia's use of power in its near abroad and for the deterrence of encroachment by foreign powers deemed hostile. From this perspective, Russia's expanded self image comes into conflict with present and possible future designs for NATO enlargement and, more specifically, with a heavier U.S. military footprint in Eastern Europe. But Secretary of Defense Robert Gates suggested in a March 2009 news briefing that Russian military modernization and reform were not necessarily threatening to the United States or NATO:

They are looking at shrinking their conventional force by several hundred thousand. They are cutting a significant—perhaps as many as 200,000 or more officer billets. So I think that—and [Medvedev] is talking about—my impression of what he was talking about was a Russian military that is more expeditionary, and not so focused as in the past on taking on NATO.[6]

Without endorsing the immediate past or present Russian perspectives on missile defenses or NATO enlargement, U.S. officials must take them into account to make progress on a new START agreement.

the end of the Cold War and the demise of the Soviet Union removed some of the disincentives for independent nuclear forces

As Stephen J. Blank has noted, trends in the U.S.-Russian security relationship, including their nuclear arms negotiations, have profound effects on the entire international order.[7]

Nuclear Arms Reductions, Proliferation, and Geopolitics. The outward reverberations from Russian-American nuclear arms control are especially pertinent to the larger issue of nuclear nonproliferation. The end of the Cold War and the demise of the Soviet Union removed some of the disincentives for independent nuclear forces that existed from the dawn of the nuclear age until 1991. In addition, the post–Cold War international systemic shift in the balance of military power, in favor of the United States and its prevalence in information-led conventional

Secretary of Defense views ground-based interceptor missile silo at Fort Greely, Alaska

U.S. Air Force (Jerry Morrison)

warfare, has generated both new incentives for nuclear weapons spread and new options for restraining proliferation.

On the incentive side, states with aspirations for regional hegemony or grudges against neighbors may seek weapons of mass destruction, including nuclear ones, in order to deter or deny access to American expeditionary forces that might otherwise be inclined to intervene in their neighborhood. On the disincentives side of the equation, new technologies might provide for limited defenses against light nuclear attacks, or for conventional and nuclear global strike capabilities to preempt aggression with nuclear or other weapons of mass destruction. For example, the Bush administration deployed missile defenses and defined a "new triad" that included conventional and nuclear deep strike, ballistic missile defenses, and improved national defense infrastructure.

Russia, on account of its economic and military stagnation, has not been able to match the United States in capabilities for long-range precision strike, command, control, communications, computers, intelligence, surveillance, targeting, reconnaissance, stealth, and other accessories of the information age. Although plans are in train for the modernization and reform of conventional forces, including an increase in the number of contract troops and the downsizing of a bloated officer corps, nuclear weapons will continue as the symbols and substance of Russian military respect abroad. For this and other reasons, Russia's leaders might be more ambivalent about proliferation than their American counterparts.[8]

Oddly enough, the perspectives of the Russian political leadership during the presidential years of Vladimir Putin were in synch with those of the Bush administration. The issue with nuclear weapons spread was not so much the "what" of additional nuclear weapons states, but the "who" of their identity. For Washington, rogue states or others who might leak clandestine nukes to terrorists were to be kept below the nuclear threshold. For Moscow, the concern was to keep NATO and U.S. military power from the doorstep of Russia because American conventional deep strike might be used to attack its nuclear deterrent. In addition, certain countries in the former Soviet security space, especially in Eastern Europe and the Caucasus, must be denied any political resources, military capabilities, or alliances that would pose a fundamental threat.

The Bush administration, despite many differences of political philosophy with its immediate predecessor, embraced with equal enthusiasm a robust concept of promoting the spread of democracy. After 9/11, this ideological emphasis was combined with a willingness to use the hard edges of military power to support it, including preemptive or preventive war. The invasion of Afghanistan to topple

> *encirclement by democracies in its near abroad combines with Russia's relative weakness, compared to NATO, to reduce its ability to project military power beyond its borders*

the Taliban was followed by the overthrow of the Saddam Hussein regime. Forcible regime change in Iraq was opposed by Russia as well as some European allies of the United States, but it proceeded anyway with a "coalition of the willing." As well, the Bush administration continued the post–Cold War expansion of NATO until it totaled 26 member states, with others waiting in the wings.

What Russia feared was not the possibility of military invasion or conquest, as was on the table during the world wars of the 20th century. The objectives of NATO and the United States were not the military occupation of Russia, but the democratization of Russia as a path to its reliable membership in a pacified European and Central Eurasian security space. A strong Russia with a growing market economy and democratic polity was, in the American and NATO view, a potential stabilizer and security partner.

NATO and Russia: Thinking Out of the Box? NATO enlargement, missile defenses, and other security developments that threaten Russia's current version of managed or sovereign democracy are thus components of a geostrategic threat—as seen from the Kremlin. Therefore, the Rose and Orange revolutions in Georgia and Ukraine shook windows in Red Square, especially when Russian efforts to delay or defeat those democratic movements came to naught. Encirclement by democracies in its near abroad combines with Russia's relative weakness, compared to NATO, to reduce its ability to project military power beyond its borders. Russia's war with Georgia from August 8 to 12, 2008, revealed serious

shortcomings in its command, control, communications, equipment, training, and other aspects of its preparedness for either military peace operations or war. Moscow's recognition of South Ossetia and Abkhazia in the aftermath of its dustup with Georgia was an explicit reminder to NATO of its own decision to liberate Kosovo from Serbia. But this diplomatic move also signaled Russia's frustration with its limited capability for power projection and with the Alliance's boardinghouse reach into the vitals of its security space.

Nevertheless, NATO has options that might provide a modus vivendi for improved security cooperation, such as offering membership to Russia. This option, diplomatically unthinkable for many Russians and some Alliance members in the immediate post–Cold War years, now lays claim to a lower "giggle factor" among serious analysts and policymakers. Pushing NATO's eastward and Caucasian borders farther and farther makes the line between what is NATO's business and what is Russia's business more urgent to determine and will require cooperation and partnership. There exists no demilitarized buffer zone between NATO and Russia—neither a political nor military nor economic no man's land. If Ukraine becomes a member of NATO, the preceding point about the absence of buffer zones is even more emphatically true. There is no longer an "Eastern" as opposed to a "Western" Europe, but only a trans-Europa that is inclusive from Lisbon to the Ural Mountains, including southern Europe and parts of trans-Caucasus.

Even without Ukrainian membership in NATO, history is headed toward the creation of a Eurasian security community that should include Russia. This favorable-for-security development can be delayed, but not denied, unless states are foolish enough to allow hypernationalism, militarism, or ideology to compromise their decisionmaking—which, as the historical record shows all too clearly, they frequently do. A transcontinental European security space with Russia in NATO is not a necessary condition for progress in U.S.-Russian nuclear arms control, which is a matter of current importance and urgency regardless of the larger political outcome of NATO and Russian high politics. But leaders could do worse than provide a vision that inspires arms negotiations with the expectation that neither excessive numbers of nuclear weapons nor recidivism in Cold War policies

will hold back the migration of Europe into a non–zero-sum definition of its security challenges and into increased military cooperation across national borders.

History is not deterministic, however, and leaders must resolve upon taking the incremental decisions that cumulate to preferred, as opposed to dysfunctional, security outcomes. This implies getting meaningful reductions in U.S. and Russian strategic nuclear forces and connecting that accomplishment to successful leadership by Moscow and Washington in nuclear nonproliferation.

Methodology

Forces and Weapons. In this section, we develop hypothetical, but not unrealistic, SORT-compliant and smaller forces for the United States and Russia going forward.[9] Each state is assigned a larger force with an upper limit of 1,700 operationally deployed warheads, or the lower end of the maximum SORT-compliant range. In addition, each is also assigned a smaller force of 1,000 deployed warheads. These forces will be tested for their second strike capability under four conditions of alertness and launch doctrine:

- forces are on generated, or ready, alert and launched on warning of attack
- forces are on generated alert and launched after riding out a first strike
- forces are on day-to-day alert and are launched on warning
- forces are on day-to-day alert and are riding out the attack.

In general, these conditions constitute a loss of strength gradient as we move from the first condition to the fourth above, but there are exceptional cases. Much depends on the mix of launchers used, as discussed below.

The model also allows us to test for the viability of different mixes of delivery systems, or launchers, for each state. For the United States, the alternative force structures include:

- a balanced triad of intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and bomber-delivered weapons
  - a dyad of SLBMs and bombers
  - a dyad of ICBMs and SLBMs
  - a force composed entirely of SLBMs.

For Russia, the alternative force structures analyzed here are:

- a balanced triad
- a dyad of ICBMs and SLBMs
- a dyad of ICBMs and bombers
- a force composed entirely of ICBMs.

Examination of the performance of different mixes of launch systems for each state also permits us to test the significance of "conventionalization" of one or more legs of the American or Russian nuclear triad. One of the disputes about probable counting rules for a follow-on START, as suggested earlier, is the Russian concern over U.S. plans to equip some formerly authorized nuclear launch systems with conventional warheads. The idea of global strike, as provided for in Bush policy guidance, included a mix of long-range conventional and nuclear weapons. U.S. planners saw this as increasing flexibility for distant attacks on time-urgent targets without reliance on only a nuclear option.

Russia, on the other hand, regarded the mixing of conventional and nuclear strike options on the same launch systems as potentially provocative of crisis instability. How would Russia know whether a missile flying over or near its state territory, or that of an ally, was carrying a conventional or nuclear warhead? Russia might assume the worst and respond to a conventional first strike with a "retaliatory" nuclear launch on warning.

In effect, the alternative force structures provide a glimpse of what would happen to each state's retaliatory capabilities, at higher and lower levels of weapons deployment, if one or more components of the triad of land-based missiles, sea-based missiles, and bombers were eliminated. Pertinent force structures for each state reflect their military doctrinal proclivities and past practices. For example, the U.S. illustration for a "monad," or single type of nuclear launcher, is the SLBM fired from the fleet ballistic missile submarine. In that illustration, other types of launchers can be assumed to have been equipped with conventional warheads if deployed or else not deployed at all. In the Russian case, the emphasis on land-based missiles, compared to SLBMs or bombers, sug-

gests that their illustrative monad would be a force composed entirely of ICBMs.

Why bother to illustrate these hypothetical alternatives if, by all indications, both Russia and the United States are presently committed to a triad of nuclear-capable delivery systems? The benefits of looking at alternative mixes of launch systems are at least twofold. First, it may turn out that triads are redundant for the accomplishment of retaliatory missions under some conditions. Second, alternative mixes of launch systems provide a perspective on the question of distributing conventional and nuclear forces together. Present diplomacy suggests that one side (the United States) considers conventionalization of some launch platforms as an opportunity, while the other side (Russia) regards commingling of conventional and nuclear weapons as a danger. Both perspectives may be right or wrong—much depends on the political conditions leading up to a crisis in which the threat of first strike, by conventional or nuclear weapons, would be imminent.

Russia regarded the mixing of conventional and nuclear strike options on the same launch systems as potentially provocative

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If Russia's budget problems preclude modernization of all three parts of its long-range nuclear triad, it might be receptive to a two-sided and verified conventionalization of one type of launcher for each state. Thus, for example, the United States might choose to conventionalize weapons deployed on its land-based missiles. Russia might then opt to equip its SLBMs with conventional warheads only. Each state would retain two types of launchers equipped exclusively with nuclear weapons. Such an arrangement would be easier to monitor or verify than a more complicated structure in which nuclear and non-nuclear weapons were mixed within a given type of launcher, whether land- or sea-based missiles or bombers.

Another possibility is that both the United States and Russia could retire their long-range bomber forces from nuclear missions and equip them with conventional weapons only. Bombers have some advantage for crisis management compared to missiles since they can be recalled after launch, and this was probably a meaningful asset during the tension of the high Cold War. However, in the present century with a declaredly nonhostile relationship between the United States and Russia, the ability to recall

bombers after launch may be less important than other variables. The Russian bomber force has deteriorated markedly from the Soviet days, and most of it would probably be destroyed on the ground by a U.S. first or second strike. The U.S. bomber force is state of the art in performance parameters, but growing numbers of conventional missions for the long-range bomber force compete with nuclear tasking. Finally, the command and control of nuclear bomber forces is complicated, and slow-flying bombers cannot compete with missiles for prompt strikes against time-urgent targets. In a protracted nuclear war of the kind some envisioned during the Cold War, bombers offered a residual "postattack" force for bargaining for war termination. However, this type of nuclear war is inconceivable nowadays, even to the

Figure 1. U.S.-Russia Total Strategic Weapons Deployed (1,700 limit)
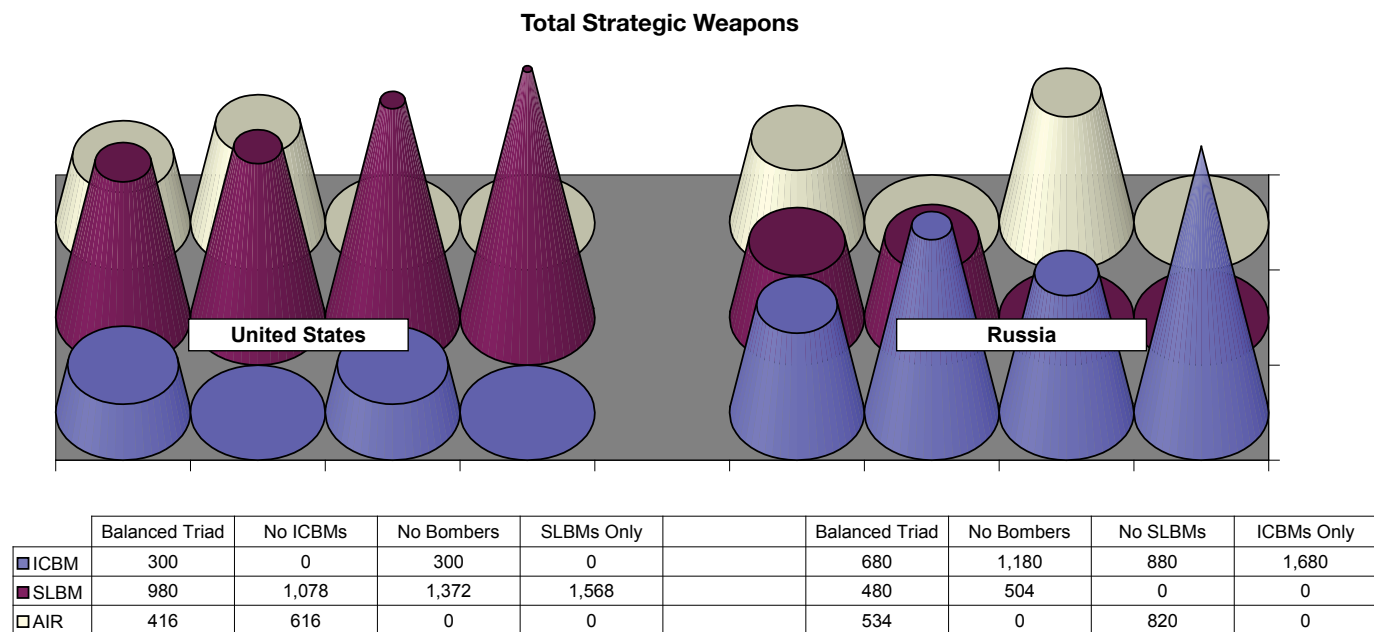
Total Strategic Weapons

	Balanced Triad	No ICBMs	No Bombers	SLBMs Only		Balanced Triad	No Bombers	No SLBMs	ICBMs Only
ICBM	300	0	300	0		680	1,180	880	1,680
SLBM	980	1,078	1,372	1,568		480	504	0	0
AIR	416	616	0	0		534	0	820	0

Key: ICBM: intercontinental ballistic missile; SLBM: submarine-launched ballistic missile; AIR: aircraft

Figure 2. U.S.-Russia Retaliatory Weapons (1,700 limit)
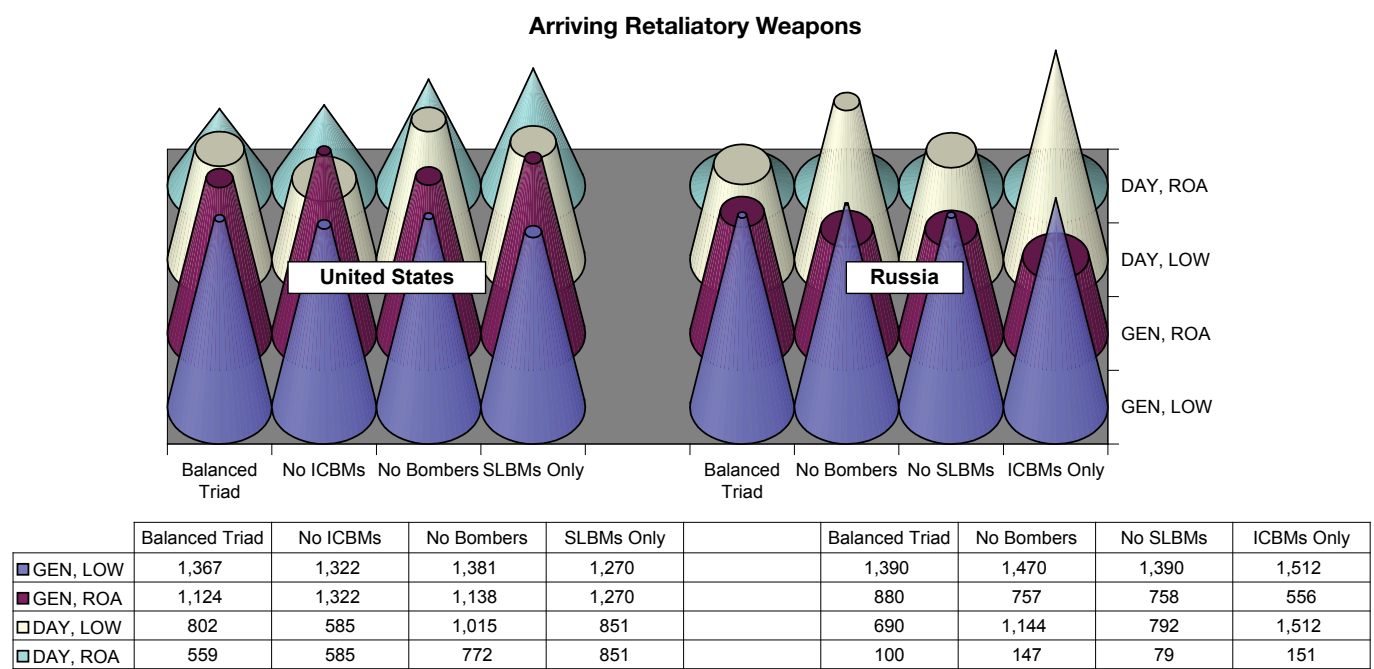
Arriving Retaliatory Weapons

	Balanced Triad	No ICBMs	No Bombers	SLBMs Only		Balanced Triad	No Bombers	No SLBMs	ICBMs Only
GEN, LOW	1,367	1,322	1,381	1,270		1,390	1,470	1,390	1,512
GEN, ROA	1,124	1,322	1,138	1,270		880	757	758	556
DAY, LOW	802	585	1,015	851		690	1,144	792	1,512
DAY, ROA	559	585	772	851		100	147	79	151

Key: ICBM: intercontinental ballistic missile; SLBM: submarine-launched ballistic missile; GEN: generation stability; LOW: launched on warning; ROA: riding out the attack; DAY: day-to-day alert

more energetic planners on the Russian and American general staffs.

Analysis

U.S.-Russian Reductions. The preceding conditions having been explained, we now proceed to the actual data analysis. Figure 1 summarizes the total strategic weapons deployed under a limit of 1,700 by the United States and Russia in a hypothetical post-START and post-SORT agreement. Figure 2 summarizes the numbers of retaliatory warheads for each state following a first strike by the other side.

The outcomes in figure 2 show that a post-START limit of 1,700 on the numbers of operationally deployed warheads allows each state a considerable second strike capability. The United States can under all conditions of alertness launch many hundreds of weapons, permitting retaliatory strikes against value as well as counterforce targets. Russia can do likewise, although its capabilities in the worst condition of prewar readiness (day-to-day alert and riding out the attack) are considerably less than those of the United States in similar conditions. Nevertheless, Russia can retaliate with at least 100 surviving and arriving warheads in three of its four force structures, even under the worst case for the defender. Interestingly, under some conditions for each state, a dyad or even a monad

provides for more surviving and retaliating warheads than does the traditional triad.

Would reducing the maximum limit on weapons deployments from 1,700 to 1,000 warheads change the viability of the U.S. or Russian strategic nuclear deterrent? Some American and even some Russian pessimists have expressed concerns to this effect, especially about Russia's viability going forward if modernization lags.[10] Figure 3 summarizes

the United States can under all conditions of alertness launch many hundreds of weapons, permitting retaliatory strikes against value as well as counterforce targets

the numbers of strategic nuclear weapons deployed by Russia and the United States under a post-SORT and post-START limit of 1,000 operationally deployed warheads.

Figure 4 summarizes the numbers of retaliatory warheads for Russia and the United States under the various operational conditions that also obtained in figure 2. It shows that, under a maximum of 1,000 deployed weapons for each state, the United States can provide for several hundred surviving and arriving retaliatory weapons under all condi-

tions of operational readiness and launch doctrine and for all of its force structures. Russia can respond to a nuclear first strike with several hundred retaliating warheads, under all conditions of alertness and launch protocols, and regardless of its force structures—with the singular exception of the "day-to-day alert, riding out the attack" condition. However, Russia is unlikely to be caught in this condition of relatively lowest readiness for an attack during any crisis that would precede a nuclear war. It would more likely be at maximum readiness (generated alert and launched on warning) or on generated alert and riding out the attack, which is the U.S. declared but not necessarily operational posture.

Pessimists might conjure scenarios in which the United States struck Russia with a "bolt from the blue" and caught its forces in the lowest level of preparedness. But even then, Russia would provide for many tens of warheads striking American and/or European cities under the worst of conditions.

Nuclear force exchange modeling during the Cold War was arguably a stilted art form—frequently devoid of political common sense. In political reality, the United States would never consider it a "victory" or "success" if a nuclear war destroyed the capitals and other major cities of its European (or other) allies, even if the force-on-target outcomes were less devastating for North

Figure 3. U.S.-Russia Total Strategic Weapons Deployed (1,000 limit)
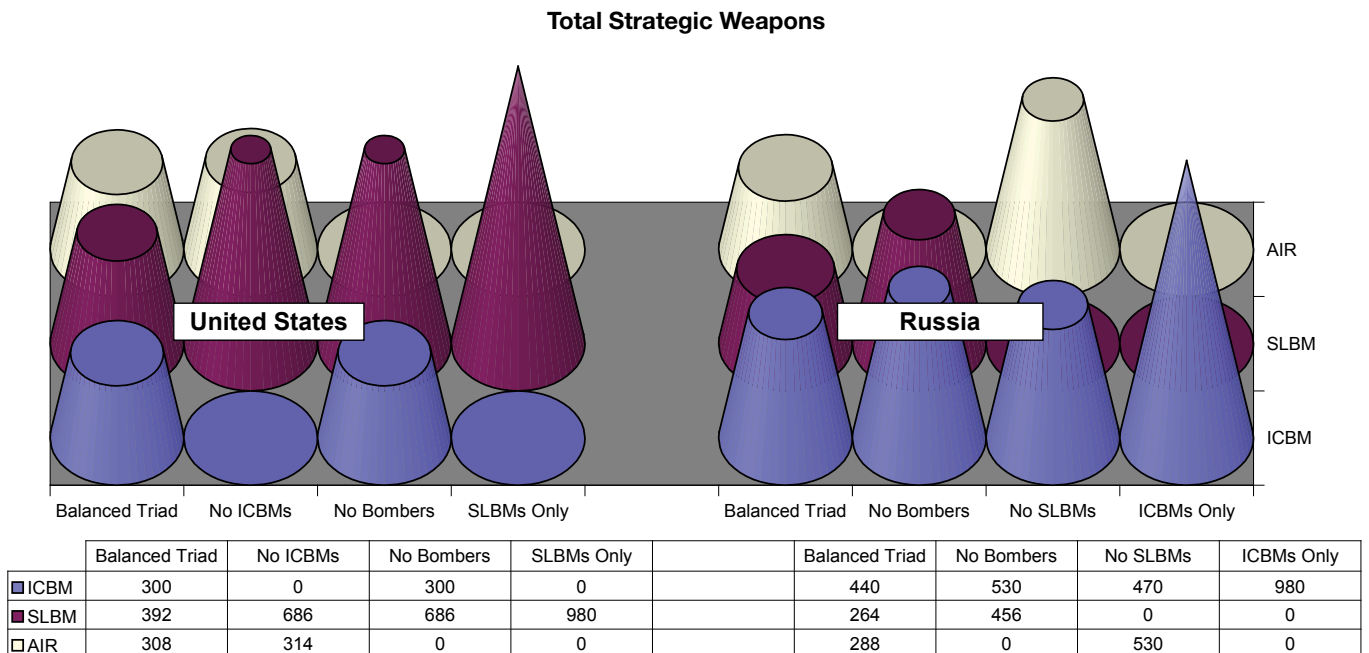
Total Strategic Weapons

	Balanced Triad	No ICBMs	No Bombers	SLBMs Only		Balanced Triad	No Bombers	No SLBMs	ICBMs Only
ICBM	300	0	300	0		440	530	470	980
SLBM	392	686	686	980		264	456	0	0
AIR	308	314	0	0		288	0	530	0

Key: ICBM: intercontinental ballistic missile; SLBM: submarine-launched ballistic missile; AIR: aircraft

America than they proved for Russia. European and therefore Western civilization cannot be divided into partial plates and survive. When Franklin Roosevelt and Winston Churchill were singing hymns together in Placentia Bay in 1941 aboard a British warship, they were affirming this fundamental truth. In addition, a deconstructed Russia would uncork chaos in Central Eurasia, the Middle East, and elsewhere.

Figure 4 tells of history, politics, war, common sense, and civilization. A post-START and post-SORT arms reduction agreement with an upper bound of 1,000 deployed strategic nuclear weapons would suffice to provide for deterrence. More important, it would provide for additional reassurance, as between Washington and Moscow, permitting them to get on with other mutually beneficial agendas, including the agenda of nonproliferation. The common interest of the United States and Russia is to move forward with this win-win agenda of controlling the spread of nuclear weapons before it becomes a lose-lose for them and for the entire nonproliferation regime. The surety of stable deterrence as between the two nuclear giants is the first step. The next step is to assess whether the more ambitious of the two preceding nuclear force reduc-
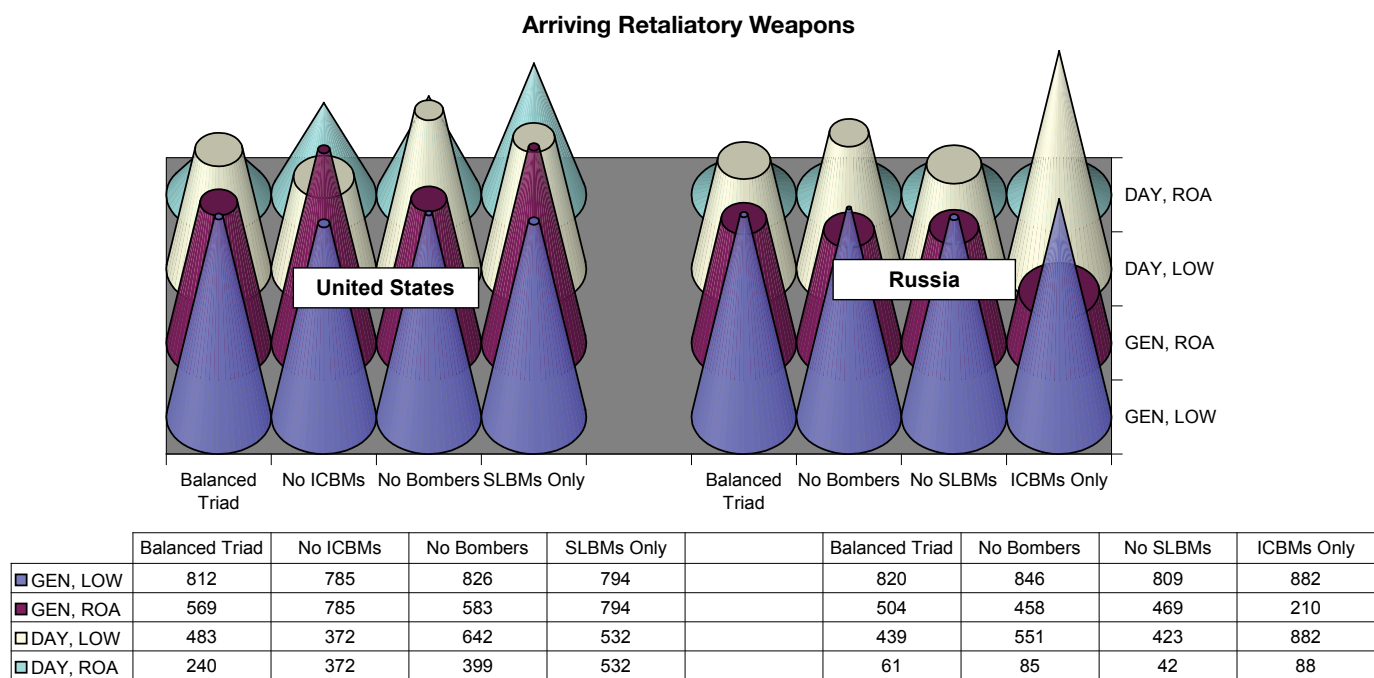
tions can be connected to a viable model of nonproliferation.

Proliferation. In figure 5, we establish a model of a constrained nuclear nonproliferation regime. In this model, nuclear weapons spread is limited to the currently acknowledged or de facto eight nuclear weapons states (with the exception of North Korea, whose status is a work in progress). The assumption is that Iran establishes a complete nuclear fuel cycle but, under international supervision, agrees not to become a nuclear weapons state. North Korea's existing nuclear weapons and infrastructure are verifiably dismantled, in return for economic and diplomatic emoluments negotiated with its five interlocutors on nuclear disarmament (South Korea, Japan, Russia, China, and the United States). The remaining nuclear powers are assigned ranks and maximum numbers of deployed nuclear weapons on various mixes of launchers, depending on national capabilities and proclivities. Tier 1 nuclear weapons states include Russia and the United States, with a maximum of 1,000 deployed warheads each. Tier 2 states, limited to 500 deployed warheads each, include China, France, and the United Kingdom. Tier 3 states, limited to 300 warheads, include India, Israel, and Pakistan. For purposes of the present discus-

sion, we will assume that the challenges of reliable monitoring and verification for these numbers have been surmounted, although the "real world" problems in this regard are compelling.[11]

Figure 5 also summarizes the total numbers of deployed nuclear weapons assigned to each state in the model. These assignments are made in generic categories: detailed specifications of weapons and performance parameters would be impossible and unnecessary. For example, weapons deployed on missiles or bombers of less than intercontinental range might not be considered by the Americans and Russians as "strategic" for their purposes (capable of inflicting unacceptable, and potentially decisive, effects). But for other nuclear weapons states, actual or potential enemies do not require weapons capable of covering such immense distances. Strategic threats can be posed to one another by states that share a common border or live within a regional neighborhood: India and Pakistan, China and India, and China and Pakistan offer cases in point. In addition, China and Russia, although both possess intercontinental delivery systems for nuclear weapons, could inflict serious damage on one another with strikes of shorter ranges.

Figure 4. U.S.-Russia Retaliatory Weapons (1,000 limit)

Arriving Retaliatory Weapons

	Balanced Triad	No ICBMs	No Bombers	SLBMs Only		Balanced Triad	No Bombers	No SLBMs	ICBMs Only
GEN, LOW	812	785	826	794		820	846	809	882
GEN, ROA	569	785	583	794		504	458	469	210
DAY, LOW	483	372	642	532		439	551	423	882
DAY, ROA	240	372	399	532		61	85	42	88

Key: ICBM: intercontinental ballistic missile; SLBM: submarine-launched ballistic missile; GEN: generation stability; LOW: launched on warning; ROA: riding out the attack; DAY: day-to-day alert

Figure 6 shows the numbers of surviving and retaliating warheads for each state after a notional first strike against its nuclear retaliatory forces. As one might expect, the larger deployed forces offer more survivable retaliatory power than do the smaller ones. But the difference is not as meaningful as one might suppose. In the "generated alert, launched on warning" or "generated alert, riding out the attack" postures, all states can provide for over 100 second strike retaliatory weapons. Outcomes are less favorable for the smaller powers under both conditions of day-to-day or normal peacetime alert. But even then, each can deliver enough retaliatory attacks to inflict unacceptable damage by any historical precedent or standard of human decency.

What do these figures show? Simply put, just as there exists a lot of potential for ruin, so, too, there is a great deal of stability in nuclear weapons. The larger forces offer

Figure 5. Total Strategic Weapons: Constrained Proliferation Model

Total Strategic Weapons
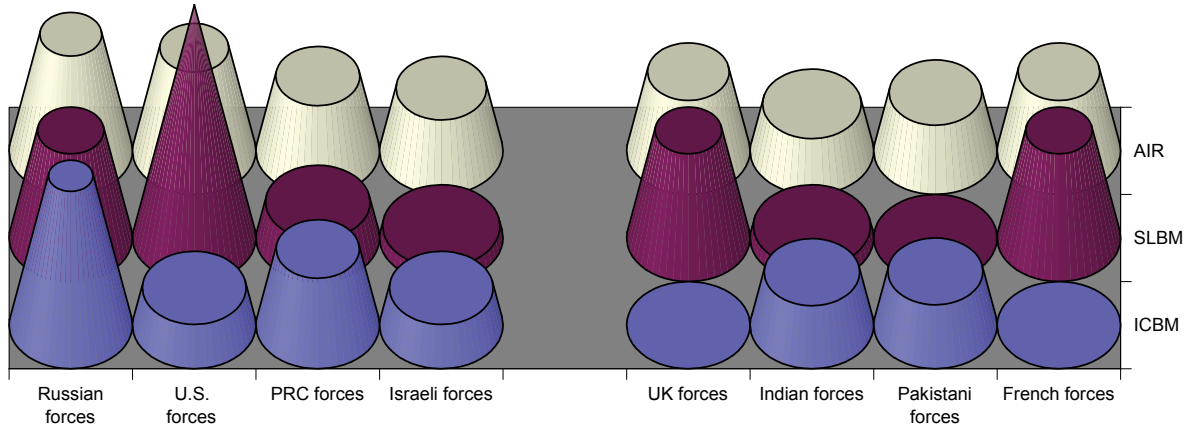
	Russian forces	U.S. forces	PRC forces	Israeli forces		UK forces	Indian forces	Pakistani forces	French forces
ICBM	400	100	204	100		0	142	144	0
SLBM	288	624	96	32		288	32	0	288
AIR	312	276	200	168		212	126	156	212

Key: ICBM: intercontinental ballistic missile; SLBM: submarine-launched ballistic missile; AIR: aircraft

Figure 6. Retaliatory Weapons: Constrained Proliferation Model

Arriving Retaliatory Weapons
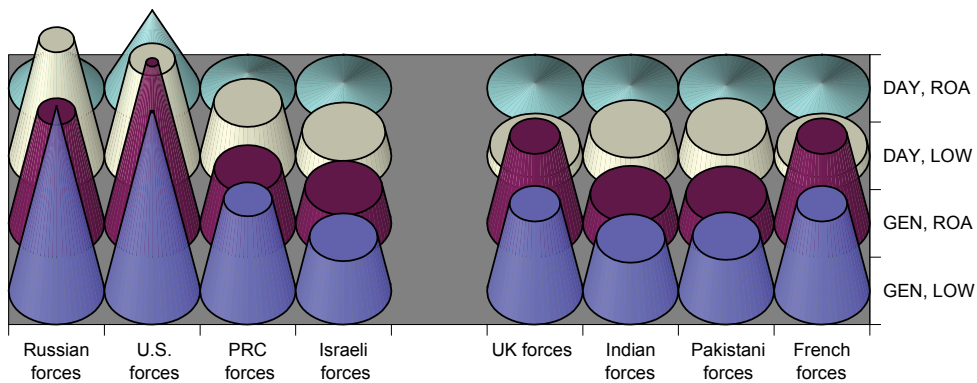
	Russian forces	U.S. forces	PRC forces	Israeli forces		UK forces	Indian forces	Pakistani forces	French forces
GEN, LOW	821	797	407	238		388	233	243	388
GEN, ROA	497	716	242	157		388	129	127	388
DAY, LOW	516	429	236	107		47	120	130	47
DAY, ROA	192	348	70	26		23	14	13	23

Key: GEN: generation stability; LOW: launched on warning; ROA: riding out the attack; DAY: day-to-day alert

more redundancy than the smaller forces, and this provides some additional measure of assurance in a crisis. However, smaller forces are not necessarily less crisis-stable than larger ones under all conditions. Much would be scenario dependent: who is attacking whom? Both smaller and larger forces can be used for provocation, for coercion, for deterrence, or for reassurance. Nor does the model take into account the impact of alliances—pre- and postattack. If, for example, Russia were to attack Britain or France, this would automatically involve a war against the United States. On the other hand, the role of other states would be more ambiguous if China launched a nuclear first strike against Russia or vice versa. America, Britain, and France would support Israel if Israel were subjected to a nuclear first strike by Iran. But British or French support for an Israeli nuclear or conventional preemption to destroy a nascent Iranian nuclear weapons capability would be less certain, and Russia would strongly oppose.

Another finding that emerges from the preceding discussion is that the attributes of

launchers or delivery systems, and the mix of launch systems deployed by each state, are important contributors to the state's degree of crisis stability. Submarine-launched weapons offer greater prelaunch survivability, and therefore increased crisis stability, compared to land-based missiles and bomber-delivered weapons. At least this was the assumption during the protracted U.S.-Soviet confrontation of the Cold War years. However, SLBMs

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larger deployed forces offer more survivable retaliatory power than smaller ones

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can also be used as first strike weapons; at least, American SLBMs have significant hard-target kill capabilities. Moreover, bombers, at least in theory, can be sent aloft and armed, but they can still be recalled before they complete their missions. They can also be equipped with air-launched cruise missiles fired from standoff ranges, thus increasing platform survivability compared to directly overflying the target.

Beyond the Numbers. Even more important than the operational performance attributes of weapons systems, significant as they are, are the psychological messages they convey relative to military deterrence, coercion, or reassurance. Think of the sizes and attributes of nuclear forces as an "influence operation" (in military jargon) or as an exercise in nonmessage diplomacy or military persuasion. Nuclear weapons have, as persuaders, an oxymoronic mission; they must convince other states that, under some exigent conditions of attack or threat, they will be used. On the other hand, other states must have confidence that this decision for nuclear first use or first strike (tactical versus strategic) will not be taken hastily. And that decision should certainly not be driven into a cul-de-sac by deployments that restrict policymakers' options in a nuclear crisis to an all-or-nothing response, or to preemptive or preventive war.

If nuclear weapons spread beyond the existing acknowledged and "accepted" eight nuclear weapons states, there is another issue related to stability and to proliferation. This

B–52s destroyed as part of 1991 Strategic Arms Reduction Treaty at Davis-Monthan Air Force Base, Arizona

U.S. Air Force (John McDowell)

study has not dealt with nuclear command and control systems, but they have two aspects that bear scrutiny. First, they must be designed to be survivable against enemy first strikes. Second, they must be proofed against two potentially lethal internal disabilities. The first possible disability is that the command and control system allows a mistaken launch either by unauthorized persons or through a technical malfunction. The second is the risk of a responsive failure in the circumstances of an actual attack from human fallibility, technical glitches, or both.[12]

The United States, Russia, and other permanent members of the United Nations Security Council have years of experience in the operation of nuclear forces. Future nuclear powers will have less. In addition to the fidelity of nuclear command systems against mistaken launches or response paralysis, there exists a deeper and more Clausewitzian problem for new nuclear states. Who is actually in charge? This question has three parts: who actually has the authority to order the release of nuclear weapons, who possesses the enabling codes or other protocols to unlock the nuclear weapons so they can be loaded and fired, and who will actually command and control the combat use of nuclear weapons once war has been authorized?

In mature democracies equipped with nuclear weapons, we know some of the answers to these questions. Other details are left deliberately vague to deny enemy intelligence pertinent information about vulnerabilities. About future and currently aspiring nuclear weapons states, we can only guess. A priori, it may not be fair to assume that new nuclear powers will be less careful with their weapons than existing states have been.[13] On the other hand, states within the military-strategic reach of fledgling nuclear powers will want to be reassured that those states have political accountability—against nuclear usurpation by the military and against domination of the military profession by revenge-seeking or apocalyptically driven politicians. Prejudgment is not necessarily fair, but military optimism is often trashed by historical fact.

Further Hypotheses

In the nexus among politics, war, and technology, much is nonlinear, and some things are even chaotic. No trajectory for Russian-American nuclear arms control after January 2009 can guarantee future success in additional arms reductions. Nor, even if successful, can the same pattern of nuclear arms reductions be assumed as transitive to successful leadership in nuclear nonproliferation. On the other hand, it is past time for the stalemate in U.S.-Russian strategic arms reductions to end. Going the last step from nuclear limitation to nuclear abolition, as various senior dignitaries and some government leaders have called for, may be premature; governments can only move incrementally in the best of times. But no longer do arguments for inertia in strategic arms reductions need to prevail, as they have in the recent past.

It is also time to reconceptualize the U.S.-Russian and NATO-Russian security relationships as positive-sum, instead of zero-sum, activities. Within this more permissive context, progress on nuclear arms reductions, on nonproliferation, and on other security issues (including energy, Afghanistan, and Iran) becomes more probable. Positive-sum politics instead of zero-sum retro would, for example, hold back on NATO expansion (at least temporarily); include Russia in missile defense activities in Europe; and exploit mutual interests in stabilizing Afghanistan and fighting terrorism. Realism is not being thrown overboard in favor of denuclearized constructivism. *Realism* in this context means having enough nuclear weapons for the requirements of national strategy, including deterrence and reassurance, but not for potlatch, pretension, or preemption.

Two dangers loom for Presidents Medvedev and Obama if they want to move beyond nuclear stasis. The arms control process must not become the prisoner of the arms control aficionados and professional bean counters who can, without adult supervision, turn progress into inertia. The second is to rush to agreement for agreement's sake, as if arms control was a ceremonial platitude divorced from interstate relations. Instead, nuclear arms control is both political and military heavy lifting. But it is also possible, as the analysis here shows, without risking stable deterrence and while creating a more proliferation-resistant world. **JFQ**

NOTES

[1] Peter Baker and Helene Cooper, "U.S. and Russia to Consider Reductions of Nuclear Arsenals in Talks for New Treaty," *The New York Times*, March 31, 2009, available at <www.timesdaily.com/article/20090401/ZNYT03/904013001?Title=U-S-and-Russia-to-Consider-Reductions-of-Nuclear-Arsenals-in-Talks-for-New-Treaty>.

[2] The phrase *press the reset button* was first used by U.S. Vice President Joseph Biden, and it received at least rhetorical approval in March 2009 from Russian President Dmitry Medvedev, who told a group of visiting American dignitaries: "The surprising term 'reset' . . . really reflects the essence of the changes we would like to see." See Mike Eckel, "Hitting reset: U.S., Russia face tough nuclear talks," Associated Press, March 28, 2009.

[3] See Jennifer Loven and Steven R. Hurst, "U.S., Russia call for nuke cuts in sweeping agenda," Associated Press, April 1, 2009; Steve Gutterman, "Analysis: Medvedev-Obama meeting a win for Russia," Associated Press, April 2, 2009.

[4] See Treaty between the United States of America and the Russian Federation on Strategic Offensive Reductions, Moscow, May 24, 2002, *Arms Control Today*, June 2002, available at <www.armscontrol.org/documents/sort.asp>.

[5] See "Geopolitical Diary: NATO's Expansion and Russia's Fears," March 13, 2009, available at <www.stratfor.com/geopolitical_diary/20090312_geopolitical_diary_natos_expansion_and_russias_fears>.

[6] U.S. Department of Defense news briefing with Secretary of Defense Robert M. Gates, March 18, 2009, available at <www.defenselink.mil/transcripts/transcript.aspx?transcriptid=4381>.

[7] Stephen J. Blank, *Russia and Arms Control: Are There Opportunities for the Obama Administration?* (Carlisle, PA: U.S. Army War College Strategic Studies Institute, March 2009), viii and passim.

[8] Alexei Arbatov, "Terms of Engagement: Weapons of Mass Destruction Proliferation and U.S.-Russian Relations," in *Prospects for U.S.-Russian Security Cooperation*, ed. Stephen J. Blank (Carlisle, PA: U.S. Army War College Strategic Studies Institute, March 2009), 139–168.

[9] Grateful acknowledgment is made to Dr. James Scouras for use of his AWSM@ model in making calculations and drawing graphs for this study.

[10] For example, see Keir A. Lieber and Daryl G. Press, "The Rise of U.S. Nuclear Primacy," *Foreign Affairs* 85, no. 2 (March-April 2006), available at <www.foreignaffairs.org/20060301faessay85204/keir-a-lieber-daryl-g-press/html>.

[11] For purposes of this illustration, strategic weapons launchers may include those with less than intercontinental ranges, depending upon the intended targets.

[12] See Peter D. Feaver, *Guarding the Guardians: Civilian Control of Nuclear Weapons in the United States* (Ithaca: Cornell University Press, 1992), 12–21.

[13] For pertinent discussion of this and related issues, see Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton, 1995).

Real Acquisition Reform

By JIM COOPER and RUSSELL RUMBAUGH

O ur nation's defense suffers from a basic flaw: although we now *fight* jointly, we do not *buy* jointly. Two recent developments offer hope, however, that the Pentagon will finally be making key procurement decisions. The announcement by Secretary of Defense Robert Gates reordering our major defense acquisition priorities is a step in the right direction. Likewise, the congressional Weapons Acquisition Reform Act of 2009 should incrementally improve the procurement process. But until we change the Services' habit of placing their parochial interests above the national interest, we will continue to get overpriced weapons systems for the wrong wars.

There are many illusions in the Potomac Puzzle Palace, but some of the most profound involve the Pentagon's massive acquisition system. This system has 50,000 private sector contractors just to oversee the activities of hundreds of thousands of other private sector contractors. First, we pretend that our acquisition decisions are made at the level of the Department of Defense (DOD). In reality, each Service buys what it wants, and the Secretary of Defense has only a handful of opportunities to influence its purchases. Second, we pretend that the Secretary of Defense submits a single, unified budget when, in truth, he submits the three Services' budgets cobbled together. Finally, we pretend that the Services' interests are the same as our

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Secretary Gates testifies before House Armed Services Committee about 2010 National Defense Authorization budget request

national interests. Although the Services are filled with patriotic men and women doing their best for their country, the Services are also bureaucracies—and bureaucracies have minds of their own.

Recent congressional efforts to obtain more realistic cost estimates for weapons systems, develop better systems engineering, and add competitive prototyping will help the acquisitions process. But we must also fix the fundamental political problem at the heart of the system, just as we fixed fundamental political problems in our approach to warfighting decades ago with the passage of the Goldwater-Nichols Act. Today, each Service places its own acquisition needs first, with few ways to resolve their disputes other than by preserving the status quo. Until we empower the Secretary of Defense to make procurement decisions and to arbitrate these disputes, we will keep getting the wrong weapons at the wrong price.

Who Runs Acquisitions?

Every Secretary of Defense seems powerful, and Secretary Gates especially so. After all, DOD accounts for roughly half of all U.S. Government discretionary appropriations and equals the rest of the world in defense spending. Secretary Gates himself has held the trust of two Presidents of different political parties. But the tenure of a Secretary of Defense has averaged less than 3 years, and it is easy to overstate even Gates' actual decisionmaking authority.

From the first Secretary of Defense onward, each has battled the selfishness of the Services, particularly when it comes to their own weapons systems. Secretary James Forrestal faced the "Revolt of the Admirals," and each of his successors has experienced less-famous mutinies. DOD has never been a monolithic organization; the Services rule. The Army, Navy, Marines, and Air Force are nominally subordinate to the Secretary of Defense, but in fact have near-sovereign independence. DOD is little more than an umbrella. Even the no-nonsense witnesses from the Government Accountability Office (GAO) routinely exaggerate DOD influence. In recent testimony, for example, GAO personnel stated that "DOD sometimes authorized contractors to begin work before . . . " and "DOD obligated nearly. . . ."[1] But the Services themselves determined 95 percent of all procurement for fiscal year 2009. In other words, DOD did only 5 percent of what GAO described.

The title of Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L) looks much more impressive than it is. When Congress asks for testimony on the acquisition process, AT&L testifies because that office appears to promulgate acquisition policy. But the only role that AT&L has—and by extension the Secretary of Defense—is to approve or disapprove Major Defense Acquisition Programs ACAT ID (Acquisition Category) programs as they move from one phase of the acquisition process to the next. These programs comprise only 14 percent of the acquisition expenditures of DOD in a year, and they are almost impossible to stop or modify once they have started. In plain English, AT&L is largely a rubber stamp.

in plain English, the Under Secretary of Defense for Acquisition, Technology, and Logistics is largely a rubber stamp

The Pentagon has less control of defense acquisitions than the Services

The Services themselves have almost complete authority over procurement outside of this one special category. For other spending, AT&L has no role at all; a Component Acquisition Executive (CAE) is in charge. Of course, in military jargon, the components are the Services that both manage and oversee CAE programs. Therefore, at least for CAE programs, the Services hold their own rubber stamp.

Of the 14 percent of acquisitions within the special category, AT&L has, at most, seven decision points. These are, as figure 1 shows:

- material development decision
- milestone A review
- milestone B review
- preliminary design review (if done after the milestone B review)
- post-critical design review assessment
- milestone C review
- full-rate production decision.

Most programs, however, enter the process at Milestone B, giving AT&L only four realistic chances to influence a program.

We pretend that defense acquisitions are done at the highest level of the Pentagon. The Services, however, control almost all of the acquisition process and naturally favor their own programs, particularly during years of rapidly increasing defense budgets. The prudence and patriotism of individual Servicemembers are no match for the needs of their own bureaucracies.

Flawed Process

Every Secretary of Defense since Robert McNamara has submitted a defense budget built mainly by the Services. Only President Dwight Eisenhower with his vast World War II military experience had the clout to try to tame the Services, and his success was mixed. Figure 2 shows the current process. The Secretary issues both strategic and fiscal "guidances" to the Services, allows each to put together its own budget, and then reviews their submissions before submitting the entire budget to the President and Congress.[2]

The Secretary's strategic or planning guidance is a classified document, internal to the Pentagon, which has been issued since the Nixon administration. Although this strategic guidance states the priorities of the Secretary of Defense, it is discouraging how little impact it actually has had on Service budgets.

Very soon after issuing his private strategic guidance, the Secretary issues his fiscal guidance to the Services, often called the *topline*. This is the total funding that each Service will receive in the next fiscal year, and it is rigorously followed for two reasons: budgets must add up, and any deviations are obvious. But these constraints only apply to the current fiscal year, which is almost meaningless for multiyear procurement. Cost overruns can easily be covered in future budgets and even portrayed as vital to national security. Revealing these overruns only hurts the sponsoring Service. And since every Service has such cost-overrun problems, a conspiracy of silence is the natural result.

although the review does maintain the appearance of civilian control of the military and can be used by an aggressive Secretary to focus on selected issues, it changes little

Once the strategic and fiscal guidances have been issued, each Service constructs its own budget under its individual topline. In fact, however, the Services' budgets originated at least a year earlier when their subordinate organizations began formulating priorities. The 4 months of summer budget-building in the Pentagon are spent shoe-horning the Services' existing years-long priorities into the Office of the Secretary of Defense's (OSD's) topline, or planning on how to fit them into the next.

Once the Services' budgets have been submitted, OSD reviews them, but this review has surprisingly little effect.[3] Secretary Melvin Laird thought this review preserved his office's power after McNamara became mired in Vietnam. The average change to Service budgets resulting from this review is less than 2 percent. Although the review does maintain the appearance of civilian control of the military and can, on rare occasions, be used by an aggressive Secretary to focus on selected issues, it changes little.

Finally, the defense budget is submitted to the President's Office of Management and Budget (OMB) for incorporation into the Federal budget. Although OMB has nominal

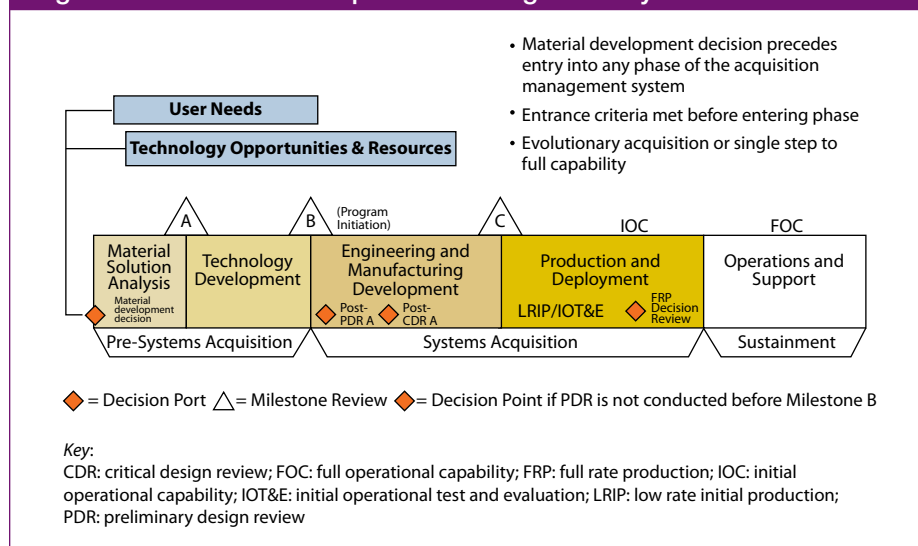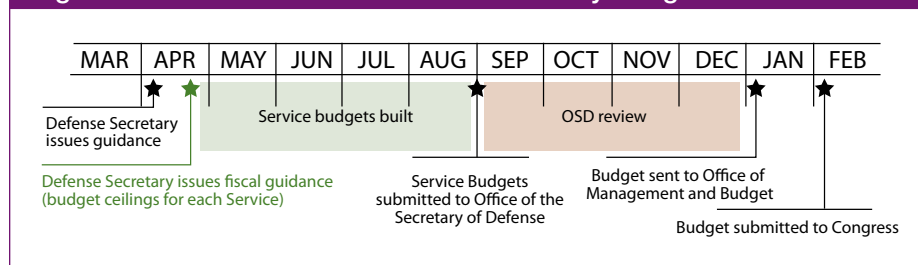Figure 1. The Defense Acquisition Management System

Figure 2. Current Process to Build U.S. Military Budget

authority over the defense budget, it traditionally conducts its review concurrently with the Pentagon's out of respect for the greater expertise and analytical power of DOD. In practice, OMB is little more than a scapegoat when a Secretary wants to blame someone for his efforts to make marginal changes in a Service's budget.

In the end, the defense budget submitted to Congress is essentially the bundling together of the three military departments' budgets. Although the Secretary has an opportunity to suggest his priorities and a chance to look over the budgets as they are submitted, the Services rarely take DOD advice seriously. Indeed, the process is almost circular because the Services influence both the formulation of the Secretary's strategic guidance and his conduct of the review. The strategic guidance requires concurrence of the Services, giving each veto power. In similar fashion, the Secretary's review is heavily influenced by panels composed of senior Service officials.

The Services come well armed to these bureaucratic battles because they can field significantly greater manpower than OSD. Each has a resourcing and accounting staff of thousands compared to a resourcing staff of about 150 and an accounting staff of about 500 for the Secretary of Defense. Already at a seven-to-one disadvantage, the 1,000 members of the Joint Staff often defer to their own Service's priorities more quickly than to the Secretary's,

particularly if he is viewed as a short-termer. The formal influence of the Secretary of Defense in the budget process is overwhelmed by the realities of the Services' power.

Some observers look at this acquisition process and see a failure of strategic guidance. If the Services are not buying what civilian policymakers want, then policymakers must have failed to issue clear instructions. This alternative argument implies that the Services keep buying Cold War–era weapons systems because they have not been told to stop. Andrew Krepinevich expresses it this way: "The importance of sound strategic guidance during a period of discontinuous change in the military competition cannot be understated. . . . Since the Cold War's end the Defense Department leadership has struggled to provide this kind of guidance."[4] He argues that the guidance has failed to respond to a changing strategic environment, causing the disconnection between forces we need and forces we have.

For decades, however, Service posture statements and budget justifications have acknowledged a changed strategic environment, although they have differed in their responses. And since at least 1992, the secret internal strategic guidance has reinforced this change message.[5] Yet the inertia continues; many of our military capabilities still resemble those of the Cold War. The problem is not in the message of change but in the deafness of

Service bureaucracies, both to the Secretary's guidance and their own posture statements.

The effort to strengthen strategic guidance has resulted in a cacophony of voices. Besides internal guidance and the Quadrennial Defense Review, Congress mandated in 1986 that Presidents produce a National Security Strategy. Most critics agree these documents have done little to change fundamental military budget priorities. Some call for more frequent guidance—as often as quarterly.[6] Many call for broader guidance to influence more than just DOD.[7] Others argue that we have excessive guidance.

All of these arguments ignore the *political* nature of the budgeting process. The guidance documents are produced with decisive input from the very organizations that they are supposed to guide. Inevitably, the guidances contain language that the Services can use to justify the status quo.

Service Choices

Despite these flaws in the strategic guidance process, the defense budget does appear sensitive to fiscal guidance. The DOD topline, or total funding for the Pentagon, increases at different rates, depending on external threats, national politics, and contractor behavior. Of course, the topline increases dramatically when the United States is involved in a large-scale overseas military conflict.

U.S. Navy (Molly A. Burgess)

Under Secretary of Defense for Acquisition, Technology, and Logistics speaks at Pentagon

Figure 3. Service Shares of the Defense Budget without War Supplementals 1973–2013

Air Force Standard Deviation = 1.74%

Navy Standard Deviation = 1.77%

Army Standard Deviation = 0.94%
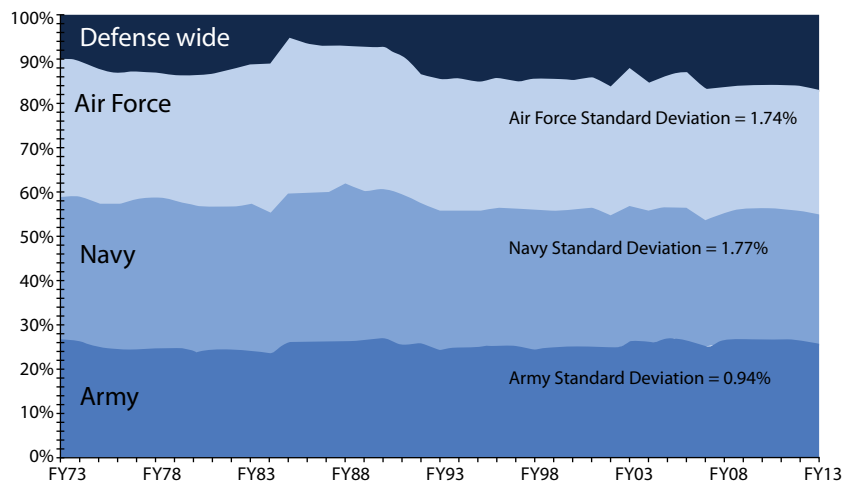
Source: Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2008* (Washington, DC: Department of Defense, March 2007), available at <www.defenselink.mil/comptroller/Docs/fy2008_greenbook.pdf>.

Looking at Service shares of the defense budget, however, rather than at overall funding level or appropriation account, reveals that each gets virtually the same share of the budget each year. Figure 3 shows each Service's share of the defense budget over time. The lines are nearly flat, with a standard deviation of less than 1.8 percent over a 40-year period. Moreover, the budget shares are nearly equally divided among the Army, Navy, and Air Force, each of which receives just under 30 percent of the defense budget each year.

One would have expected that the massive strategic or technological changes over four decades would have altered Service shares. Yet these did not change as the U.S. military went from Cold War to peace dividend to sustained irregular warfare during the war on terror. Service shares also remained frozen during the so-called revolution in military affairs and Donald Rumsfeld's efforts at transformation. If major external factors cannot change Service shares, there must be powerful internal forces at work. Simply put, *the Services adhere to their own organizational imperatives.*

Even when a Service has no major weapons system to purchase, it can invent a placeholder category such as the Army did with the Future Combat System (FCS) in order to maintain its share. Never more than a sketch, or a series of sketches, the multi-billion-dollar FCS budget plug took precedence over immediate warfighting needs, such as mine resistant ambush protected vehicles and up-armored Humvee procurement.[8]

In his seminal book *Bureaucracy,* James Q. Wilson explains why large hierarchical, civil-service organizations such as the Services pursue their own interests.[9] Facing multiple masters, resource constraints, and shifting definitions of success, bureaucracies try to limit their duties. With such simplification, bureaucracies limit the many claims laid on them and free themselves to allocate resources to achieve their limited ends. Wilson calls this "autonomy."

Morton Halperin, in his own work on national security institutions, *Bureaucratic Politics and Foreign Policy,* ties this autonomy directly to budgets:

Career officials of an organization . . . attach very high priority to controlling their own resources so that these can be used to support the essence of the organization. They wish to be in a position to spend money allocated to them in the way they choose, to station their manpower as they choose, and to implement policy in their own fashion. They resist efforts by senior officials to get control of their activities.

In particular, priority is attached to maintaining control over budgets. Organizations are often prepared to accept less money with greater control rather than more money with less control.[10]

Wilson explains that "what the Armed Forces are doing is attempting to match mission and jurisdiction. . . . A strong sense of mission implies an organizational jurisdiction coterminous with the tasks that must be performed and the resources with which to perform them."[11] By gaining greater autonomy, the Services can define their own success and produce budgets that allow them to achieve that success.

Without strong OSD oversight, the greatest threat to a Service is from a rival Service. To protect their individual autonomy, the Services reached a compromise in 1948 that minimized both inter-Service rivalry and direction from above.[12] Since the Kennedy administration reduced the Air Force's dominance of the defense budget by enlarging other Service shares, the Services have essentially made a permanent truce. They respect each other's budget shares on the condition that their own share is respected.[13] Although talk about roles and missions—reorganizing the Pentagon—continually resurfaces, this refrain does not pose an imminent threat to Service interests.[14] As the second-ranking general of the Army said last year when asked whether the shares of the budget should be adjusted: "I've testified before that this is not about, again, taking money from our other teammates because we will always go to war as a joint force."[15] By not challenging each other's budgets, the Services probably become resistant to other forms of change as well.

looking at Service shares of the defense budget, rather than at overall funding level or appropriation account, reveals that each gets virtually the same share each year

Each Service's institutional interests are evident in their acquisition programs. These biases are not simple to state. There are exceptions, but these exceptions usually prove the rule. The Air Force focuses on air superiority, preferably with piloted planes, to justify its theory of autonomous air power.[16] The Navy remains committed to independent naval forces with aircraft carriers and their escorts.[17] And the Marines are completely devoted to

Chief of Naval Operations testifies before Senate Armed Services Committee

ADM Roughead

U.S. Navy (Tiffini Jones Vanderwyst)

their own independence from the Army and every other Service (although they are incorporated in the Navy budget).[18]

None of these interests is intended to undermine the national interest, but neither are they integrated into a coherent, modern defense policy. Service interests may or may not diverge from the national interest; they are simply autonomous *from* that interest. For example, no Service has volunteered to do nationbuilding despite the acknowledged

Future Combat System has been called "placeholder" to maintain Army share of acquisition budget

need for such skills in Bosnia, Kosovo, Kuwait, Somalia, Iraq, Afghanistan, and Pakistan over the last 20 years. Occasionally, bureaucratic stubbornness can even thwart U.S. policy objectives.

Another example that many observers have noted is how the Army's fixation with large wars weakens its ability to conduct counterinsurgency and irregular warfare.[19] As the insurgency in Iraq flared in 2003 and 2004, the Army was short on patrolling vehicles such as armored Humvees but well stocked with plenty of tanks for large-scale conventional war.[20]

A Solution

We will reform Pentagon procurement only when we reduce Service roles in budgeting, preferably by empowering the Secretary of Defense. The Secretary is *key* to civilian control of the military and coordination with national security policy. He has the responsibility, and the accountability, to put the Nation's security interests first. Although this may look obvious, the reality is that many Services simply do not trust a political appointee enough to allow him to overrule their own plans. Even if they like the current Secretary, they fear that a future Secretary could harm their Service if they were to cede control. The outside political power of Service veterans and retirees is so great that the Association of the United States Army or Navy League can trump any new administration's policy. For example, this spring, the Air Force Association emailed a scary headline railing against Gates' budget decisions by calling it "A Dangerous Approach."[21]

Instead of the Secretary of Defense nudging the Services' budgets, his office should build the defense budget from start to finish. He may need authority to establish a capital budget in order to handle large weapons systems. The Secretary will need a larger staff, but that staff should not be newly hired or civilian. Military expertise must come from the Active-duty military itself. A colonel with 25 years of experience knows first-hand what commanders in the field need. The current process is skewed because the Services pursue their organizational issues, not because of lack of patriotism or expertise of individual troops. Throughout all the Services, men and women in uniform are

advancing military doctrine faster than the bureaucracies above them can adjust. They are also advancing it without the politicization that comes with promotion to general officer.

To preserve military expertise while avoiding organizational inertia, each Service's resourcing staffs should be moved to the Office of the Secretary of Defense. Joint panels of military officers should be created from the Service's resourcing staffs and overseen by a civilian political appointee—probably at the

we will reform Pentagon procurement only when we reduce Service roles in budgeting, preferably by empowering the Secretary of Defense

Deputy Assistant Secretary level. These panels will be forced to procure jointly as the operational perspectives of a variety of military officers are brought to bear. A group made up of a Navy captain, Army colonel, Marine colonel, and Air Force colonel will answer the same question differently than a group of four Army colonels. These panels of "purple suits" should be headed by a civilian OSD official to arbitrate any irresolvable differences, with appeals to the Secretary of Defense himself. Ironically, President Eisenhower proposed a more comprehensive reform a half-century ago. He advocated that anyone with rank above colonel wear a uniform common to all the Services, and that military academy cadets spend at least a year at another academy.

The reforms of the 1980s make such a procurement reform possible, even inevitable. The Goldwater-Nichols Act introduced jointness of operations to give officers an appreciation of what other Services bring to the fight, but had little impact on the resourcing process.[22] Full coordination of firepower is a force multiplier; coordination of purchasing power could be as well. Today, the same Army officer who learned about naval power at a combatant command returns to the Pentagon to fight solely for ground-based capabilities. He knows that his fellow Army officers will write the evaluation of his resourcing job. If a *combination* of Services rated that Army officer, the officer would be more likely to overcome Service parochialism. By moving Service resourcing staffs to the Office of the Secretary of Defense, we could extend the

success of Goldwater-Nichols from operations to resourcing.

Ironically, the position of Secretary of Defense was created to coordinate the Services, but 60 years later he is still hobbled by parochialism. By giving him direct control of the Services' resourcing staffs, he could develop the capability and expertise to make a real national defense budget instead of just ratifying the Services' budgets.

Secretary Gates has made progress in asserting the Secretary's preeminence over Service interests. While increasing the defense budget, he has cut programs that reflect narrow organizational interests. However, he is succeeding only by exercising great political skill. Interestingly, he is not the first Secretary to cut such programs. Donald Rumsfeld killed the Army's Crusader howitzer. Robert McNamara killed the Air Force's B–70 long-range bomber. Gates was forced to deal last spring with bureaucratic reincarnations: another Army howitzer and another Air Force long-range bomber. Old weapons systems never die; they just get repackaged.

Until the Secretary is empowered to run the acquisition and budgeting process, he will only be able to exert decisive influence through high-risk, politically sensitive interventions. Our proposal would give the Secretary the authority that the original National Security Act envisioned. Let the Secretary be the Secretary. The Services should place fighting the enemy ahead of fighting each other. Only then will we get the right weapons at the right price. **JFQ**

N O T E S

[1] Statement of John Hutton and William Solis, "Actions Needed to Ensure Value for Service Contracts," Government Accountability Office, April 23, 2009.

[2] The budget submitted to Congress is composed of four parts: one part for each of the three military departments and a fourth category that rolls together 28 separate agencies and field activities. Each of these units is treated independently and builds its own budget. Once built, each unit provides its budget to the comptroller who rolls it into the congressional appropriation accounts.

[3] Although the Marine Corps receives a separate topline than the Navy, its budget submission to the Office of the Secretary of Defense is merged with the Navy, resulting in three department budgets.

[4] Andrew Krepinevich, "Defense Investment Strategies in an Uncertain World," Center for Strategic and Budgetary Assessments, 2008, 33.

[5] Patrick Tyler, "U.S. Strategy Plan Calls for Insuring No Rivals Develop a One-Superpower World," *The New York Times*, March 8, 1992.

[6] Kathleen Hicks, "Invigorating Defense Governance: A Beyond Goldwater-Nichols Phase 4 Report" (Washington, DC: Center for Strategic and International Studies, March 2008).

[7] Clark A. Murdock and Michele Flournoy, *Beyond Goldwater-Nichols: Phase I Report* (Washington, DC: Center for Strategic and International Studies, July 2005), 27–30.

[8] "Marine Corps Implementation of the Urgent Universal Needs Process for Mine Resistant Ambush Protected Vehicles," Inspector General, Department of Defense, December 8, 2008.

[9] James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989).

[10] Morton Halperin, *Bureaucratic Politics and Foreign Policy* (Washington, DC: Brookings Institution Press, 1974), 51.

[11] Wilson, 187.

[12] The Key West Agreement, Department of Defense, Joint Chief of Staff files, Record Group 218, CS 370 (8–19–45), Section 7, Modern Military Branch, National Archives, Washington, DC.

[13] Dennis Ippolito, *Blunting the Sword: Budget Policy and the Future of Defense* (Darby, PA: DIANE Publishing, 1994), 14; and Walter G. Hermes, "Global Pressures and the Flexible Response," in *American Military History* (Washington, DC: U.S. Army Center of Military History, 2005).

[14] Colonel Richard Szafranski, "Interservice Rivalry in Action: The Endless Roles and Missions Refrain?" *Airpower Journal* (Summer 1996).

[15] General Richard Cody, testimony before the House Armed Services Committee, April 9, 2008.

[16] General Michael Moseley, *The Nation's Guardians: America's 21st Century Air Force*, Chief of Staff White Paper, U.S. Air Force, February 2008.

[17] Carl H. Builder, "Roles and Missions: Back to the Future," *Joint Force Quarterly* 4 (Spring 1994), available at <www.ndu.edu/inss/Press/jfq_pages/jfq0704.pdf>.

[18] Victor H. Krulak, *First to Fight: An Inside View of the U.S. Marine Corps* (Annapolis: Naval Institute Press, 1984).

[19] John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: University of Chicago Press, 2005).

[20] Max Boot, "The Struggle to Transform the Military," *Foreign Affairs* (March/April 2005); and Thomas Donnelley, "The Army We Need," *Weekly Standard*, June 4, 2007.

[21] *Air Force Magazine* Daily Report, May 7, 2009.

[22] James R. Locher III, "Taking Stock of Goldwater-Nichols," *Joint Force Quarterly* 13 (Autumn 1996), available at <www.ndu.edu/inss/Press/jfq_pages/0513.pdf>.

Integrating CONOPS into the Acquisition Process

By JOHN P. JUMPER, DAVID A. DEPTULA, *and* HAROLD B. ADAMS

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The phrase *concept of operations* (CONOPS) has been interpreted in many ways. Its most useful manifestation is when a CONOPS reveals how the horizontal integration of joint capabilities can produce the effects intended by the joint commander. Its least useful—yet most common—manifestation is when a CONOPS is created to justify or rationalize one specific platform or program.

When applied properly, a CONOPS leads the acquisition process by forcing us to decide how we are going to fight before we decide what we are going *to buy* to fight

with. By making CONOPS a living exercise, we introduce the temporal dimension—the potential of systems deemed important in a current acquisition over extended periods of time—remembering that acquisition decisions made today must be useful to commanders 30 or 40 years from now. One need not be convinced of the lingering value of the B–52 that communicates directly with special operations forces or is equipped with its own targeting pod and precision weapons. The original CONOPS for the B–52 was focused on the strategic nuclear mission, but as mission needs transitioned into modern applications, the idea that global range in the

Marines patrol in mine resistant ambush protected vehicle in Afghanistan

U.S. Marine Corps (Joseph R. Breinlinger)

Cold War could be traded for persistence in counterinsurgency operations (with a large precision payload) was one born of progressive CONOPS developed by mission-oriented commanders and tacticians. By any definition, however, the U.S. military's efforts to date to integrate CONOPS into the acquisition process have been of middling success.

Case Study: The UAS

There is no better example than the way we have approached acquisitions for unmanned aircraft systems (UAS). Early on, the UAS debate was swallowed by emotional but irrelevant worries about replacing manned aircraft. The convenient indictment was that UAS are resisted by pilots or that their value was avoidance of dangerous exposure to threats. Unguided by a coherent joint CONOPS, we have, by turns, reached either too far with UAS or not far enough. Today, the battlespace is saturated with a wide variety of UAS platforms while complaints persist down to the lowest tactical level that timely support is not available. The unfortunate debate has centered on emotional disagreements about ownership of platforms rather than integration of information. What seems obvious is that a joint CONOPS, backed by an integrating technology, would reveal that the number of platforms is not the issue.

We need a joint theater CONOPS to integrate appropriate UAS capabilities for all our forces in the joint force at the right place at the right time in a way that optimizes utility—a CONOPS that fields an immediate integration capability for the current situation, on an emergency basis, followed by policy that insists on an operationally developed CONOPS to lead the acquisition process.

Consider the case of the X–45. The platform-centric argument was that this unmanned fighter would be a candidate to replace the F–16. Stealth would be its main defense. While understandable from the perspective of wanting to develop an unmanned fighter platform—a worthy enough goal— this particular platform was impractical from a CONOPS perspective. The employment called for the platforms to be stored and deployed in containers aboard transport aircraft, then assembled, test flown, and loaded with weapons before being ready for combat at the receiving base—not the picture of rapid airpower. The assumption that

transport aircraft would be available did not comport with any existing war plans, and the use of stealth as its only defense made it vulnerable to any visual system during daylight.

The F–16, on the other hand, could self-deploy with weapons and fly directly into combat 24 hours a day. It was hard to imagine that commanders would prefer the lesser capability just because it was unmanned. The procurement of a limited number of X–45s for the purpose of developing integration protocols, unmanned air refueling, and command and control, and for generally advancing the technology, was a much better idea.

Search for a Construct

So what would be a useful construct for a next-generation joint CONOPS for UAS? First, it has become evident that the proliferation of many sizes and shapes of UAS is still *not* delivering what is needed. The most reliable UAS coverage comes from vehicles that

operations, and space platforms, sensors, or operators that can produce target-quality location and identification. This means UAS platforms that do not blow away at operational altitude when the wind blows faster than the platforms' maximum speed (as is the case with many hand-launched vehicles); vehicles that traverse a reasonable distance to react to emerging or time-sensitive situations; and, equally important, a command and control system that can shift UAS resources around the battlespace to respond to commander priorities.

Second, the next-generation CONOPS should be agile enough in tasking and employment to serve both traditional intelligence collection—that is, the tedious but necessary cycle of "collect, analyze, report" that yields the battlefield forensic data necessary to understand and anticipate—and then seamlessly shift to direct engagement—the real-time targeting cycle—when priorities dictate.

the unmanned aircraft systems debate was swallowed by emotional but irrelevant worries about replacing manned aircraft

U.S. Air Force (David H. Lipp)

U.S. Customs and Border Protection agent pilots Predator B UAS to assess flood threat in North Dakota

offer access to multiple sensors (working day/night through any weather) and good persistence and that communicate seamlessly with the variety of air, land, maritime, special

Third, a new CONOPS could help clearly define the next generation of UAS operators. The time has come to move away from the idea that a fully qualified pilot

is required to fly a UAS while remaining sensitive to the requirement that pilot-like knowledge is needed to operate in shared airspace, control zones, restricted areas, and within the rules of an airspace control authority. Thus, it is reasonable to assume that the next-generation UAS operator must possess entry-level pilot knowledge, battle management skills, and the appropriate qualifications to assume responsibility for compliance with rules of engagement. These skills include appropriate warrior credentials to assign both responsibility and authority for weapons guidance or release. A challenge will be to appropriately adjust Federal Aviation Administration and International Civil Aviation Organization rules and regulations

Airmen load AFM–114 Hellfire missile onto MQ–1B Predator UAS in Iraq

to safely integrate UAS into national and international airspace using such UAS operators without requiring the traditional pilot ratings.

Logically, this would all come together using a combined mission planning/mission execution system where the vehicle is flown by the autopilot and repositioned by mouse clicks. Technology would assist in planning and executing mission tasks by displaying optimum routes, search patterns, weapons envelopes, required coverage, number of required vehicles, and so forth—with human intervention always possible but not always

necessary. Multiple vehicles could be under the control of a single operator or crew (depending on the mission), and communication among crews could allow shifting of resources to cover emerging priorities.

If we were to embrace a truly joint approach, it is not difficult to imagine how the construct described above would evolve beyond UAS and be insensitive to the location or type of sensor at the end of the

the most recent examples of the QDR have become more of a program *review than a* strategic *review*

operator's tether. The operator could at any time, and with appropriate authorizations, bring any needed system into the network as required to verify (for example, request signals intelligence or other information), bring additional firepower (call the bomber or fighter formation), and observe more closely (using space, ground, or hovering platform capabilities).

QDR Role

Without question, the Quadrennial Defense Review (QDR) will play an important role in determining the next steps in

UAS application as critical elements of our nation's defense. Unfortunately, the most recent examples of the QDR have become more of a *program* review than a *strategic* review, aggravating Service rivalries in competition for programs rather than inviting the real, integrative CONOPS that would produce cooperative results. The consequence is that the Services prepare for the QDR for 2 years and then spend 2 years repairing relationships.

Specifically, the QDR should direct that the Services produce joint CONOPS for joint employment of UAS rather than decide on platforms and programs. Strategic direction—perhaps the Joint Requirements Oversight Committee could be directed to oversee CONOPS development—would be for CONOPS to drive capabilities and then requirements in a way that keeps the acquisition *process* in the acquisition *business* and away from having to create CONOPS based on platform justification.

If done properly, the introduction of a joint, integrating CONOPS into the acquisition process for unmanned systems will produce an understanding that real jointness is about using the right force at the right place at the right time. Real jointness will deliver systems that promote Service and component interdependence over Service or component dominance.

In an era of decreasing resource availability for the Department of Defense, Service interdependence will be not an option, but a requirement. Achieving Service interdependence requires making decisions that bring the full power of air, land, sea, space, and cyberspace competencies to bear with minimum overlap and redundancy.

Finally, our actions must account for the fact that today's procurement decisions will define capabilities for the next 35 to 40 years. Just as today's operational concepts are guiding the modern utility of platforms and systems that were procured in the 1950s, 1960s, and 1970s, future commanders will depend on the right balance of capabilities—decisions being made today—to accommodate future contingencies. **JFQ**

Armed MQ–9 Reaper unmanned aircraft system in shelter at Joint Base Balad, Iraq

Moving Toward a Joint Acquisition Process to Support ISR

By DEL C. KOSTKA

I n 2004, the U.S. Army issued a Critical Mission Needs Statement for a fleet of new unmanned aircraft systems (UAS). The Sky Warrior, as the platform was called, would be the Army's premier extended range, multipurpose UAS to support ground operations. The Army subsequently prepared an operational requirements document to specify performance criteria for the Sky Warrior and submitted its request to the Joint Requirements Oversight Council (JROC), an all-Service panel that conducts requirements analysis, validates mission needs, and recommends priorities for funding.

The request was immediately challenged by the council's Air Force representa-

tive. In the Air Force's opinion, its existing MQ–1 Predator UAS, operationally deployed since 1999 and a seasoned veteran of Operations *Enduring Freedom* and *Iraqi Freedom*, could meet all of the Army's requirements with minimal modification.[1] The Army countered that the Air Force's objection was actually a veiled attempt to retain operational control of the air space and be recognized as the "executive agent" for medium- and high-altitude UAS across the entire Department of Defense (DOD).[2] After much debate, the JROC approved the Army's requirement for a new multipurpose UAS despite vigorous opposition from the panel's Air Force contingent.

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By early 2007, the Sky Warrior disagreement had reached a boiling point. On April 19, a congressional hearing convened to review Service budget requests for UAS. The meeting quickly dissolved into a quagmire of questions and confusion. "Who is in charge?" and "Where is the authority?" asked Representative Neil Abercrombie (D–HI), Chairman of the House Armed Services Air and Land Forces Subcommittee. The answer from the Government Accountability Office was that no one in DOD was exercising effective control over the Services' competing programs.[3]

Finally, after 3 years of bickering, the Office of the Secretary of Defense had heard enough. On June 13, 2007, Deputy Defense Secretary Gordon England issued a memorandum upholding the Army's procurement rights for the Sky Warrior, but directing the two Services to form a "joint integrated product team" combining the Predator and Sky Warrior efforts into a single acquisition program.[4] The Army and Air Force have agreed to cooperate in fielding the next generation of medium-altitude, multirole UAS, but the contentious, stovepiped nature of the intelligence, surveillance, and reconnaissance (ISR) acquisition process remains.

The Problem

The inter-Service rivalry over the medium-altitude UAS platform is symbolic of an antiquated funding and acquisition process that does not adequately coordinate, consolidate, and manage the rapidly expanding ISR enterprise. To put it succinctly, DOD does not have a joint, cohesive process to define and validate ISR requirements or efficiently acquire new systems to support warfighter needs.

The significance of this shortfall is immense. Without a unified investment management approach, each Service has aggressively pursued independent ISR capabilities that are tailored to their own unique missions. The Services are not required to jointly develop new ISR systems,[5] and there are vast discrepancies in the way Service requirements are vetted, prioritized, and funded. Efforts to integrate ISR capabilities across DOD are hampered by diverse organizational cultures, independent requirements processes, and different funding mechanisms. As a result, the complex acquisition process through which DOD identifies, procures, and implements advanced ISR systems is characterized by gaps

in capabilities, growing competition for assets, and systems that do not fully complement one another.[6]

While the symptoms and impacts of the ISR acquisition process are easy to identify, the exact causes are somewhat harder to determine. Without question, the current process is rife with inefficiencies at virtually every level. Based on the research outlined in this article, the challenges facing the ISR acquisition community manifest themselves in three broad problem areas:

■ DOD does not have a comprehensive vision or strategy for the ISR enterprise.
■ There is no unified ISR management mechanism to weigh the relative costs, benefits, and risks of proposed investments.
■ The current ISR acquisition process promotes requirements definition by individual Service components, which may not have insight into enterprise-level priorities or viable alternatives to acquire the needed intelligence.

> *the Services are not required to jointly develop new ISR systems, and there are vast discrepancies in the way Service requirements are vetted, prioritized, and funded*

The purpose of this article, then, is to assess and verify these three challenges facing the ISR acquisition community and to recommend changes to improve the integration of ISR capabilities across DOD and national intelligence agencies. The objective is to advocate a joint DOD acquisition process that ensures future ISR investments reflect enterprise-level priorities and strategic goals, while providing a cost-effective baseline of advanced ISR tools, platforms, and capabilities to support tactical operations.

Many organizations play a role in identifying ISR requirements, managing assets, and developing new capabilities. National intelligence agencies such as the National Reconnaissance Office, National Security Agency, and National Geospatial-Intelligence Agency play a vital role in supporting the DOD combat mission and are aligned under both the Secretary of Defense and Director of National Intelligence (DNI). Although the scope of this article is limited to the DOD ISR acquisition process, the national assets are a

key component of this examination due to their potential to substitute for or supplement portions of the tactical ISR mission.

ISR Requirements

DOD and the DNI have separate processes to identify future requirements. In the Defense Department, proposals for new ISR capabilities are developed by either the combatant commands or by the individual Services and then submitted to the Joint Capabilities Integration and Development System (JCIDS) for vetting.[7] Within the DNI, proposals for new capabilities are developed by the national intelligence agencies and vetted through the Mission Requirements Board (MRB). Although there is rudimentary coordination between JCIDS and MRB, no standard process exists to determine which DOD proposals will be reviewed by MRB or what criteria will be used to conduct such reviews.[8] The lack of protocol in vetting coincident requirements often puts DOD and DNI at odds. For example, in 2008, JCIDS reviewed a U.S. Central Command (USCENTCOM) requirement for increased surveillance capabilities and determined that the shortfall would be best met by increasing the number of UAS available to the USCENTCOM Service components. MRB determined the exact same requirement could be addressed by efficiency gains in other surveillance methods.[9]

Despite DNI willingness to support tactical missions with national assets, many DOD requirements sponsors are reluctant to consider national systems as an alternative.[10] There are a variety of reasons why DOD insists on acquiring in-house ISR capabilities when national agencies offer a viable alternative. For one, no single source of information exists that specifies the capability and availability of national assets, and even if there were, many in the DOD community lack the security clearance needed to evaluate and select national systems.[11] Trust and control are also an issue, as many within the DOD community are apprehensive about dependence on other system owners.[12]

Defense Acquisition Structure

The DOD defense acquisition structure consists of three interrelated systems that can be described in broad terms as requirements generation, resource allocation, and acquisition management. As mentioned previously, the requirements component is known as JCIDS. Created in 2003, JCIDS is a

DOD-level collaborative process for identifying, assessing, and prioritizing warfighter requirements.[13] Resource allocation is determined through the Planning, Programming, Budgeting, and Execution System, which is the framework through which JCIDS-vetted requirements are evaluated relative to other DOD needs and budgeted in accordance with strategic guidance and fiscal constraints.[14] The third component of the DOD defense acquisition structure is the Defense Acquisition System. As the name implies, this system is the management process by which DOD initiates and oversees the actual procurement of new technologies and programs. The complexity of this three-step process combined with the magnitude of personnel, activities, and funding involved in its operation can result in problems such as redundancy, inefficient operations, fraud/waste/abuse, and inadequate enforcement of laws and regulations.[15]

In DOD, ISR requirements and need statements can be developed by defense agencies, combatant commands, or individual Services in accordance with Title 10 responsibilities to train and equip forces.[16] Prior to its submission into JCIDS, a new ISR requirement must be reviewed and approved by the JROC, a department-level panel chaired by the Vice Chairman of the Joint Chiefs of Staff and including the Vice Chiefs of the Army, Air Force, and Navy, and the Assistant Commandant of the Marine Corps.[17] The charter of the JROC is to assist the Chairman of the Joint Chiefs of Staff in identifying and prioritizing new requirements, consider alternatives to the stated need, and ensure that the priority assigned to the new requirement reflects established strategic guidance.[18] To assist in vetting ISR requirements, the JROC has a special subpanel known as the Battlespace Awareness Functional Capabilities Board.[19] But the JROC does not have any insight into the budgeting process to ensure that JROC-validated programs are adequately funded, nor is there an oversight mechanism to ensure that the Services spend appropriated funds the way the JROC intended.[20]

It is important to note that requirements definition, submission, and vetting comprise a "capabilities-based" process, meaning the combatant command or requirements originator submits the capability shortfall it wishes to address along with the minimum performance criteria needed for the eventual solution. The actual material solution for the submitted requirement is determined by a

Functional Solution Analysis,[21] which is the final output of the JCIDS process. In a capabilities-based system, requirements originated by the combatant commands or Service components must be as descriptive and accurate as possible, and baseline performance criteria should be articulated in standard terms and common frames of reference.

Funding Requirements

For budgeting purposes, the various systems that collect, process, and disseminate intelligence are grouped into two major categories of programs, the National Intelligence Program (NIP) and the Military Intelligence Program (MIP). The categories are based on

Six images on MQ–1 Predator represent number of AGM–114 Hellfire missile shots in combat

U.S. Air Force (Larry E. Reid, Jr.)

the customer being served, different management arrangements, and different oversight entities in Congress.[22] The NIP encompasses those strategic intelligence programs that specifically support national-level decision-making.[23] NIPs are allocated among national intelligence agencies such as the Central Intelligence Agency, Defense Intelligence Agency, National Reconnaissance Office, National Geospatial-Intelligence Agency, and National Security Agency.[24] The MIP includes those programs that serve the ISR needs of DOD. Some

MIP programs are the responsibility of a single defense agency while others are managed by one Service as an "executive agent" for DOD.[25]

The DNI has overall responsibility for preparing NIP budget submissions based on priorities established by the President and with input from the national intelligence agencies.[26] The DNI also participates in the development of the MIP by the Secretary of Defense. Conversely, the Undersecretary of Defense for Intelligence (USD[I]) serves as the MIP Program Executive and also ensures the NIP budget is compliant with DOD strategic objectives.[27] Thus, the DNI and USD(I) play an essential role in the development of both the NIP and MIP. Yet these organizations have limited time and resources and have difficulty reviewing budget requests thoroughly.[28]

the complexity of this three-step process can result in redundancy, inefficient operations, fraud/waste/abuse, and inadequate enforcement of laws and regulations

As ISR technologies continue to evolve, the distinctions between the National and the Military Intelligence Programs become increasingly blurred. Some missions, such as space-based radar, are already shared by national and military process owners.[29] Although these mission interdependencies offer substantial opportunities for increased fiscal efficiency, the current budget process presents a number of significant challenges. One is the unintended

consequences of budget adjustments. For example, the elimination of a MIP-funded reconnaissance platform might require a new reliance on a national sensor, which would now be underfunded to perform the additional tasking.[30] Shared funding arrangements present fiscal opportunities, but they have also caused rifts and schedule delays as one entity protests the percentage of funding that it has to provide relative to the other.[31] Also, requirements that are uniquely joint are slow to be identified and filled when no specific Service has the responsibility to initiate a needs statement.[32] Even when potential efficiencies are identified, determining a consolidated plan for funding and operations can be a challenge. For example, space platforms are budgeted under NIP and operated by the national intelligence agencies. The Global Hawk UAS, on the other hand, is budgeted under MIP and operated by the Air Force. These separate paths make it difficult to assess overlaps in capabilities, study tradeoffs, and synchronize operations.[33]

To further complicate the management and coordination of ISR programs, some elements within DOD have turned to supplemental appropriations to obtain intelligence assets that they did not get through the established budget and planning process.[34] One such appropriation vehicle is the Defense Emergency Resource Fund, an initiative that allows DOD to shift funds from a generic counterterrorism fund to specific subaccounts.[35] Although the supplemental appropriation mechanism often results in a Service obtaining a much-needed capability, the practice undercuts the established budgeting and oversight process, making it difficult to weigh tradeoffs and adjust priorities. It also impedes long-term planning and has an erosive effect on efforts to consolidate resources.[36]

The total fiscal budget for ISR programs is difficult to assess due to the classified nature of programs, but the 2008 funding for the national intelligence systems alone exceeded $47 billion.[37] With that type of massive expenditure, the need for operational efficiency and sound decisionmaking is critical. Unfortunately, the current system provides little opportunity to compare costs or make efficiency tradeoffs.

Acquisition Challenges

The unparalleled complexity of the DOD defense acquisition structure lends itself to an abundance of problematic issues.[38] In general terms, the challenges facing the ISR acquisition community can be consolidated into three basic problem statements.

DOD does not have a comprehensive vision or strategy for the ISR enterprise. The lack of a clearly defined, cohesive strategy to guide ISR investments has been a highly visible area of concern for many years. In 1995, the Senate Select Committee on Intelligence recommended a joint review by the Director of Central Intelligence (DCI) and Deputy Secretary of Defense to ensure both DOD and the Intelligence Community were being equally served in the planning, programming, and management of intelligence activities.[39] The 1997 Intelligence Authorization Act included provisions that strengthened the ability of the DCI to participate in budget development for defense-wide and tactical intelligence.[40] As part of the 2004 National Defense Authorization Act, Congress directed the Office of the USD(I) to develop a comprehensive "roadmap"

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to guide development and integration of DOD ISR capabilities for fiscal years 2004 through 2018. It also called for the creation of an ISR Integration Council to address ISR integration and coordination issues in conjunction with DCI and to contribute to the design of the ISR Roadmap.[41]

Released in 2005, the ISR Roadmap has provided a multitude of benefits to DOD and the Intelligence Community. First, it has provided a catalogue of both existing and planned ISR systems to help guide investment decisions. It also outlined six specific strategic goals for the future ISR enterprise:

- converge DOD capabilities
- attain persistent surveillance
- achieve horizontal integration of intelligence information
- achieve a collaborative network-centric distributed operations infrastructure
- transform ISR management capabilities
- operationalize intelligence.[42]

Although the ISR Roadmap defines strategic objectives in broad terms, it does not specify future ISR requirements, identify funding priorities, or define a vetting mechanism to ensure Service ISR investments reflect the overall strategy.[43] In short, DOD still lacks a clearly defined vision of the future ISR enterprise to guide its ISR investments.[44]

There is no unified ISR management mechanism to weigh the relative costs, benefits, and risks of proposed investments. The JROC is the current enterprise-level entity for vetting requirements and addressing capability shortfalls across DOD. The agencies, combatant commands, and Services present their mission need statements to the JROC, which then evaluates each candidate requirement on a case-by-case basis. The JROC focus is on Service need and shortfall, however, rather than the capabilities needed to fulfill the mission.[45] Neither the JROC nor its subpanels have the time or technical expertise to fully explore potential options for addressing the ISR capability shortfalls. Also, there is no mechanism in place to identify options, capability gaps, or duplication of effort.[46]

To provide decisionmakers with a mechanism to compare and contrast Service requirements, DOD is compiling an inventory of functional activities known as the Joint Capability Areas (JCAs). Initiated in 2005, the JCAs are a set of standardized definitions of DOD capabilities that are divided into manageable categories.[47] The intent of the JCAs is to establish a common doctrinal language to define needs, analyze gaps in capability, and identify areas where there may be an excess of capabilities.[48] The JCAs have provided a basic framework to evaluate competing Service requirements on a comparable basis.

The JROC and JCAs provide positive momentum toward managing ISR investments from a joint enterprise-level perspective rather than from a single Service point of view. However, DOD as a whole has not established the criteria and methods to identify the best return on investment in light of strategic goals.

The current ISR acquisition process promotes requirements definition by individual Service components that may not have insight into enterprise-level priorities or viable options to acquire the needed intelligence. Since the Goldwater-Nichols Act, the Armed Forces have made extraordinary progress in moving toward a joint and seamless force. Yet this synergy has not extended into the areas of ISR acquisition and management. Entities such as JROC review and validate

funding priorities but have little input into the definition of requirements. Nor does JROC have any oversight of the budgeting process to ensure that its own validated requirements are adequately funded.[49] The Services are ultimately responsible for justifying funding priorities before Congress and maintain both ownership and budgetary control over the resulting ISR assets.

Service ownership of ISR assets presents a number of inherent challenges. First, Service-oriented planning does not consider the full range of solutions available to fulfill operational requirements. At the Service level, requirements managers often lack knowledge about national systems and can even lack the security clearance needed to review and evaluate capability options using national assets.[50] Some process owners have had prior difficulty in tasking national satellites and have complained of poor quality imagery.[51] There is also reluctance on the part of some DOD requirements sponsors to consider national ISR systems as an alternative because they simply do not want to be dependent on another system owner.[52]

At times, Service-based requirements managers have also demonstrated unrealistic expectations of new ISR capabilities and have submitted requirements not consistent with technical levels of maturity.[53] Requirement managers who incorporate ISR technologies that are in the early stages of development increase both the risk and cost of the program, often without any significant enhancement in capability.[54]

A third issue involving Service-oriented ISR planning can be loosely described as "unintended consequences." Many Service-level ISR assets began development without a long-term plan to manage and sustain their programs. As a result, funding and resources are directed toward short-term needs or "gluing" ill-suited and disparate components together in an attempt to force jointness. Also, schedule delays in some programs have forced the Services to make unplanned investments in legacy systems to keep them active longer than expected.[55]

Perhaps the best example of a troubled acquisition program's cascading effect on legacy systems is the Air Force Global Hawk high-altitude UAS. At a cost of $10 million per copy, the Global Hawk was intended to provide cost-effective reconnaissance capabilities similar to the aging U–2 manned

funded a $75-million-per-copy upgrade of the initial Global Hawk that includes greater payload and a more robust signals collection capability, but the resulting schedule delay has forced the Air Force to maintain the U–2 program far beyond its projected retirement.[58]

Recommendations

The current DOD acquisition process discourages the consolidation and integration of capabilities across the ISR enterprise. Since requirement and budget definitions are based on stovepiped applications, ISR system developers are forced to integrate capabilities after the fact rather than design efficient and holistic systems from the start. Congress has recognized this deficiency and authorized several significant enhancements to the acquisition process. In 2003, the capabilities-based JCIDS was implemented to submit,

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to provide decisionmakers with a mechanism to compare Service requirements, DOD is compiling an inventory of functional activities known as the Joint Capability Areas

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platform. The Global Hawk provides an operational advantage over national satellite assets in that it can be tasked by local commanders and launched on demand.[56] Unfortunately, the initial acquisition program had significant shortcomings, as the platform proved to be underpowered and lacked a signals intelligence capability.[57] The Air Force has now

review, and validate requirements. The 2004 National Defense Authorization Act directed the USD(I) to develop the ISR Roadmap and created the ISR Integration Council to integrate and coordinate programs across the ISR enterprise. Congress has also restructured the intelligence appropriations process to ensure coordination by the DNI and USD(I).

Less drastic modifications could also improve the integration and coordination issues that are at the heart of the ISR

Army technicians inspect Shadow 200 unmanned aircraft system upon completion of mission in Afghanistan

U.S. Army (Andrya Hill)

acquisition dilemma. The following recommendations outline three initiatives that the DOD acquisition community could implement to mitigate shortfalls in the current ISR procurement environment. These suggestions are not without controversy, since implementation would inevitably require coordination, resource-sharing, and potential loss of decision authority by select DOD elements. The recommendations are not mutually dependent, however, and can be considered in aggregate to address portions of the ISR acquisition conundrum.

Define an Overall Enterprise Architecture for ISR. A critical shortfall in the current ISR acquisition environment is the absence of a comprehensive and clearly defined enterprise architecture. Without a documented enterprise architecture model, Service requirements managers are essentially making decisions based on their personal perception of the ISR enterprise, which is often not in alignment with the other Service components or the overall strategic direction of DOD.

Within the DOD ISR community, a physical enterprise architecture for interoperability is provided by the Distributed Common Ground System (DCGS), which is a Web-based global intelligence-sharing network that spans the military Services and defense intelligence agencies.[59] Included in the DCGS model is a set of open interface standards known as the DCGS Integration Backbone, which provides a common framework to ensure interoperability, data-sharing, and collaboration among all elements.[60] Although the DCGS outlines a conceptual framework to ensure new ISR capabilities can interact, it does not provide the holistic enterprise architecture in the systems engineering sense needed to assess requirements for new capabilities and make sound investment decisions.

In the systems engineering discipline, an enterprise architecture is simply a documented model of an organization's current (as is) state, its target (to be) state, and a sequencing plan for moving between the two.[61] In addition to a thorough inventory of strategic assets, an ISR enterprise architecture would define organizational components of the ISR enterprise and the interrelationships and interdependencies of those organizations. It would define the ISR mission of each component and document the information needed to achieve that mission. An enterprise architecture would also document a transition

process for implementing new technologies in response to changing mission needs.[62]

A managed ISR enterprise architecture would offer benefits to planners, decisionmakers, and those responsible for defining ISR requirements at the Service level. An enterprise architecture would improve communication by providing a standardized vocabulary throughout the ISR community of users. It would provide a mechanism to weigh the benefits and impact of new requirements and support analysis of alternatives, risks, and tradeoffs. It could also help planners discover opportunities to share ISR assets across the enterprise and identify gaps in the current infrastructure that prohibit the sharing of resources.[63]

An enterprise architecture is a living document, so one organization would be tasked with development, implementation, and maintenance of the enterprise architecture lifecycle. A key provision, however, would be full participation and investment by the Service components to document their

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mission and operations, describe their vision of the future, and help outline an investment and technology strategy for accomplishing their objectives. It is also essential that the ISR enterprise architecture be coordinated and endorsed by the Service chiefs, USD(I), and DNI to ensure ISR acquisition activities are consistent with the strategic vision of DOD and the Intelligence Community.

Establish Standards and Baseline Capabilities for Sensor Development. At one time, the U.S. defense establishment only acquired systems and equipment that adhered to rigid military specifications and standards. In order to incorporate the rapid expansion of technology over the past quarter century, the defense acquisition community has now adopted an open systems development approach based on commercial specifications and standards. Although the open systems approach has enhanced the performance and capabilities of individual systems, it has also shifted the burden of specification adherence from the

acquirer to the developer.[64] This, coupled with fairly loose definitions of open systems standards, has allowed vendors to deliver their own proprietary solutions to performance requirements that are not as open as they appear to be on the surface. The development and documentation of baseline standards specific to the ISR enterprise would dramatically enhance the affordability and interoperability of ISR systems across the enterprise.

The term *standards development* is generally applied to computer systems and network protocols. In actuality, all systems have structures that allow their components and subsystems to work together to achieve the required functionality. Adherence to a well-documented set of baseline standards during the design phase of ISR systems development allows these structures to interact and results in substantial cost savings, interoperability, and efficiency benefits over the life cycle of the program. Although the main goal of baseline standards is interoperability, a standards-based systems development approach could also be applied to database format, data schemas, operating systems, and graphic user interface models. Standardization of this nature reduces development costs, encourages higher levels of performance, provides greater adaptability to evolving requirements, and lowers the risk of technology obsolescence.[65]

Establish a Joint ISR Requirements Agent for DOD. The Intelligence Reform Act of 2003 consolidated ISR program evaluation, assessment, and recommendations under the USD(I).[66] Although this effort reflects a more centralized and coordinated approach to ISR acquisition, actual requirements for ISR capabilities are still originated and defined in accordance with DOD legacy procedures. The establishment of a joint requirements agent to help validate capability gaps and oversee the definition and preparation of requirements would substantially enhance USD(I) oversight of ISR acquisition programs.

A viable candidate for a joint ISR requirements agent is U.S. Strategic Command (USSTRATCOM). In 2003, USSTRATCOM was given the responsibility to plan, integrate, and coordinate ISR in support of DOD operations. To execute this responsibility, the command established the Joint Functional Component Command for Intelligence, Surveillance, and Reconnaissance (JFCC–ISR),[67] whose current role is to match customer mission requirements with existing ISR assets and synchronize DOD,

national, and allied ISR collection efforts.[68] Expanding its role to include the validation and preparation of new operational and functional requirements would utilize USSTRATCOM's knowledge of existing ISR assets.

A second option for a joint ISR requirements agent is U.S. Joint Forces Command (USJFCOM). Under this proposal, combatant commands and Service components would be tasked to define requirements and compile mission need statements in conjunction with ISR subject matter experts at USJFCOM. By channeling all new ISR requirements through the command, DOD would take advantage of USJFCOM's established infrastructure for developing, evaluating, and prioritizing interoperable systems.[69] As the existing DOD authority for joint concept and capabilities development, USJFCOM would provide the USD(I) with a ready mechanism to ensure future ISR requirements are defined in accordance with enterprise-level priorities rather than Service-specific opinions.

This article provides a cursory overview of a DOD acquisition environment that struggles to coordinate, consolidate, and manage the rapidly expanding ISR enterprise. It reviews the complex defense acquisition structure, outlines the challenges facing the acquisition process, and recommends changes to improve the integration of new capabilities across the ISR community. None of these suggestions, however, is as important to the goal of an improved joint ISR acquisition process as leadership and the will to implement change. Both DOD and the Intelligence Community have a vested interest in securing a holistic acquisition process that ensures ISR investments reflect enterprise-level priorities. Together, they need to communicate their strategic goals for the acquisition and distribution of ISR resources, clearly map out a plan to achieve these goals, and hold people accountable for meeting them. These are essential ingredients to implementing change and taking full advantage of new and incredibly advanced ISR capabilities. **JFQ**

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MRAPs, Irregular Warfare, and Pentagon Reform

Army Chief of Staff reviews photographs of vehicle damage caused by IEDs in Afghanistan

By CHRISTOPHER J. LAMB, MATTHEW J. SCHMIDT, *and* BERIT G. FITZSIMMONS

Mine resistant ambush protected (MRAP) vehicles offer an excellent case study for investigating the current debate over the Pentagon's emphasis on developing and fielding irregular warfare capabilities. The debate was highlighted by a series of recent articles in *Joint Force Quarterly*,[1] including one by Secretary of Defense Robert Gates, who cited the slow fielding of MRAPs as a prime example of the Pentagon's institutional resistance to investments in irregular warfare capabilities. He personally intervened to ensure more than 10,000 MRAPs were fielded quickly. Yet some analysts now argue MRAPs are not really useful for irregular warfare and are prohibitively expensive.[2] As General Barry McCaffrey, USA (Ret.), asserted, "It is the wrong vehicle, too late, to fit a threat we were actually managing."[3]

Soldiers in MRAPs clear vegetation that could conceal IEDs along roadside in Iraq

The controversial MRAPs raise two questions. First, does the MRAP experience support the contention that the Pentagon is not sufficiently able to field irregular warfare capabilities? Second, what factors best explain the MRAP failure, whether that failure is determined to be their delayed fielding or the fact that they were fielded at all? We conclude that MRAPs are a valid irregular warfare requirement and that the Pentagon should have been better prepared to field them, albeit not on the scale demanded by events in Iraq. We also argue that the proximate cause of the failure to quickly field MRAPs is not the Pentagon's acquisition system but rather the requirements process, reinforced by more fundamental organizational factors. These findings suggest that acquisition reform is the wrong target for advancing Secretary Gates' objective of improving irregular warfare capabilities, and that achieving the objective will require more extensive reforms than many realize.

IEDs and Armored Vehicles in Iraq

By June 2003, 3 months after the initial coalition intervention in Iraq, improvised explosive devices (IEDs) had emerged as the enemy's weapon of choice. That month, then–U.S. Central Command commander General John Abizaid, USA, declared IEDs his "No. 1 threat." By December the percentage of fatalities caused by IEDs rose to roughly half of all U.S. combat deaths, and from the summer of 2005 until the spring of 2008, they caused 50 to 80 percent of U.S. fatalities (see figure 1). The threat evolved over time, but all major forms of IEDs were apparent early on—by 2004 or 2005 at the latest. Initially, the enemy tossed charges under moving vehicles but soon began using roadside bombs set off remotely by electronic devices. As up-armored Humvees became more prevalent, insurgents buried large bombs in the roads to attack their

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soft underbellies. By early 2005, insurgents were using IEDs to conduct both side and under-vehicle attacks against the entire range of U.S. armored vehicles. They also were using a particularly lethal form of IED known as the explosively formed penetrator (EFP), which is able to better penetrate armor and, in doing so, spray elements of the weapons and the vehicle armor into the vehicle's interior. The sophisticated EFPs never amounted to more than 5 to 10 percent of the IEDs employed by

by early 2005, insurgents were using improvised explosive devices to conduct both side and under-vehicle attacks against the entire range of U.S. armored vehicles

insurgents, but they caused 40 percent of IED casualties. From spring into summer 2005, their use increased from about one per week to roughly one every other day.

The IED Challenge and Initial Armor Decisions. Field commanders and Washington also realized early on that IEDs were a complex problem requiring a multifaceted response. Better armored vehicles would be

one part of the solution, but there were few options readily available. The Army could only find about 200 up-armored Humvees to deliver to Iraq. Clearly more were needed. Two courses of action were taken. First, the Army decided to procure more up-armored Humvees to replace the thin-skinned versions. The Army worked with manufacturers to increase production from 51 vehicles per month in August 2003 to 400 vehicles per month in September 2004, and later to

550 vehicles per month. Second, the Army approved the emergency expedient of adding armor kits to the existing Humvees because they could be fielded more quickly than the up-armored Humvees.

The House Armed Services Committee (HASC) monitored these efforts and, pursuing a mandate from Representative Duncan Hunter (R–CA), took it upon itself to

Figure 1. Percentage of IED-caused Fatalities and Total Fatalities
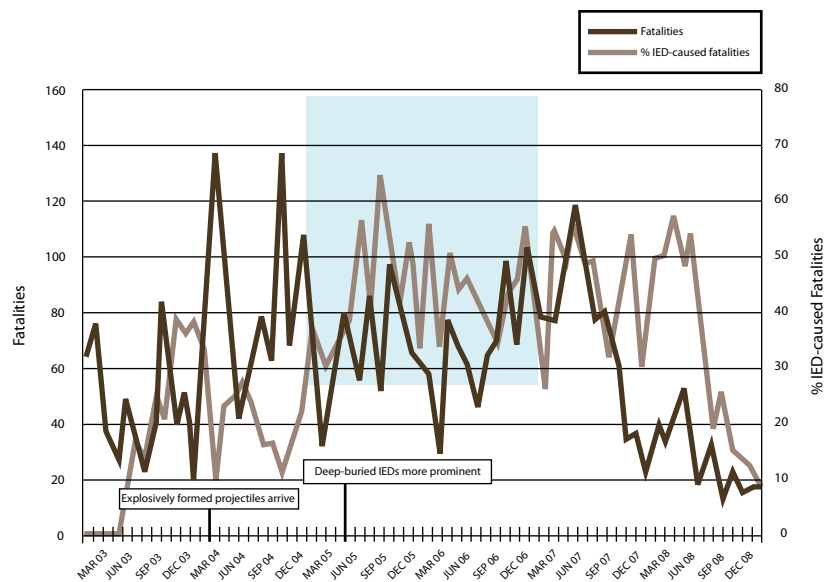
The box represents the roughly 2-year period before the 2007 "surge" when U.S. operational strategy was to reduce risks to U.S. forces and transfer security responsibilities to Iraq.

Sources: Michael E. O'Hanlon and Jason Campbell, *The Iraq Index* (Washington, DC: The Brookings Institution), available at <www.brookings.edu/FP/saban/iraq/index.pdf>; Defense Manpower Data Center, Statistical Information Analysis Division, available at <http://siadapp.dmdc.osd.mil/personnel/CASUALTY/OIF-Total-by-month.pdf>; Andrew Feickert, *Mine-Resistant, Ambush-Protected (MRAP) Vehicles: Background and Issues* (Washington, DC: Congressional Research Service, 2007), available at <http://fas.org/sgp/crs/weapons/RS22707.pdf>; and various reports from *Defense News, The New York Times*, DefenseLink, and *The Washington Post*.

investigate Pentagon claims that production of the add-on kits could not be accelerated. The HASC staffers shuttled between manufacturers and suppliers, using their private sector experience to clear production bottlenecks and get the kits into the field. With Congress pushing hard, the Pentagon and several Army depots increased production from 35 kits per month in December 2003 to 600 kits per month by July 2004. Consequently, 7,000 kits were delivered 6 months ahead of the Pentagon's original timetable. Still, only 5,330 of the 8,105 up-armored Humvees required by September 2004 were in place.

As the IED problem grew and insufficient numbers of up-armored Humvees were available, innovative U.S. troops began adding improvised armor to their vehicles.

Within a week of the exchange with the Soldier in Kuwait, Secretary Rumsfeld made delivery of up-armored Humvees and add-on armor kits a priority, and Pentagon officials "vowed to eliminate the armored-vehicle shortage in Iraq and Afghanistan within six months."[4] The Army was compliant but not enthusiastic. The Service's Director of Force Development noted both the expense of the program (over $4 billion) and the Secretary's determination: "This is an enormously expensive program, but very frankly, the communication from the secretary of defense has been real clear."[5]

The Political Problem. Pressure to do more to counter IEDs did not begin with the concerned Soldier's question to Secretary Rumsfeld. Representative Hunter and the

incensed that in the President's budget request for fiscal year 2005, the Army had categorized the up-armored Humvee and add-on armor kits as "unfunded" requirements: "At a time when you're in a war fight and you've got these IEDs . . . and we're taking fairly substantial casualties, why would force protection, such as up-armor, ever be an unfunded requirement?"[6]

When it became clear that even the up-armored Humvees offered insufficient protection against IEDs, Senators from across the political spectrum, including Ted Stevens (R–AK) and Joe Biden (D–DE), weighed in on what Missouri Republican Kit Bond decried as an unacceptable "set of bureaucratic delays" in fielding MRAPs. Media and whistleblower exposés, war college studies, congressional investigations, and inspector general reports castigated Pentagon performance. Legislators complained about the inability to "legislate a sense of urgency" and withheld funding until improvements in armor were made. In short, there was sustained political pressure to do something about the IED problem and provide better vehicular armor to the troops.

Pentagon Organizational Adaptation. The Pentagon did not anticipate or prepare well for the possibility of postwar disorder. As many studies have concluded, senior civilian leadership expected U.S. military forces to leave Iraq quickly. This proved impossible as the insurgency heated up and produced

Marines put Cougar H 4x4 MRAP through offroad course test

U.S. Marine Corps (Jason W. Fudge)

the enemy intended to use improvised explosive devices and distribute the images of their effects to force the United States to leave Iraq

Scrap metal, plywood, and sandbags were used to increase protection. The problem was highlighted in December 2004 when a Soldier complained about the improvised armor to then–Secretary of Defense Donald Rumsfeld in a town hall meeting in Kuwait. The Secretary's response about "going to war with the Army you have" and his further explanation that the lack of armor was a "problem of physics" implied nothing could be done about the situation, which elicited a firestorm of protest from Members of Congress, the public, and manufacturers who insisted they could increase production to meet the needs of U.S. troops.

HASC were already on the task. However, the incident propelled the armor issue into the public consciousness. In Congress, numerous Representatives and Senators from both parties complained about the Pentagon's inadequate efforts to supply the troops with armor as well as other irregular warfare equipment such as body armor and electronic jammers. Hunter was particularly active. His HASC hearings on military acquisition were excruciating for the Pentagon. In an April 21, 2004, hearing, Hunter related in detail how he and his staff also had built a perfectly useable up-armored Humvee with help from Home Depot. Hunter and his staff were particularly

casualties that contributed to declining American public support for the intervention. As General George Casey, USA, then-commander of Multi-National Force–Iraq, noted in 2004, the enemy intended to use IEDs and distribute the images of their effects to force the United States to leave Iraq. Pentagon leaders knew that countering IEDs was imperative.

In response, a new organization to combat IEDs was created. In September 2003, at the behest of General Abizaid, the Army set up a small unit dedicated to defeating IEDs, which adopted the motto: "Stop the bleeding." The task force concentrated on the portion of the IED problem "left of the boom"—that

is, on improving ways to avoid IEDs and attacking the ability of insurgents to make, emplace, and control the IEDs before they went off. The Army's Rapid Equipping Force also put its emphasis on solutions "left of the boom." The following summer, in July 2004, the Army-centric task force was upgraded to an Army-led Joint Integrated Process Team to harness the expertise of all the Services. From September 2004 on, the Secretary of Defense and Deputy Secretary of Defense issued memoranda authorizing expedited procurement of equipment designed to save lives and created the Joint Rapid Acquisition Cell (JRAC) for that purpose. The following year, the Pentagon upgraded its efforts to combat IEDs by creating the Joint IED Task Force. By the time the Joint IED Task Force became the Joint IED Defeat Organization (JIEDDO), it controlled hundreds of personnel and annual budgets of more than $3 billion.

The Pentagon organizations dedicated to countering IEDs could claim some success. IED effectiveness (measured by the ability to produce coalition casualties) dropped from a high of over 50 percent early in the war to less than 10 percent effectiveness by the time MRAPs began flowing to theater in the fall of 2007. Thus, JIEDDO and other counter-IED efforts such as up-armored Humvees reduced the average effectiveness of an insurgent IED attack, thereby forcing insurgents to stage more attacks to obtain equivalent effects. Unfortunately, the insurgents were able to do so and actually to increase their ability to inflict U.S. fatalities (see figure 2). Clearly, the battle against IEDs was not being won.
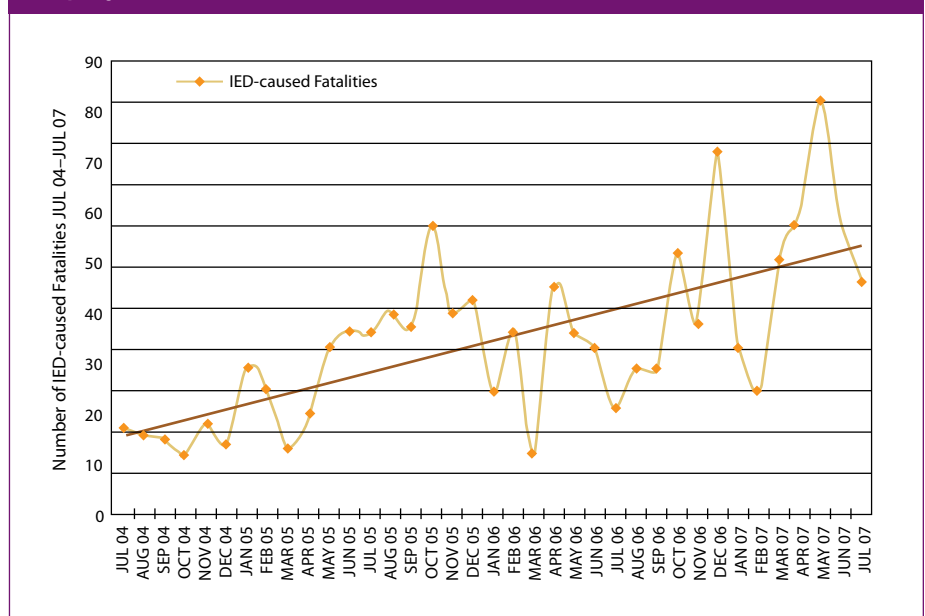
In this context, considering better armored vehicles was an obvious option, but JIEDDO did not push the issue for two reasons. First, the organization focused more on prevention than protection. The predilection for working the IED problem left of the boom was consistent with an offensive mentality (attacking the IED network) and offered the possibility of a more elegant solution if it could be achieved. This orientation was so strong that some JIEDDO members were dismissive of field commanders for wanting to "place a cocoon around the soldier driving down the street in his vehicle" rather than "taking out the IEDs first."[7] Second, JIEDDO did not have responsibility for acquisition of better armored vehicles. Its mandate allowed it to fund development of better armor for MRAPs, but it did not have authority to procure and sustain better armored vehicles, which was the

prerogative of the military Services based on their assessment of requirements.

MRAP Requirements: The Lost 2 Years. Field commanders wanted more armor in general and MRAPs in particular. First, a Military Police commander in Iraq issued an urgent request in June 2003 for armored security vehicles (ASVs) to help protect U.S. military convoys and patrols. The ASVs were lighter than the MRAPs that were ultimately fielded but similarly designed for better protection against mines and other ambushes. Also late in the summer of 2003, the Army's 101st Airborne Division issued a plea for more vehicle armor and training to evade IEDs. In September, other commanders began to request MRAPs. By November, a draft "urgent universal need statement" for

Figure 2. Trendline for IED Fatalities Before the Surge and MRAP Deployments

MRAPs from a Marine field commander was circulating in the Pentagon. The final version, sent on February 17, 2005, made the case that the Marines should not continue to absorb casualties from IEDs when commercial off-the-shelf MRAPs are available, and that these avoidable casualties carried the "potential to jeopardize mission success."[8] Despite such requests from the field, it took more than 2 years, political pressure from Congress, and a determined intervention by the Secretary of Defense before the JROC validated a large purchase of MRAPs as a military requirement.

The slow approval of MRAP requirements did not reflect lack of appreciation for their effectiveness. Early and throughout the war, U.S. experts on military requirements recommended armored cars and MRAPs for Iraqi forces also under attack from IEDs, but those in charge of Pentagon requirements did not think they were a good fit for the U.S. military. An internal Marine Corps report[9] found that the Marine requirements process largely discounted the need for MRAPs. When Marine Corps senior leaders convened on March 29–30, 2005, to consider the need for MRAPs, flag officers heard a strong case for their immediate purchase from a Marine who had long studied their value in irregular warfare. The assistant commandant of the Marine Corps then "directed the Deputy Commandant

for Combat Development and Integration to review the feasibility of developing or buying a new, mine-resistant tactical vehicle to replace the [Humvee] and to present the results at the next Executive Safety Board meeting."[10] That did not happen. Instead, the decision was made to hold out for a future vehicle that would meet all the requirements for mobility and protection better than either the up-armored Humvee or MRAPs. The Army requirements process was even less favorably inclined toward the vehicle, always moving more slowly than the Marines to approve MRAP requirements and in smaller numbers.

Field commanders persisted, however, and in 2006 finally succeeded in getting the Pentagon requirements process to approve the vehicles. On May 21, 2006, the commanding general, Multi-National Force–West, submitted a request for 185 MRAPs to the Joint Requirements Oversight Council (JROC), and in July he submitted a request for 1,000 more. The eventual approval of the requirement for 1,185 MRAPs cleared the way for a joint acquisition program, which began in November 2006. However, an approved MRAP requirement did not guarantee the program a high priority, as was soon made clear by HASC testimony on March 13, 2007, by Generals Robert Magnus, USMC, and Richard Cody, USA.

General Magnus acknowledged MRAPs are "up to 400 percent more effective than the up-armored Humvees in reducing injuries and deaths" and can "cut casualties by perhaps as much as two-thirds."[11] Yet just as the Services classified armor kits and up-armored Humvees as "unfunded requirements" in 2004, General Magnus and General Cody explained to the dismayed HASC in the spring of 2007 that MRAPs were unfunded requirements. When General Cody noted the Army "did not have a valid requirement except for 335 MRAP vehicles when the 2008 Title IV supplemental was being built," he was interrupted by Representative Gene Taylor (D–MS):

But we are getting back to that word requirement. And I have pointed out three instances where somebody tried to fight this war on the cheap [with needless casualties] *because of body armor, because of Humvees and because of jammers. So the question is: Why do we go through this again? . . . If this vehicle is going to save lives, if Humvees, as we now know, are vulnerable to mines and a hugely disproportionate number of casualties are occurring in Humvees because of mines and we have a way to address that, why don't we address it now?*

Taylor complained that the Army "seems to be dragging their feet." General Magnus then intervened to support General Cody and argued that MRAPs were a "rapidly evolving requirement over the past three months."[12]

Almost 3 years after units in the field submitted their requests for MRAPs, the Pentagon requirements system had moved to the point where senior Service leadership could invite Congress to pay for a large number of the vehicles if it was willing to do so over and above the Pentagon's normal budget and its warfighting supplemental. Two months later, Secretary Gates announced MRAPs were the Pentagon's number-one acquisition priority. Shortly thereafter, the JROC validated huge MRAP requirements, first for 7,774 and then for 15,374 vehicles.

Strategy Significance: The MRAP Impact. Fielding MRAPs would have supported both the U.S. operational strategy under General Casey and the substantially revised U.S. approach to the insurgency under General David Petraeus. With encouragement from civilian leadership looking forward to a withdrawal of some U.S. forces, Casey's operational strategy was to pull U.S. forces back and reduce casualties while pushing Iraqi forces forward into the fight. Fielding MRAPs would have complemented Casey's strategy well by better protecting U.S. forces as they moved to and from their protected enclaves, reducing political pressure for rapid withdrawal, and buying time for the transition to reliance on the Iraqi army and police. When MRAPs were finally approved as a requirement for U.S. forces in mid-2007, General Petraeus's new

> *an approved MRAP requirement did not guarantee the program a high priority, as was soon made clear by House Armed Services Committee testimony*

MRAPs wait to be unloaded from USNS *Pililaau* at Shuaybah Port, Kuwait

U.S. Navy (Kelvin Surgener)

strategy was just being implemented. He supported the dispersion of an increasing number of U.S. forces (the so-called surge of five additional Army brigades) among the Iraq population, principally in Baghdad. The acquisition system was already primed to move quickly on MRAPs before the Iraq War began because Army engineers had negotiated the Army requirements process well enough to obtain a handful of MRAP prototypes for clearing mines from transportation routes.[13] This fact, along with the support of Congress and Secretary Gates, allowed more than 10,000 MRAPs to be fielded in record time—about a year and a half.

The MRAPs made a significant impact once they arrived in theater, but their effect was obscured by the decline in violence that accompanied the American shift in strategy under General Petraeus. In addition to other factors such as cooperation with Sunni tribal leaders, the surge in U.S. forces and General Petraeus's emphasis on population security helped produce a sharp drop in violence—including IED attacks—from summer 2007 onward. That drop meant fewer U.S. casualties. As expected, American casualties (fatalities and wounded) from IED attacks dropped even further after MRAPs arrived. By the time 10,000 MRAPs were deployed in December 2008, the percentage of U.S. casualties in Iraq attributable to the IED attacks that MRAPs were designed to defend against had dropped precipitously. As figure 3 illustrates, when MRAPs began to flow to Iraq in November 2007, almost 60 percent of U.S. casualties were attributed to IEDs. Just over a year later, with 10,000 MRAPs in country, only 5 percent of casualties were attributable to IEDs, even though insurgents were targeting the vehicles with IEDs for symbolic reasons.[14] In short, General Magnus's testimony in March 2007 to the effect that MRAPs could "cut casualties by perhaps as much as two-thirds" seems well founded.

It is natural to speculate about the impact of fielding MRAPs earlier. Using the same MRAP fielding timelines from later in the war, and assuming other factors are held constant, we can postulate the effect if MRAPs had been fielded after the receipt of the first urgent needs statement in February 2005. Arguably, MRAPs would have achieved an even more dramatic reduction in IED effectiveness earlier in the war since other counter-IED efforts were not yet bearing fruit. But even the two-thirds

reduction in IED-related (not total) fatalities postulated by General Magnus in 2007 would have been dramatic (see figure 4). Such a drop in casualties would have reduced political pressure for withdrawal and bought time for Casey's strategy of pushing Iraqi forces forward, just as it facilitated the strategy of securing the population that General Petraeus supported.

Explaining Delayed Fielding

The overview of the Pentagon's record on fielding MRAPs corrects some mistaken impressions and substantiates some popular concerns. The following points bear emphasis:

■ The Pentagon was poorly prepared for irregular warfare and the IED ambush tactics it encountered in Iraq.

■ The IED threat evolved, but all types of IED attacks—side, underbody, and EFP—were evident by 2004 or 2005 at the latest, so the need for better armored vehicles requested by commanders in the field was evident.

■ While the acquisition system had to be pushed to provide armor kits and up-armored Humvees faster, the Pentagon did make special efforts to address the IED problem.

■ Despite huge resources (for example, $12.4 billion for JIEDDO from 2006 to 2008), the new organizations did not have the authority to tackle the IED problem in a comprehensive manner—particularly where armoring vehicles was concerned—and

instead focused on attacking the precursors to IED explosions.

■ Senior military leaders only validated better armored vehicle requirements under pressure from two Secretaries of Defense and Congress, despite the demonstrated effectiveness of better armored vehicles and early appeals from field commanders.

■ The acquisition system fielded effective MRAPs quickly once they were approved and funded not only because Congress and Secretary Gates made them a top priority but also because the system had already developed and tested MRAP prototypes.

In retrospect, it is clear that the acquisition system was not responsible for the Pentagon's lack of preparedness for irregular warfare or its inability to respond quickly to the need for better armored vehicles. The

testimony in March 2007 to the effect that MRAPs could "cut casualties by perhaps as much as two-thirds" seems well founded

glaring deficiency was in the Pentagon's requirements system, which requires further explanation.

Armored Vehicles and Military Requirements. The major tradeoffs between MRAPs and lighter tactical vehicles were well understood from the beginning. As

Figure 3. MRAPs Deployed and Percentage of IED-caused Casualties

Cumulative number of MRAPs deployed
Percentage of IED-caused fatalities
Overall downward trend in percentage of IED-caused fatalities
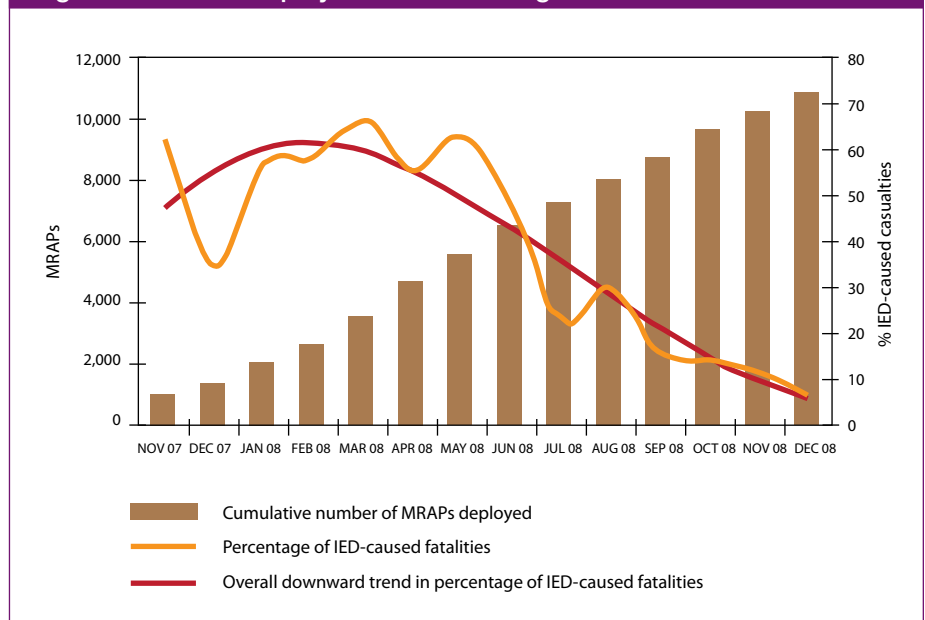
Representative Hunter noted, the advantages the MRAP has over a Humvee are clear: "It's a simple formula. A vehicle that's 1 foot off the ground gets 16 times that [blast] impact that you get in a vehicle that's 4 feet off the ground," such as the MRAP.[15] However, the higher clearance and heavier armor also make the vehicle less stable and diminish mobility, making it impossible to navigate narrow urban streets or rough off-road terrain. The new MRAP All Terrain Vehicle being developed for the rugged terrain of Afghanistan, where IED use and effectiveness are on the rise, is smaller and designed to minimize the tradeoff between mobility and survivability. The future vehicle is supposed to provide the "same level of protection as the previous MRAPs [used in Iraq], but with the mobility of a Humvee,"[16] which is a difficult engineering challenge. Since force protection requirements vary from one irregular conflict to another, the optimum number and mix of armored vehicles, and the way they balance mobility, survivability, and other attributes, is not self-evident. The relative value of survivability, mobility, and other armored vehicle attributes is a function of multiple factors, including the threat posed to U.S. forces, which evolved over time.

That said, the evolution of the IED threat does not adequately explain the resistance to purchasing MRAPs for U.S. forces. First of all, the requirements system was slow to validate the need for the vehicles even after insurgents were using all the major types of IEDs. Moreover, Department of Defense (DOD) experts were advising the Iraq military early on that they needed MRAPs for counterinsurgency, so their value for irregular warfare was understood. The reality is that decisionmakers in the Pentagon's requirements system were not enthusiastic about any additional armor, much less heavy, expensive MRAPs. Decisions to provide additional armor were imposed on the system, first by Secretary Rumsfeld and then by Secretary Gates. The lack of enthusiasm for additional armor was manifest in the argument made by force development leaders that insurgents would simply build bigger IEDs in response, and thus "you can't armor your way out of this problem."[17]

The contention that additional armor is futile because it can be defeated is not a good requirements argument. By that logic,

Figure 4. Hypothetical Reduction in Fatalities from Earlier Fielding of MRAPs

the lack of enthusiasm for additional armor was manifest in the argument made by force development leaders that insurgents would simply build bigger IEDs in response
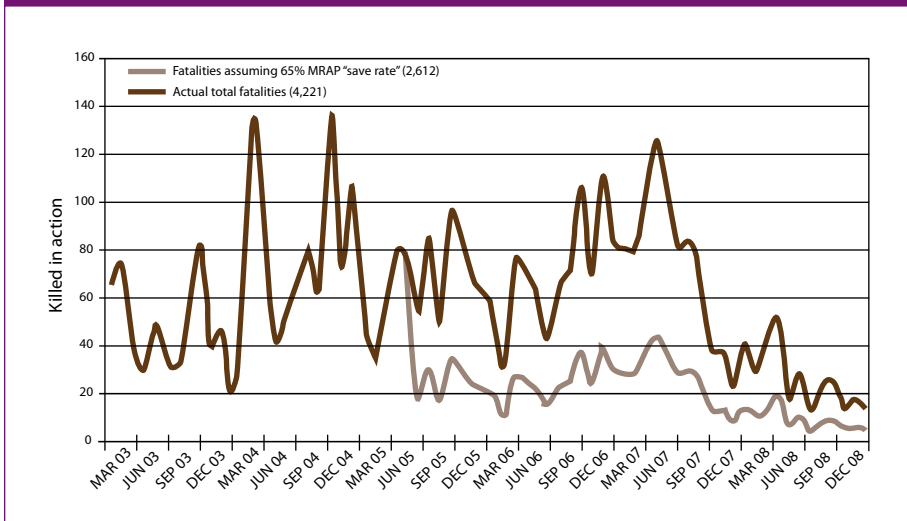
we would never use armor for any purpose. Armor has value not because it is invulnerable but because it makes the enemy's job more difficult and the tasks of U.S. forces easier. As one commander of a division in Baghdad noted, MRAPs forced insurgents to build bigger and more sophisticated bombs. Those bombs take more time and resources to make and set up, which gives U.S. forces a better chance of catching the insurgents in the act. The extra armor also boosts the confidence of U.S. troops and permits a quick response to ambushes. The requirement for MRAPs was acknowledged slowly because they are useful primarily for a limited defensive purpose in irregular warfare campaigns such as Iraq and Afghanistan that Service leaders prefer to avoid and hope will be short-lived. In this regard, the Pentagon requirements system was true to its historical mindset, which discounts the importance and persistence of irregular warfare.

Irregular Warfare and Force Protection. Pentagon officials defend the general lack of readiness for IEDs by arguing the threat could not have been anticipated, but the need for better vehicular protection was evident long before the intervention in Iraq. As is well understood, irregular warriors typically hide among noncombatants, so they

MRAPs on assembly line in Ladson, South Carolina

are not easily identified and defeated and use ambushes and other hit-and-run tactics to bleed and frustrate regular forces. Because insurgents are hard to find and use ambush tactics, a patient strategy of securing the population is required to defeat them. When the population feels secure, it is more likely to provide information to help locate the insurgents and avoid their ambushes.

Yet such a patient strategy requires sustained support from the U.S. public, which is more likely to offer that support when costs, including American casualties, remain low in comparison with perceived national interests and discernible progress. Since the Iraq War was controversial from the beginning and progress was not evident, it was particularly important to limit casualties. The number of Americans who thought the level of U.S. military casualties in Iraq was "acceptable" given the goals of the war dropped from a slight majority in June 2003 to 21 percent by the end of 2006.[18] Support in Congress declined as well, and members of both parties were emphatic about the need to give the military every possible means of reducing casualties.

Thus, force protection in irregular warfare is a strategic imperative because costs must be kept low in comparison with perceived interests and progress, and it is a tactical imperative because hit-and-run attacks at close quarters and from any direction are the norm. This is why counterinsurgents historically invest more in key infrastructure protection, static fortifications to protect lines of communication (blockhouses or fortified operating bases), and improved force protection on the march. Convoys that transport and supply the forces that constantly pursue the insurgents and protect the population must include well-armored vehicles that serve as firing platforms to quickly counter ambushes.

Lessons from past U.S. participation in irregular warfare emphasize the importance of force protection and armored mobility.[19] The up-armored Humvee program originated with the U.S. intervention in Somalia, but soon after U.S. forces left there the program was phased out, only to be rushed forward again when troops were sent to Bosnia. Both of these emergency acquisition efforts waned quickly after the intervention. Only the U.S. Army Military Police, which specialize in population security, showed sustained interest in the up-armored Humvee program and

ASVs. By the time U.S. forces went to Iraq, only 2 percent of the Army's 110,000 Humvees were armored, and only the Military Police were equipped with ASVs. For these and other reasons, the DOD inspector general's report on MRAPs correctly concluded that DOD should have been better prepared to provide armored vehicles for irregular warfare.[20]

Two qualifications may be raised to the proposition that the Pentagon should have been better prepared for the enhanced vehicular armor requirements of irregular warfare. First, force protection is not an end in itself. Instead, "aggressive saturation patrolling, ambushes, and listening post operations must be conducted, risk shared with the populace, and contact maintained."[21] Withdrawing inside of large, well-fortified vehicles may seem like the tactical equivalent of retreating to large bases. On the contrary, as the new U.S. counterinsurgency manual notes, counterinsurgents must treat "every logistic package or resupply operation [as] a mounted combat operation" and appreciate the need for special equipment, including up-armored vehicles and specialized mine-clearing equipment (that is, MRAPs).[22] A higher level of protected mobility for troops conducting

Soldier views damage to a vehicle caused by roadside IED in Baghdad

U.S. Army (Ronald Shaw, Jr.)

counterinsurgency supports rather than undermines an aggressive tactical spirit.

The second qualification is that prior to Iraq it was not clear that DOD needed to invest in a *large* fleet of MRAPs. As noted, determining the optimum number and mix of armored vehicles for irregular warfare is a difficult requirements problem. However, one way to illustrate the extent to which the United States should have anticipated the force protection requirements in Iraq is by comparing the U.S. experience there with the performance of other countries. Historically, forces well prepared for irregular warfare have fielded MRAP variants, but more typically they have had to compromise between better protected armored personnel carriers (APCs) with heavier armor and less visibility for the occupants and more mobile vehicles with better visibility and less protection. Some form of armored car variant is typically the result. Other national forces deployed to Iraq and Afghanistan with better armored car variants than the United States, but they too were left scrambling for MRAPs.[23] If we hold ourselves to the standards of other countries,

the absence of up-armored Humvees, ASVs, or other armored car variants prior to Iraq is much more difficult to justify than the pre-war absence of a large fleet of much more expensive and heavy MRAPs.

Once the nature of the IED challenge in Iraq became apparent, however, MRAPs should have been fielded expeditiously. Instead, the Services hoped to get by with less expensive up-armored Humvees. Adding armor to a Humvee costs only $14,000; up-armored Humvees cost twice as much as the unarmored version (about $200,000), and MRAPs can cost three to seven times as much as an up-armored Humvee, from $600,000 to over $1 million per vehicle. The $25 billion cost projected for MRAPs is high but not indefensible. Congress provided annual supplemental war funding in the hundreds of billions of dollars, and the overall cost of the Iraq War is estimated at over $1.6 trillion. Moreover, the cold-blooded observation made by Senators[24] and other sources is that protecting people in an all-volunteer military is cheaper than replacing them. The cost of enlisted casualties averages $500,000 each, while the cost for officer casualties, depending

on military occupation, ranges from $1 million to $2 million each. Considered in this context, and given their value for countering IEDs and reducing casualties, MRAPs were more than a bargain, and the same is true of up-armored Humvees. Yet DOD refused to invest in better armored vehicles such as the up-armored Humvee before Iraq and was slow to field the MRAPs during the conflict. This tendency to ignore irregular warfare requirements is not an aberration but a persistent trend.

The Pentagon Record on Irregular Warfare Requirements. Incredibly, several *months* after the Secretary of Defense declared MRAPs the top defense acquisition priority, his subordinates were explaining to Congress that MRAPs would be put in storage because "Service chiefs have indicated that these are heavy, large vehicles that might not fit well with mobile expeditionary missions."[25] The observation that MRAPs will not be a good fit for future conflicts is odd since DOD strategy and planning guidance has long insisted irregular warfare will be a major element of the future threat environment. The perspective of the Service chiefs is at odds with national security policy and defense planning, but it is entirely consistent with historic Service positions in the Pentagon's longstanding debate over the nature and precise definition of irregular warfare capabilities.

incredibly, several months *after the Secretary of Defense declared MRAPs the top defense acquisition priority, his subordinates were explaining to Congress that MRAPs would be put in storage*

Soldiers install up-armored kits on Humvees in Afghanistan

U.S. Army (Marcus J. Quarterman)

This debate heated up in response to the war on terror, figured prominently in the 2006 Quadrennial Defense Review, and was further elevated by Secretary Gates, who made the case publicly that the Pentagon is unable to generate a proper balance of conventional and irregular warfare capabilities. To correct this shortcoming, Secretary Gates issued a policy directive that declares irregular warfare is just as important as traditional warfare and that the military must be equally proficient at both; then he promulgated a new defense strategy that emphasizes irregular warfare capabilities; then he followed up by announcing the termination or reduction of some major weapons programs to pay for more irregular warfare capabilities. Yet past experience suggests that it will be difficult to thrust irregular warfare capabilities on the Services.

When pressed to invest in irregular warfare, the Services argue equipment should be equally effective in all types of conflicts. In the case of armored vehicles, the argument is made that those currently under development will meet all future requirements, including those for irregular warfare. Thus, the emerging preference is for "scalable armor" added to an all-purpose chassis that bears up well regardless of the levels of armored protection it carries. Such versatility is desirable but of course difficult to achieve. When circumstances demand the urgent procurement of irregular warfare equipment, such capabilities typically are abandoned shortly after the conflict fades from memory. This happened with up-armored Humvees and, before that, with slower fixed-wing aircraft for reconnaissance and close fire support as well as brown and green water vessels that patrol coastlines and inland waterways. The likely prognosis for MRAPs would be the same absent intervention by the Secretary of Defense.

Secretary Gates wants to "institutionalize procurement of [irregular] warfare capabilities" so they can be quickly fielded when needed. The source of resistance to this goal is not the Pentagon's acquisition system. As acquisition professionals emphasize and the MRAP experience illustrates, it is impossible to procure anything without a validated requirement and congressional funding. Once senior leadership validated the requirement and provided resources, the acquisition system fielded large numbers of MRAPs within 18 months—an accomplishment often described as an industrial feat not seen since World War II. Instead, the long delay in fielding MRAPs is attributable first to the Pentagon's force development or requirements system, second to Service cultures that generally undervalue irregular warfare capabilities, and finally to the Pentagon's decisionmaking structure and processes, which typically favor specialization over integration of diverse areas of expertise to solve complex problems. Secretary Gates seems to appreciate the complexity of the problem. He has argued, "In the end, the military capabilities we need cannot be separated from the cultural traits and reward structure of the institutions we have."[26] Hopefully, the Secretary's broader understanding of the problem—and hence the proper scope of required reform—will not get lost in the rush to revise the current defense program or reform the acquisition system. **JFQ**

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"Games Bureaucrats and Politicians Play: A Case Study on Congress' Surprise Decision to Retire 18 B–52s"

SECOND PLACE (Tie)
Del C. Kostka, National Geospatial-Intelligence Agency, Air Command and Staff College
"Birds of a Feather: Moving Toward a Joint Acquisition Process to Support the Intelligence, Surveillance, and Reconnaissance (ISR) Enterprise"

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"The Defense Implications of Demographic Trends"

Best Interagency Dialogue Article
Charles A. Stevenson
The Johns Hopkins University
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There is no more intimate relationship . . . they eat and sleep together. They use the same facilities day after day. They are compelled to stay together in the closest association.

—U.S. Senator describing the life of a Soldier

Experiments within the Army in the solution of social problems are fraught with danger to efficiency, discipline, and morale.

—U.S. Army general officer

By OM PRAKASH

The Efficacy of *"Don't Ask, Don't Tell"*

Homosexual Servicemembers have had to compromise their personal integrity by keeping their sexuality secret

U.S. Air Force (Shelley Gill)

Colonel Om Prakash, USAF, wrote this essay while a student at the National War College. It won the 2009 Secretary of Defense National Security Essay Competition.

Though the epigraphs echo arguments made against homosexuals serving openly in the Armed Forces, they are the words of Senator Richard Russell of Georgia and General Omar Bradley in opposition to President Truman's 1948 executive order to racially integrate the U.S. military.[1] The discourse has gone beyond what is best for the combat effectiveness of the military to become a vehicle for those seeking both to retract and expand homosexual rights throughout society. It has used experts in science, law, budgeting, and military experience in an effort to settle an issue deeply tied to social mores, religion, and personal values.

A turning point in the debate came in 1993. Keeping a promise made during his campaign, President Bill Clinton attempted to lift the ban on homosexuals serving in the military. After strong resistance from the leadership in both the Pentagon and Congress, a compromise was reached as Congress passed 10 United States Code §654, colloquially known as "Don't Ask, Don't Tell" (DADT).[2] This law, which allowed homosexuals to serve as long as they did not admit their orientation, survived the Clinton and Bush administrations essentially unchanged. Repealing the ban on homosexuals serving openly was also a campaign promise of Barack Obama, though his transition team stated that they did not plan to tackle the issue until 2010.[3] As this debate reignites, it is worthwhile to reexamine the original premises that went into forming the DADT policy, explore the cost and effectiveness of the law, and finally, with 16 years of societal drift, revisit the premises on which it is based.

There are five central issues. First, §654 has had a significant cost in both personnel and treasure. Second, the stated premise of the law—to protect unit cohesion and combat effectiveness—is not supported by any scientific studies. Strong *emotional* appeals are available to both sides. However, societal views have grown far more accommodating in the last 16 years, and there are now foreign military experiences that the United States can draw from. Third, it is necessary to consider the evidence as to whether homosexuality is a choice, as the courts have traditionally protected immutable characteristics. To date, though, the research remains inconclusive. Fourth, the law as it currently stands does not prohibit homosexuals from serving in the military as long as they keep it secret. This

Opposition to homosexuals serving openly in military is reminiscent of opposition to President Harry Truman's desegregation of military

U.S. Army

has led to an uncomfortable value disconnect as homosexuals serving, estimated to be over 65,000,[4] must compromise personal integrity. Given the growing gap between social mores and the law, DADT may do damage to the very unit cohesion that it seeks to protect. Finally, it has placed commanders in a position where they are expected to know everything about their troops except this one aspect.

Origins

During the 1992 campaign, Presidential hopeful Bill Clinton made homosexuals in the military a political issue, promising to change the Pentagon's policy that only heterosexuals could serve in the military.[5] On taking office,

it is necessary to consider the evidence as to whether homosexuality is a choice, as the courts have traditionally protected immutable characteristics

President Clinton initially assumed the ban could be lifted with an executive order, similar to the method President Harry Truman used to racially desegregate the military. He met fierce opposition in Congress led by Senator Sam Nunn (D–GA), who organized extensive House and Senate Armed Services Committee (HASC and SASC, respectively) hearings on the ban of homosexuals in the military. Two other factions emerged in Congress, one arguing for a complete repeal of the ban. A third compromise faction finally prevailed with the position that went on to become DADT, allowing homosexuals to serve as long as it was done in secret.[6]

Aside from the fierce divide in opinions, the debate also turned into a contest between Article I and Article II of the Constitution. Previously the ban on homosexuals was a

Pentagon policy, subject to the executive orders of the President. As a companion to the DADT policy, Congress permanently stifled this route, to the chagrin of the President. To preclude any future action to lift the ban via executive order, Congress wrote into law, "Pursuant to the powers conferred by Section 8 of Article I of the Constitution of the United States, it lies within the discretion of the Congress to establish qualifications for and conditions of service in the armed forces."[7]

Rationale

During congressional debate, there were three components to the argument supporting the ban on homosexuals serving in the military: health risks, lifestyle risks, and unit cohesion.[8]

The Army Surgeon General offered statistics showing a homosexual lifestyle was associated with high rates of HIV/AIDS, hepatitis B, and other sexually transmitted diseases. Aside from the increased health risk, statistics also showed a homosexual lifestyle was associated with high rates of promiscuity, alcoholism, and drug abuse.[9] Ultimately, neither of the first two arguments made it into the rationale offered in §654—ostensibly because these risk factors are not uniquely associated with homosexuality and could be screened for and dealt with in a manner other than determining sexual orientation.

The central argument, and the only one that made it into law, rested on unit cohesion. The final language adopted by Congress stated:

One of the most critical elements in combat capability is unit cohesion, that is, the bonds of trust among individual service members that make the combat effectiveness of a military unit greater than the sum of the combat effectiveness of the individual unit members. . . . The presence in the armed forces of persons who demonstrate a propensity or intent to engage in homosexual acts would create an unacceptable risk to the high standards of morale, good order and discipline, and unit cohesion that are the essence of military capability.[10]

Associated Costs

Before the inception of DADT, the rates of discharge for homosexuality had been steadily falling since 1982. Once the law was passed, rates climbed, more than doubling by 2001 before beginning to fall again.[11] Since

President Clinton attempted to fulfill campaign promise to lift ban on homosexuals in the military

U.S. Navy (Bob McRoy)

1994, the Services have discharged nearly 12,500 Servicemembers under the law.[12]

There are various explanations for the rise in discharges for homosexuality after 1993. One is that the increase reflects how discharges are recorded rather than an underlying change in practices. A senior Air Force Judge Advocate points out that prior to the change in the law, homosexual discharge actions during basic military training were classified as fraudulent enlistments because the person had denied being a homosexual when he or she enlisted and later changed position. After the change in the law, the Air Force no longer collected the information during the enlistment process, so fraudulent enlistment was no longer an option, and the Air Force began characterizing the discharges as homosexual conduct. Gay rights advocates argued that the increase was due to commanders conducting "witch hunts," yet commanders also reported fear of being accused of discrimination and only processing discharges when a case of "telling" was dumped in their laps.[13] Another explanation is that given the law and recent reduction in stigma associated with homosexuality in society at large, simply declaring one is homosexual, whether true or not, is the fastest way to avoid further military commitment and receive an honorable discharge. In support of this supposition, Charles Moskos, one of the original authors of DADT, points out that the number of discharges for voluntary statements by Servicemembers accounted for 80 percent of the total, while

the number of discharges for homosexual acts actually declined over the years.[14]

The drop in discharges under the law since 9/11 has been used by both sides in support of their case. Gay rights advocates stated the military now needed every person it could get, so it looked the other way, but an equally compelling argument is that in the wake of the events of 9/11, pride and desire to serve reduced the numbers of those making voluntary statements in an effort to avoid further duty. An Air Force source also argues against the perceived need for personnel contributing in any way to the Air Force data because the response to indications of homosexuality has remained unchanged. The Air

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commanders reported fear of being accused of discrimination and only processing discharges when a case of "telling" was dumped in their laps

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Force investigates all cases when presented with credible evidence or a voluntary statement and has initiated discharge proceedings in all cases when the inquiry reveals a basis for such action.

Though the arguments explaining the patterns in discharges are compelling on both sides, ultimately it is difficult to prove any one factor because each explanation only partially explains the trends. Furthermore, whatever

the reasons, the fact remains that because of DADT, those Servicemembers no longer serve. It is also worth noting that the 12,500 figure is most likely low since it cannot capture the number of individuals who do not reenlist or who choose to separate because of the intense personal betrayal they felt continuing to serve under the auspices of DADT.

In a report released in February 2005, the Government Accountability Office (GAO) estimated the financial impact to be at least $190.5 million for the previous 10 years of DADT policy. However, a University of California Blue Ribbon Commission that included former Secretary of Defense William Perry questioned the report's methodology. The commission faulted the GAO for not including recruiting and separation costs that brought the 10-year estimate to $363 million.[15] Also worth noting is that these figures do not account for the additional opportunity costs of high-profile, prized specialties such as Arabic speakers.[16]

If one considers strictly the lost manpower and expense, DADT is a costly failure. Proponents of lifting the ban on homosexuals serving openly can easily appeal to emotion given the large number of people lost and treasure spent—an entire division of Soldiers and two F–22s. Opponents of lifting the ban offer interesting but weak arguments when they compare the relatively small numbers of discharges for homosexuality with those discharged for drug abuse or other offenses. It is necessary to look past both of these arguments, remove the emotion, and instead examine the *primary* premise of the law—that open homosexuality will lead to a disruption of unit cohesion and impact combat effectiveness. If that assumption holds, then the troops lost and money spent could be seen as a necessity in order to maintain combat effectiveness just as other Servicemembers unfit for duty must be discharged.

Unit Cohesion/Combat Effectiveness

In 1993, as the language was drafted for §654, there were no direct scientific studies regarding the effects of acknowledged homosexuals on either unit cohesion or combat effectiveness. Furthermore, it is incorrect to equate the two because unit cohesion is only one of many factors that go into combat effectiveness. Potentially far outweighing unit cohesion, for example, are logistics, training, equipment, organization, and leadership, just to name a few.

Testimony before the HASC and SASC involved speculation on possible impacts from psychologists and military leaders.[17] To date, there is still no direct scientific evidence regarding homosexuals serving openly, but there is now additional empirical data as several North Atlantic Treaty Organization Allies have since lifted the ban on homosexuals serving.

Though unit cohesion is not specifically defined in §654, it does refer to "bonds of trust," the sum being greater than the individuals, and "high standards of morale, good order and discipline." The *Dictionary*

> *there is no direct scientific evidence regarding homosexuals serving openly, but there is empirical data as several North Atlantic Treaty Organization Allies have lifted the ban*

of U.S. Army Terms defines *unit cohesion* as the "result of controlled, interactive forces that lead to solidarity within military units directing soldiers towards common goals with an express commitment to one another and the unit as a whole."[18] As psychologists explored the concepts, experimental and correlation evidence supported dividing cohesion into two distinct types: social cohesion and task cohesion. *Social cohesion* is the nature and quality of the emotional bonds within a group—the degree to which members spend time together, like each other, and feel close. *Task cohesion* refers to the shared commitment and motivation of the group to a goal requiring a collective effort.[19]

When measuring unit performance, task cohesion ends up being the decisive factor in group performance. Common sense would suggest a group that gets along (that is, has high social cohesion) would perform better. Almost counterintuitively, it has been shown that in some situations, high social cohesion is actually deleterious to the group decision-making process, leading to the coining of the famous term *groupthink*. This does not imply that low social cohesion is advantageous, but that moderate levels are optimal.[20]

Several factors contribute to cohesion. For social cohesion, the most important factors are propinquity—spatial and temporal proximity—and homogeneity. For task cohe-

sion, the factors include leadership, group size, shared threat, and past success. Interestingly, success seems to promote cohesion to a greater degree than cohesion promotes success.[21]

This leads to the conclusion that integration of open homosexuals might degrade social cohesion because of the lack of homogeneity; however, the effects can be mitigated with leadership and will further dissipate with familiarity. More importantly, task cohesion should not be affected and is in fact the determinant in group success. Given that homosexuals who currently serve do so at great personal expense and professional risk, RAND interviews suggest such individuals are deeply committed to the military's core values, professional teamwork, physical stamina, loyalty, and selfless service—all key descriptors of task cohesion.[22]

Homosexuality and Choice

As the debate reignites on DADT, it is necessary to consider whether homosexuality is a choice. Traditionally, courts have protected immutable characteristics, and Americans writ large are demonstrably more accepting of characteristics that an individual cannot change. Contrasting this, many opponents of lifting the ban assume that homosexuality is a choice and use this as the basis of many arguments. Unfortunately, research has not yet yielded a definitive answer to this question. Both sides of the debate are armed with ultimately inconclusive scientific studies. What follows is a brief overview of several studies that have attempted to settle the dispute.

Several studies in the early 1990s examined the sexual preferences of identical twins and fraternal twins in the hopes of finding a genetic linkage to sexual orientation. Since identical twins have 100 percent of nuclear genetic material in common and fraternal twins have only 50 percent in common, if

a high percentage of identical twins share a characteristic (such as green eyes) while a lower percentage of nonidentical twins share that trait, it suggests there is a genetic basis. Conversely, if identical and nonidentical twins share a characteristic at equal rates (such as preference for the color red), it suggests there is not a genetic basis. With homosexuality, a number of twin studies attempted this type of isolation, and while early studies seemed to indicate a genetic linkage, follow-on studies found the error rate too high based on sample selection.[23] Repeat studies showed a genetic linkage, if it existed, was only moderately heritable and not in the simple Mendelian model.[24]

In a different approach, in 1993 Dean Hammer and others initially found a strong genetic linkage in male homosexuality dubbed by the press as the "gay gene."[25] Their studies involved examining the X chromosome of homosexual men (homosexual brothers and their family members). Yet follow-on studies in 2005 and a complete analysis of the entire genome found a weaker correlation.[26] Even

Former Chairman of the Joint Chiefs of Staff, General Peter Pace, USMC (Ret.), stated that homosexuality is a "sin" in a 2007 interview

U.S. Navy (Javier Capella)

anthropomorphic differences in homosexuals such as left-handedness, spatial processing, and hypothalamus size[27] that seem to argue for a genetic linkage can also be explained by prenatal differentiation through pathways yet to be elucidated.[28] Though these scientific studies give compelling evidence that there is some biological basis to sexual orientation, possibly genetic, and perhaps something early in development or even prenatal, the exact mechanism is yet to be identified.

Anecdotal data is also compelling, as illustrated by statements from homosexual

military members: "I wish I could decide who I fell in love with; if someone thinks I would consciously choose such a life where I am forced to live in hiding and fear, knowing the bulk of the population is against you, is just crazy. I can't help who I am." "Why would I choose to suffer like this?" Ultimately, it is probable that sexual orientation is a complex interaction of multiple factors, some genetic and some developmental, and that elements of free choice exist only to the same degree that they do for heterosexuals ignoring powerful biological urges.

Taking another step back, the problem is further complicated by individual identification of sexual orientation. Frequently, individual men who have engaged in single, and sometimes numerous, homosexual acts do not identify themselves as homosexuals. Depending on the circumstances, such as prison populations that preclude sex with women, individuals treat certain events as occurring outside their sexual orientation.[29] The issue is far more complicated with women. Research

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sexual harassment regulations and sensitivity training would need to be updated, and guidance from leadership would be necessary

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indicates women's ranks include primary lesbians, who are exclusively attracted to women, and elective lesbians, who shift back and forth depending not on the gender but on the personal qualities of a particular man or woman. This is a behavior not generally observed in men.[30] Such studies give insight and suggest some practical steps if homosexuals are to be integrated into the military.

There can be strong similarities between settings such as prisons and the Spartan field conditions Servicemembers must at times endure and the relatively weak correlation between isolated homosexual acts and self-described sexual orientation. This can manifest itself as homophobia and severe self-discomfort from conscious or subconscious clashes of sexual desires with values gained from society, family, or religion.[31]

Though many scientific experts will no doubt be called to testify during any future debates, lawmakers will not yet find any solid ground on which to base conclusions on the immutability of homosexuality. Ultimately,

the question of whether homosexuality is a choice can be treated as irrelevant. If the ban is lifted, basic respect of privacy will be required just as when women were fully integrated into the Services. Previously, the military found a lack of sexual privacy, as well as sex between male and females, undermined order, discipline, and morale.[32] Dorm and facilities upgrades will no doubt be required. Sexual harassment regulations and sensitivity training would need to be updated, and guidance from leadership would be necessary. These would not be insurmountable obstacles.

Disconnects and Challenge

As social mores shift toward a greater acceptance of homosexuals, we slowly introduce cognitive dissonance into Servicemembers. Consider that a *Washington Post* poll stated 75 percent of Americans polled now believe that homosexuals should be allowed to serve openly in the military, up from 44 percent in 1993.[33] A 2006 Zogby poll of military serving in Iraq and Afghanistan found 37 percent disagreeing with the idea and 26 percent agreeing that they should be allowed.[34] The poll further found that a large percentage of Servicemembers are looking the other way, with 23 percent reporting that they are certain they are serving with a homosexual in their unit (59 percent of those reporting stated they were told directly by the individual).[35] Growing numbers, in both the Services and those considering service, see a gap between the traditional American creed of equality for all and the DADT law. To understand the moral dilemma this creates for many, consider the likely reaction if the forces were again racially segregated. Even former Chairman of the Joint Chiefs of Staff, General Peter Pace, who publically stated his opinion that homosexuality is a sin, also said, "Are there wonderful Americans who happen to be homosexual serving in the military? Yes."[36] General Charles Dunlap, Jr., USAF Judge Advocate, points out that those serving want to serve honorably for what they believe to be the right causes.[37]

The law also forces unusual personal compromises wholly inconsistent with a core military value—integrity. Several homosexuals interviewed were in tears as they described the enormous personal compromise in integrity they had been making, and the pain felt in serving in an organization they wholly believed in, yet that did not accept them. Furthermore, these compromises undermined the

very unit cohesion DADT sought to protect: "I couldn't be a part of the group for fear someone would find out, I stayed away from social gatherings, and it certainly affected my ability to do my job."

DADT also represents a unique challenge for commanders. Normally charged with knowing everything about their troops, commanders are now trying to avoid certain areas for fear of being accused of conducting witch hunts[38] or looking as if they are selectively enforcing a law they have moral reservations against. Vice Admiral Jack Shanahan, USN, stated, "Everyone was living a big lie—the homosexuals were trying to hide their sexual orientation and the commanders were looking the other way because they didn't want to disrupt operations by trying to enforce the law."[39]

In the case of integration of the sexes, the U.S. military found lack of sexual privacy, as well as sex between males and females, undermined order, discipline, and morale.[40] These concerns were solved by segregated living quarters. Here the issue becomes complicated. Those opposed to lifting the ban point out that the living conditions of the military would at times make it impossible to guarantee privacy throughout the spectrum of sexual orientation. But would such measures actually be necessary? Considering that estimates put 65,000 as the number of homosexuals serving in the military,[41] would revealing their identities lead to a collapse of morale and discipline? Many top military officials do not believe it would. For example, Representative Joe Sestak (D–PA), a retired Navy vice admiral, currently supports lifting the ban. He stated that he was convinced by witnessing firsthand the integration of women on board ships as he commanded an aircraft carrier group. There were similar concerns about privacy and unit cohesion that proved unwarranted.[42] Paul Rieckhoff, executive director of the Iraq and Afghanistan Veterans of America and former Army platoon leader, illustrates an additional point: "Just like in the general population, there is a generational shift within the military. The average 18-year-old has been around gay people, has seen gay people in popular culture, and they're not this boogeyman in the same way they were to Pete Pace's generation."[43]

What to Expect

If the ban on homosexuals was lifted, it is worth considering what impacts there

U.S. Marine Corps (Michael J. Ayotte)

President Obama seeks to repeal the "Don't Ask, Don't Tell" policy

would be on the Services. There are potential lessons to learn from other countries that have lifted the ban on homosexuals serving openly. There was no mass exodus of heterosexuals, and there was also no mass "coming-out" of homosexuals. Prior to lifting their bans, in Canada 62 percent of servicemen stated that they would refuse to share showers with a gay soldier, and in the United Kingdom, two-thirds of males stated that they would not willingly serve in the military if gays were allowed. In both cases, after lifting their bans, the result was "no-effect."[44] In a survey of over 100 experts from Australia, Canada, Israel, and the United Kingdom, it was found that all agreed the decision to lift the ban on homosexuals had no impact on military performance, readiness, cohesion, or ability to recruit or retain, nor did it increase the HIV rate among troops.[45]

This finding seems to be backed by the 2006 Zogby poll, which found that 45 percent of current Servicemembers already suspect they are serving with a homosexual in their unit, and of those, 23 percent are certain they are serving with a homosexual.[46] These numbers indicate there is already a growing tacit acceptance among the ranks.

As pointed out above, basic respect of privacy will be required just as when women were fully integrated into the Services.[47] Dorm and facilities upgrades would be needed. Sexual harassment regulations and sensitivity training would need to be updated, and guidance from leadership would be required.

Aside from the heterosexual population, changes in the behavior of the homosexual population would also be necessary. Several homosexual Servicemembers interviewed reported that given their relatively small numbers, and the secrecy they are faced with, hidden networks have evolved. These networks, built under the auspices of emotional support, have also led to violations of the military regulations governing fraternization between ranks. With any lifting of the ban on homosexuals serving openly, internal logic that condoned abandonment of fraternization regulations would no longer have even a faulty basis for acceptance.

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in a survey from Australia, Canada, Israel, and the United Kingdom, it was found that the decision to lift the ban had no impact on military performance

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Ultimately, homosexuals must be held to the same standards as any others.

Homosexuals have successfully served as leaders. There are several anecdotal examples of homosexual combat leaders such as Antonio Agnone, a former captain in the Marine Corps. Though not openly gay during his service, he claims that "Marines serving under me say that they knew and that they would deploy again with me in a minute."[48] Others who have served in command posi-

tions have made similar observations that though they were not open about their orientation, they knew some of their subordinates knew or suspected, yet they did not experience any discrimination in disciplinary issues. In many cases, more senior Servicemembers' concerns went beyond how their subordinates would handle their orientation to focus on the legal standing and treatment of their partners—another vast area of regulations the Department of Defense would have to sift through since same-sex marriages are governed by state, not Federal, law.[49] Nevertheless, psychologists speculate that it will not be an issue of free acceptance. Homosexual leaders are predicted to be held to a higher standard where they will have to initially earn the respect of their subordinates by proving their competence and their loyalty to other traditional military values. The behavior of the next leader up the chain of command is expected to be critical for how subordinates will react to a homosexual leader.[50]

No doubt there will be cases where units will become dysfunctional, just as there are today among heterosexual leaders. Intervention will be required; such units must be dealt with just as they are today—in a prompt and constructive fashion. Disruptive behavior by anyone, homosexual or heterosexual, should never be tolerated.[51]

There will be some practical changes and certainly some cultural changes if Congress and the President move to lift the ban on homosexuals serving openly in the Armed Forces. These changes will not be confined to the heterosexual populations. Education, leadership, and support will be key elements in a smooth transition even though the cultural acceptance of homosexuals has grown dramatically in the 16 years since the passage of DADT.

The 1993 "Don't Ask Don't Tell" law was a political compromise reached after much emotional debate based on religion, morality, ethics, psychological rationale, and military necessity. What resulted was a law that has been costly both in personnel and treasure. In an attempt to allow homosexual Servicemembers to serve quietly, a law was created that forces a compromise in integrity, conflicts with the American creed of "equality for all," places commanders in difficult moral dilemmas, and is ultimately more damaging to the unit cohesion its stated purpose is to preserve. Furthermore, after a careful examination, there

is no scientific evidence to support the claim that unit cohesion will be negatively affected if homosexuals serve openly. In fact, the necessarily speculative psychological predictions are that it will not impact combat effectiveness. Additionally, there is sufficient empirical evidence from foreign militaries to anticipate that incorporating homosexuals will introduce leadership challenges, but the challenges will not be insurmountable or affect unit cohesion and combat effectiveness. Though, as Congress

the 1993 "Don't Ask Don't Tell" law was a political compromise reached after much emotional debate based on religion, morality, ethics, psychological rationale, and military necessity

clearly stated in 1993, serving in the military is not a constitutional right, lifting the ban on open service by homosexuals would more clearly represent the social mores of America in 2009 and more clearly represent the free and open society that serves as a model for the world. Ultimately, Servicemembers serving under values they believe in are the most effective force multipliers.

Repealing the ban now will be more difficult than when it was created in 1993. It is no longer a Pentagon policy, but rather one codified in law. It will require new legislation, which would necessitate a filibuster-proof supermajority in the Senate.[52] Most likely, leadership on the issue will come from the executive branch, and President Obama's transition team has indicated it will likely tackle the issue next year.[53] It is also possible the law could be struck down by judicial action finding the law unconstitutional.

Based on this research, it is not time for the administration to reexamine the issue; rather, it is time for the administration to examine how to implement the repeal of the ban. **JFQ**

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By DANIEL T. CANFIELD

Army Heritage Museum Collection

Winfield Scott's 1847 Mexico City Campaign as a

MODEL *for* FUTURE WAR

Much work remained for General Winfield Scott even after his victorious arrival in Mexico City on September 14, 1847

Our fixation with conventional battle tends to undervalue the increasing potential of stability operations to decide the political outcomes of military campaigns and clouds our perceptions regarding both the purpose and utility of force.[1] This article uses an abbreviated examination of Winfield Scott's Mexico City campaign to provide perspectives on both the evolving character of warfare and the preeminent challenge confronting America's contemporary operational planners—that is, how to translate ascendancy on the conventional battlefield into achievable and enduring political success. While not dismissing the possibility of traditional, high-intensity, interstate warfare, this article argues that both the character and conduct of America's future conflicts will, in all likelihood, more closely resemble those of Scott's campaign than the black and white political and military paradigms of a bygone era where industrialized nation-states waged near-total wars of annihilation.

Lieutenant Colonel Daniel T. Canfield, USMC, wrote this essay while a student at the School of Advanced Warfighting of the Marine Corps University. It won the Strategy Research Paper category of the 2009 Chairman of the Joint Chiefs of Staff Strategic Essay Competition.

Soldiers drive M–1A1 Abrams tank in victory parade honoring coalition forces of Operation *Desert Storm*

If the United States hopes to consummate military success with enduring political victory in the 21st century, it will need to reconcile the American way of war with the realities of the contemporary operating environment. While offering no clairvoyant panacea, Scott's campaign provides valuable perspective on how to do so. Operating 156 years before the American invasion of Iraq, Scott prosecuted a bold and imaginative campaign that carefully balanced military means with political ends. His skillful integration of anti-guerrilla, stability, and high-intensity combat operations precluded the eruption of a widespread, religious-based insurgency and consummated his tactical victories with enduring political success. In the future, as in the past, it will not be enough to simply destroy or defeat the enemy's armed forces; the American military will have to be able and ready to win the peace within the construct of an overarching campaign design focused on securing a definitive political, not just military, victory.

Future Conflicts

In the warm afterglow of Operation *Desert Storm*, our infatuation with technology and its seemingly unbounded potential to revolutionize armed conflict fueled illusions of military supremacy. In reality, however, *Desert Storm* did not cement our invincibility; it only demonstrated to our adversaries that the means and methods for confronting the United States would have to change. As

9/11 and our protracted conflicts in Iraq and Afghanistan have so painfully illustrated, we cannot expect our enemies to play to our strengths or otherwise conform to our notions of warfare. Rather, they will continue to develop and utilize means that exploit our critical vulnerabilities and give them the best chance to win. With a joint force so dominant in the conventional application of force, do we really think our current or future adversaries will do us the favor of engaging in a traditional combined arms contest?

Wars and military forces are reflections of the societies and cultures that produce them.[2] While technology, firepower, and the relentless quest to destroy an adversary's armed forces won the battles of the 20th century, they may not, in and of themselves, be enough to win the wars of the 21st century. In many ways, the evolution of the character of warfare could be seen as unwinding in the aftermath of the apogee of World War II and the introduction of nuclear weapons. One only need look at the decidedly mixed record of conventionally superior forces in the post–World War II era for evidence of this counterintuitive phenomenon. The apparent decoupling of traditional military force from the ability to achieve enduring political success is a function of an increasingly proliferated, politically complex, and globally integrated world. These trends will only accelerate in the years ahead. The preeminent challenge for American defense planners, therefore, will be to reconcile an American

way of war that is almost totally predicated on the conventional application of combat power directed at the destruction of an adversary's armed forces with the reality that our future opponents, fighting among their own people and buoyed by increasingly sophisticated technical capabilities, will turn to a hybrid combination of regular and irregular methods to secure a definitive political rather than a military victory.

Given the distinct possibility of conflict in places such as Iran, Pakistan, Cuba, Venezuela, sub-Saharan Africa, or, lest we forget, the Korean Peninsula, we should expect America's future wars to more closely resemble the Southern Campaign in the American Revolution, albeit from the British perspective, or Scott's drive on Mexico City rather than the tidy and concise military and political paradigms of a bygone era when industrialized nation-states waged near-total wars of annihilation. Our future commanders will be called on to do much more than simply defeat an adversary's armed forces; they will also be expected to operate among a hostile or ambivalent population whose political will to fight does not necessarily reside in the army or the state. For American military power to

the decoupling of traditional military force from the ability to achieve enduring political success is a function of an increasingly proliferated, politically complex, and globally integrated world

be decisive, it will have to do much more than fight its way in. It will, in all likelihood, also need to be capable of winning the peace by rapidly securing the local population, establishing acceptable levels of political legitimacy, and ensuring American war aims and long-term political objectives are achieved amid the social chaos inherent in the wake of any sizable military intervention. Ironically, the way ahead may look quite similar to the not-too-distant past.

Back to the Future

Through a unique combination of politics, geography, and circumstance, America's Manifest Destiny collided with Mexico during the middle of the 19th century.[3] In January 1846, President James K. Polk ordered

U.S. ground forces, under the command of Zachary Taylor, to take up positions along the Rio Grande, while Commodore David Conner's home squadron, based out of New Orleans, established a naval cordon around Veracruz. These deliberate provocations, designed to exert political pressure on the Mexican government, proved problematic. The President believed that the United States could obtain the territorial concessions it sought through the combination of limited military coercion and continued diplomacy. This view, however, significantly under-estimated Mexican resolve and was based on an incomplete comprehension of Mexican history, culture, and politics.[4]

In 1846, Mexico appeared to be a weak and failing state. Nearly three centuries of Spanish occupation and a bitter war of inde-pendence left its society stratified and politi-cally divided. The government was bankrupt, plagued by inefficiency and corruption, and generally incapable of exercising sovereignty within its northern provinces.[5] Any illusion of a cheap or bloodless victory, however, was shattered on April 25 when Mexican forces,

Library of Congress

Mexican troops ambushed a squad of U.S. Dragoons, killing 14 Americans, April 1846

under the command of General Mariano Arista, attacked Taylor's army north of the Rio Grande. Though surprised, American forces quickly regained the initiative and eventu-ally pursued Arista's defeated army deep into Mexican territory. Taylor's campaign culminated in late September at the Battle of Monterrey. Though seemingly victorious, the Americans found themselves bogged down in bloody urban combat while operating at the end of a dangerously extended overland supply route. Even at this late hour, Polk still clung to the belief that the Mexican govern-

ment would acquiesce in the face of mounting U.S. pressure.

By November 1846, however, it became apparent that the administration's efforts to obtain a negotiated peace had failed. Taylor's campaign, though tactically successful, was politically indecisive. Worse, the President

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Taylor's campaign, though tactically successful, was politically indecisive

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faced trouble at home.[6] Growing domestic unrest and apprehensions about the desultory conduct of an unpopular war resulted in a stunning political rebuke during the Novem-ber 1846 congressional elections.[7] A frustrated and increasingly unpopular President grudg-ingly turned to Winfield Scott. As the Nation's senior military officer, Scott clearly under-stood the dangers of military indecision to the Republic: "A little war—a war prosecuted with inadequate means or vigor—is a greater evil than a big war. It discredits the party possessed of superior means; it exhausts her finances, exhausts enthusiasm, and generally ends in a failure of all the objects pro-posed."[8] Yet the general's military advice had there-tofore been muted by an administra-tion determined to win the war on the cheap and a President suspi-cious of Scott's politics and future ambitions.[9]

Throughout the summer of 1846, Scott lobbied the Secre-tary of War, William Marcy, for permission to conduct an amphibious landing at Vera-cruz, followed by a rapid march on Mexico City.[10] By late October, the general formally submitted the first of two reports describing his operational concept in detail.[11] While Scott's first letter focused on the seizure of Veracruz, his second, dated November 12, concentrated on the justification and conduct of a subsequent overland drive on the Mexican capital. Realizing that "to compel a people, singularly obstinate, to sue for peace,

it is absolutely necessary, as the sequel in this case showed, to strike, effectively, at the vitals of the nation," Scott sought to avoid any further protraction of hostilities by threaten-ing the very heart of the Mexican regime.[12]

In late November, with Taylor's forces confronting an increasingly violent guerrilla war in northern Mexico and political pressure mounting at home, the President approved Scott's plan and placed him in command of the forthcoming expedition. After a winter of hurried preparation, Scott and his naval counterpart, Commodore David Conner, put three U.S. divisions ashore at Collado Beach, 2 miles south of Veracruz, on March 9, 1847.[13] This remarkable feat of seamanship and inter-Service cooperation culminated on March 29, 1847, when the city's beleaguered defenders capitulated after an abbreviated siege. With Veracruz now in American hands, Scott focused his attention on the civil population. Being aware of Napoleon's difficulties in Spain and realizing that the inherent religious and cultural differences between the victors and the vanquished provided fertile ground for insurgency, the general undertook a deliberate campaign to mitigate the threat of guerrilla warfare breaking out in the wake of American occupation. Scott immediately issued a formal proclamation to the Mexican people:

Americans are not your enemies, but only the enemies of those who misgoverned you and brought about this unnatural war. To the peaceable inhabitants, and to your church, which is respected by the govern-ment, laws, and people in all parts of our country, we are friends.[14]

More importantly, the general reinforced words with decisive action. Scott moved quickly to impose order on the local population and ensure the discipline of his own troops. He instituted martial law, employed local laborers to clean and repair the city, opened the port to foreign trade, installed one of his division com-manders as military governor, and reopened the city's shops. The general also made unprec-edented overtures to local religious leaders. American troops were required to salute Catholic priests. Scott, himself a devout Prot-estant, took the unprecedented step of attend-ing Catholic Mass with the newly installed civil governor and their combined staffs.[15] In retrospect, Scott's astute handling of the civil population remains one of the least appreciated aspects of the campaign. It was also one of the

most important. Keenly aware that he would be waging war among the Mexican people, Scott realized he needed their support or, at the very least, their ambivalence, if he harbored any desire to obtain U.S. war aims.

On April 2, Scott's intrepid and under-manned army boldly turned its back on the sea and raced for Jalapa (elevation 4,680 feet), a small but important town located 74 miles inland, just above the Yellow Fever belt. On April 18, Scott's 8,500 effectives shattered Santa Anna's well entrenched 12,000-man advance guard at Cerro Gordo. With the road to Jalapa now open, Scott pursued the rem-nants of Santa Anna's army deep into central Mexico. On May 15, the U.S. 1st Infantry Division, under the command of Brigadier General William Worth, entered Puebla (ele-vation 7,091 feet, population 80,000) without a fight. Scott's success, however, proved precari-ous. He did not have enough men to secure his

U.S. forces land at Veracruz, 1847

lifeline to the sea. Forced to detach troops in order to garrison Veracruz, Jalapa, and now Puebla, he faced guerrilla bands that operated with impunity in the hinterland between out-posts. With his supply line virtually severed and Santa Anna's main body lurking some-where to his front, Scott simply could go no farther. He spent the next 2 months covertly prosecuting anti-guerrilla operations and attempting to resupply his ragged army while he desperately awaited additional troops.[16]

By the first week of August, Scott's reinforcements finally arrived after fighting their way up from the coast, but they only managed to bring his effective strength up to 10,738.[17] Nevertheless, on August 7, Scott resumed his advance on Mexico City. By August 10, only a small garrison at Puebla, left behind to care for the sick and wounded, linked Scott's army to the sea. Initially, the march went unchecked. The Americans advanced to Rio Frio (elevation 10,000 feet) and peered down on the picturesque mountain valley that housed the fabled Halls of Montezuma. Santa Anna, however,

had not been idle; he organized 30,000 men for defense of the capital. Scott skillfully maneuvered his army to the south of the city, avoiding a direct assault along the main avenue of approach, and defeated Santa Anna at Contreras and Churubusco on August 20. After an unsuccessful armistice, Scott seized a foothold on the outskirts of the Mexican capital at Molino del Rey on September 8. Less than a week later, his relentless drive on Mexico City culminated in a crescendo of vicious urban combat. On September 13, Scott's army, now down to just 7,000 effec-tives, pierced the city's inner defenses and seized the fortress of Chapultepec.[18]

Despite Scott's seemingly victorious entrance into the capital on September 14, his work remained far from complete. Though Mexican forces evacuated the city on Sep-tember 13, Santa Anna had emptied the city's jails prior to his departure. The release of thousands of prisoners combined with a sub-stantial number of disaffected residents fueled an explosion of violence directed against the Americans. As he had done throughout the campaign, Scott moved quickly to restore civil order. Martial law was immediately instituted. Sharpshooters posted throughout the city shot any Mexican brandishing a weapon. Struc-tures used by insurgents, particularly snipers, were summarily leveled by U.S. artillery fire. Additionally, Scott insisted that Mexican law-makers help restore order, threatening to sack the city unless resistance ceased.[19] Eventually, a tense calm settled over the capital, but Scott now faced his most formidable problem: how to achieve a satisfactory political endstate, which was, after all, the raison d'etre for the military campaign in the first place.

The general never intended to completely destroy the Mexican army or depose the government. He realized, quite pragmatically, that if he did so, social chaos would reign, and there would be no one left to negotiate with.[20] Ironically, Scott, now at the zenith of his martial success, was also the most vulnerable. Down to just 7,000 effectives, virtually cut off from the sea, and operating 300 miles inland, he faced the daunting prospect of overseeing the installa-tion of a new government and preventing the outbreak of large-scale guerrilla warfare while attempting to occupy and govern a potentially hostile population of 7 million people.[21] Paradoxically, Scott's aggressive and adroit implementation of sound civil-military poli-cies in the wake of his tactical victories, not

the conventional defeat of Santa Anna's army, proved decisive.[22] The policies also reflected Scott's genius and bore witness to his intuitive appreciation of the complex military, political, and cultural problems confronting the United States in Mexico.

Enduring Relevance

Fourteen years before the American Civil War, the United States prosecuted a bold and imaginative expeditionary campaign that achieved decisive political results. In many ways, it still serves as a model of American operational art.[23] Operating over vast dis-tances in a foreign culture, and dwarfed by a potentially hostile population, the American military confronted and overcame a number of complex problems. Scott, ably assisted by his naval counterpart, Commodore Conner, expertly planned and conducted America's first large-scale amphibious assault, seizing the strategic port of Veracruz with surpris-ing speed and at little cost.[24] He then turned his back on the sea and marched his under-manned army nearly 300 miles inland across inhospitable terrain. Operating over an extended and dangerously exposed supply line

the release of thousands of prisoners combined with a substantial number of disaffected residents fueled an explosion of violence directed against the Americans

that was tenuously tied to the sea, Scott won five major battles against numerically superior and entrenched opponents.

With just 7,000 men, Scott seized and occupied Mexico City, a hostile capital of 200,000 inhabitants, and then proceeded to govern the people in such a politically astute way as to prevent a widespread guerrilla war from erupting. Working hand in glove with the President's personal envoy, Nicholas Trist, Scott oversaw the installation of a new govern-ment, prosecuted an effective counterinsur-gency campaign, and helped negotiate a treaty that obtained U.S. war aims.[25] His success, however, was neither predestined nor fore-ordained; it was the product of imagination anchored on the bedrock of reality, boldness tempered with judgment, and determined leadership that understood the relationship between military means and political ends.[26]
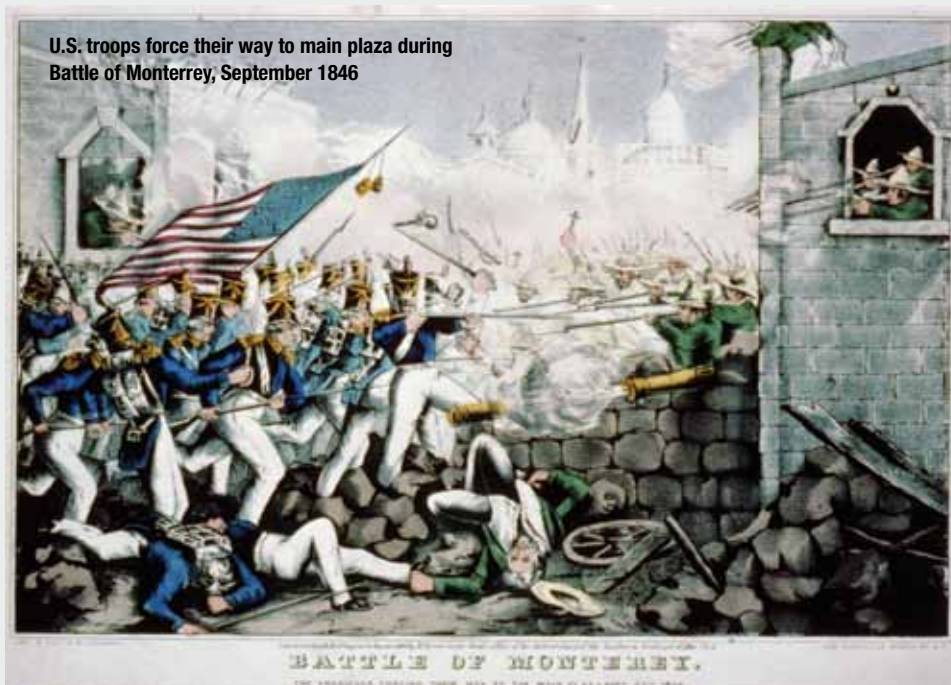
Scott's campaign provides valuable perspective on the difficulties associated with projecting expeditionary power inland, conducting maneuver warfare from the sea, and facing the cruel realities of urban combat. It also offers keen insight into the challenges of military occupation, counterinsurgency and stability operations among a foreign culture, and campaign design.[27] With the clairvoyance of hindsight, the architects of Iraq, both civilian and military, would have been much better off reflecting on the planning and execution of Scott's campaign as opposed to attempting to emulate the military and political paradigms of *Desert Storm* or World War II. Predicting the future remains problematic. Scott's campaign, however, not only represents an illuminating window into our past, but may also provide an intriguing glimpse into our future.

Model for Design

Future campaign planners will likely encounter many of the same problems and complexities that confronted Scott and his staff in Mexico. No matter the character or location of any future conflict, the U.S. military will have to get there first. The joint force will require rapid augmentation from the Reserve Component, fight a long way from the continental United States, and be sustained, at least initially, from the sea. This will require sizable and sustainable expeditionary power projection. Once U.S. forces arrive in theater, they will likely encounter a shrewd and determined enemy

> *future campaign planners will likely encounter many of the same problems and complexities that confronted Scott and his staff in Mexico*

employing a hybrid combination of conventional and irregular threats. American ground forces will be outnumbered on most future battlefields and will almost certainly find themselves dwarfed by an ambivalent or potentially hostile indigenous population. Our future commanders will be called on to win quickly at the lowest possible cost in life and treasure. To do so, however, we must, no matter how begrudgingly, reach a prescient appreciation of how our future adversaries will actually fight.

U.S. troops force their way to main plaza during Battle of Monterrey, September 1846

BATTLE OF MONTEREY.

Library of Congress (Nathaniel Currier)

Reconciling the American Way of War

The United States faces a labyrinth of emerging strategic challenges.[28] Confronted with the reality of an uncertain future, it would be dangerous to dismiss or overweigh one form of warfare over the other. Yet it will not be enough to simply field a "balanced" joint force capable of operating across the range of military operations. Rather, the leaders of that force must know how to employ it. Unfortunately, rather than adapting to our opponents' unpleasant propensity to wage irregular warfare, the United States remains intellectually committed to refighting, albeit with 21st-century precision, World War II. Though much progress has been made, we continue to field an expensive and wonderfully equipped joint force that is, in reality, more attuned to confronting our friends and allies than actually fighting the Nation's current and future adversaries.[29] More importantly, the way we think about armed conflict—the so-called American way of war—remains dangerously overweighted toward the conventional.[30] Writing nearly 40 years ago, Russell Weigley not only ominously foreshadowed the nadir of America's tragic involvement in Vietnam, but also prophetically described the fundamental problem confronting us today:

The twentieth-century United States has not adjusted easily to involvement in irregular war. Our immense wealth and productivity, our great resources of manpower, and our national conviction that war is an abnormal condition, completely distinct from peace, and a condition which should be terminated quickly in a clear-cut decision, all equipped us admirably to fight and win the two world wars. But they do not fit us so well for limited wars in climate and terrain where massive military power can be in some ways a liability, where victory itself is almost indefinable, and where enemies fight elusively and with methods so thoroughly opposed to conventional rules of war that many of the textbook principles for its conduct are stood on their heads and bring only boomerang results.[31]

Despite Vietnam, Beirut, Mogadishu, 9/11, and our prolonged struggles in Iraq and Afghanistan, the American military has yet to institutionalize the hard-won lessons of counterinsurgency or reconcile the competing theories of regular and irregular warfare. Our mental toolkit remains strangely devoid of anything save an oversized hammer that is increasingly out of place in a 21st-century world. Rather than expending valuable intellectual energy renaming old ideas, we should carefully consider how to synthesize the competing theories and styles of warfare within a new American way of war that imbues our commanders, operational planners, and warfighting organizations with the flexibility of mind to prosecute regular and irregular operations

simultaneously in pursuit of achievable and enduring political goals.

We need to stop thinking, planning, and acting as if there were two separate and distinct wars: a conventional one fought with heavy maneuver forces governed by the intellectual auspices of AirLand Battle, and an unconventional one fought with "special" or "general purpose forces" employing counterinsurgency techniques.[32] While contemporary defense planners grapple with the seemingly dichotomous nature of combat instead of stability operations, the reality, as Scott's exploits so clearly illustrate, is that current and future practitioners of American operational art will likely need to do both *simultaneously* if they wish to achieve enduring political success. Perhaps the real legacy of Iraq is not the obvious conclusion that an ounce of insurgency prevention, properly integrated and employed before, during, and immediately after "combat" operations, is worth a pound of military cure, but rather the sublime realization that in an age of limited war, the American military may have to do it again—against an even more determined and capable enemy.

Admittedly, the selective use of history is dangerous, but the similarities between the character and conduct of Scott's campaign and those of America's contemporary and most likely future battlefields are striking and simply too important to ignore.[33] The world and the conduct of warfare are evolving. The American military must anticipate and adapt to the realities of the world we actually live in, not the one we want it to be. While our shallow focus on the destruction of the enemy's armed forces served us well in the age of industrialized, near-total war, it may become a liability in a future world of limited wars where the lines between regular and irregular warfare will continue to blur. If the United States hopes to consummate military success with enduring political "victory" in the 21st century, it will need to reconcile the American way of war with the realities of the contemporary and future operating environments.

Future practitioners of operational art will need to operate at the confluence of AirLand Battle and counterinsurgency theory, whereby the destruction or defeat of an enemy's armed forces only constitutes a necessary prerequisite for the *real* objective: a decisive engagement with a hostile or ambivalent populace. These seemingly disparate tasks, however, cannot be viewed with linear precision or undertaken sequentially in phases. Rather, steps must be taken to win both the war and the peace within the construct of an overarching campaign design that thoughtfully integrates both combat and stability operations from the start. A

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steps must be taken to win both the war and the peace within an overarching campaign design that integrates combat and stability operations from the start

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sophisticated and adroit comprehension of the relationship between military means and political ends, not just "shock and awe" or battlefield brilliance, will be required. While no panacea, a careful examination of Scott's Mexico City Campaign nonetheless offers keen insight and valuable perspective on how to do so. Paradoxically, the keys to America's future success may not need to be reinvented but just relearned—*ex preteritus nostrum posterus.* **JFQ**

NOTES

[1] Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (London: Allen Lane, 2005), 1–19, 374–415.

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[3] Jack K. Bauer, *The Mexican War, 1846–1848* (New York: Macmillan, 1974), 1–13; and Justin Harvey Smith, *The War with Mexico*, vol. I (New York: Macmillan Company, 1919), 123.

[4] Bauer, 17.

[5] Stephen A. Carney, *The Occupation of Mexico, May 1846–July 1848* (Washington, DC: U.S. Army Center of Military History, 2005), 4–7.

[6] Allan Peskin, *Winfield Scott and the Profession of Arms* (Kent, OH: Kent State University Press, 2003), 136–137.

[7] Brian G. Walton, "The Elections for the Thirtieth Congress and the Presidential Candidacy of Zachary Taylor," *The Journal of Southern History* 35, no. 2 (May 1969), 186–202.

[8] Winfield Scott, *Memoirs of Lieut.-General Scott, LL.D.*, vol. II (Freeport, NY: Books for Libraries Press, 1970), 1270.

[9] See Charles Winslow Elliott, *Winfield Scott, the Soldier and the Man* (New York: Macmillan Company, 1937), 436–437.

[10] Ibid.

[11] Winfield Scott, "Veracruz and its Castle," House Executive Document 60, October 27, 1846, 1268–1270; and "Veracruz and its Castle—New line of operation, thence upon the capital," House Executive Document 60, November, 12, 1846, 1270–1274.

[12] Scott, *Memoirs*, vol. I, 404–405.

[13] Bauer, 232–258.

[14] Winfield Scott, "Proclamation," quoted in Elliott, 461.

[15] Ibid., 460–462.

[16] Bauer, 271–272.

[17] Anton Adams, *The War in Mexico* (Chicago: Emperor's Press, 1998), 90–91.

[18] The details of Scott's final thrust from Puebla to the capture of Mexico City are taken from Bauer, 279–325; Elliott, 495–552; and Justin Harvey Smith, *The War with Mexico*, vol. II, 79–188. Also see Scott's official reports of the Battle of Molino del Rey, Battles of Contreras and Churubusco, and the Battle of Mexico City, available at <www.dmwv.org/mexwar/documents/cgordo.htm>.

[19] Elliott, 553–557; Timothy D. Johnson, *A Gallant Little Army: The Mexico City Campaign* (Lawrence: University Press of Kansas, 2007), 239–241.

[20] Johnson, 196.

[21] Smith, *The War with Mexico*, vol. I, 3.

[22] Johnson, 269.

[23] Edward S. Wallace, "The United States Army in Mexico City," *Military Affairs* 13, no. 3 (Autumn 1949), 159.

[24] Bauer, 232–258. Also see Jack K. Bauer, "The Veracruz Expedition of 1847," *Military Affairs* 20, no. 3 (Autumn 1956), 162–169.

[25] Johnson, 114–116, 142–143, 266–268.

[26] Peskin, 159–160, 191.

[27] Carney, 1–3.

[28] Colin S. Gray, *Another Bloody Century: Future Warfare* (London: Phoenix Paperbacks, 2007), 145–161.

[29] For important perspective on the debate, see Robert M. Gates, "The National Defense Strategy: Striking the Right Balance," *Joint Force Quarterly* 52 (1st Quarter 2009), 2–7.

[30] Colin S. Gray, *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt?* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2006), 29–49, 53–55.

[31] Russell Weigley, *The Partisan War: The South Carolina Campaign of 1780–1782* (Columbia: University of South Carolina Press, 1970), 1.

[32] John McCuen, "Hybrid Wars," *Military Review* (March-April 2008), 113.

[33] For the dangers inherent in the selective use of historical example, see Howard, 188–197.
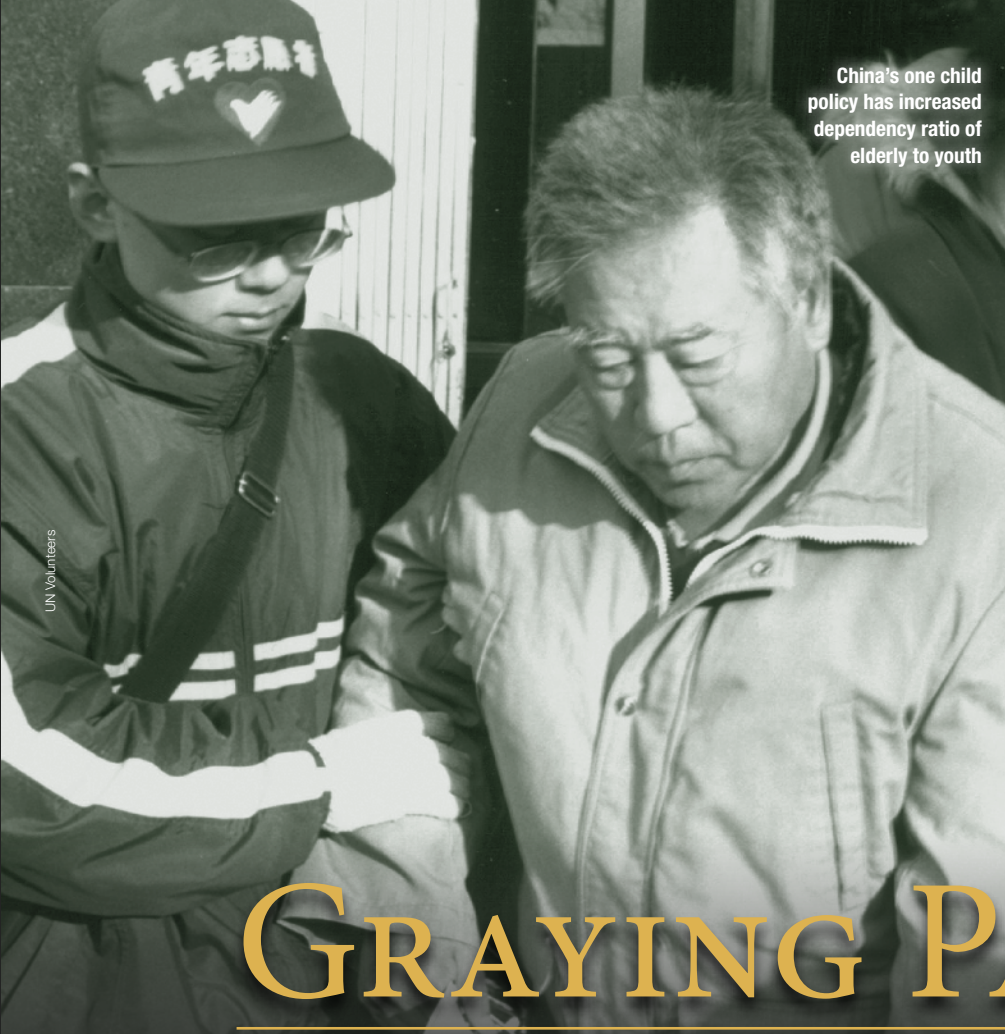
China's one child policy has increased dependency ratio of elderly to youth

By MATT ISLER

China appears to be at the edge of an historic demographic transition, setting the country on a path to grow old before it becomes prosperous.

—*Global economist Cliff Waldman*[1]

GRAYING PANDA SHRINKING DRAGON

The Impact of Chinese Demographic Changes on Northeast Asian Security

Since 1980, China's "one child" policy has successfully slowed its population growth and facilitated stable economic growth. By curtailing over 250 million births since its inception, however, the one child policy also induced significant long-term consequences. According to China's National Committee of Population and Planned Birth, China faces three major demographic events during the next 30 years: a peak of workers entering the labor market, a reversal of population growth, and a rapid increase in the age of the Chinese population.[2] Furthermore, China's one child policy also created a significant and growing gender imbalance.[3] These demographic changes promise to undermine China's long-term stability by inducing labor shortages, slowing economic growth, and increasing pressure for internal migration and immigration. Conversely, continued U.S. demographic strength and increased Chinese risk aversion will constrain China's belligerence and stabilize its demographic transformation. Together, these forces foretell an aging, constrained, and less belligerent nation after the mid-2030s.

United Nations (UN) population forecasters expect China's population to grow only marginally until 2030, plateau at 1.46 billion until 2035, and then fall slightly to 1.41 billion by 2050.[4] Perhaps more significant than population growth reversal will be rapid aging, as the median age will likely increase from 30 to 41 by 2030, and to 45 by 2050.[5] During this period, seniors will represent the most rapidly growing demographic group, as the proportion over age 60 triples from 10.9 percent to 35.8 percent by 2050, while the over-80 population quadruples from 1.8 percent to 6.8 percent.[6]

Long-term Labor Shortages

One of the most immediate economic consequences of the one child policy will be decreasing numbers of laborers entering the workforce, which threatens to increase labor costs, constrain economic growth, and increase immigration pressures. The UN forecasts that China's working-age population, defined as those 15 to 59 years of age, will fall after 2010 as a percent of the total population, and the absolute working-age population will decline after 2015.[7] The shrinking labor pool will likely increase labor costs and could slow or even reverse China's economic growth.[8]

Lieutenant Colonel Matt Isler, USAF, wrote this essay while a student at the National War College. It won the Strategy Article category of the 2009 Chairman of the Joint Chiefs of Staff Strategic Essay Competition.
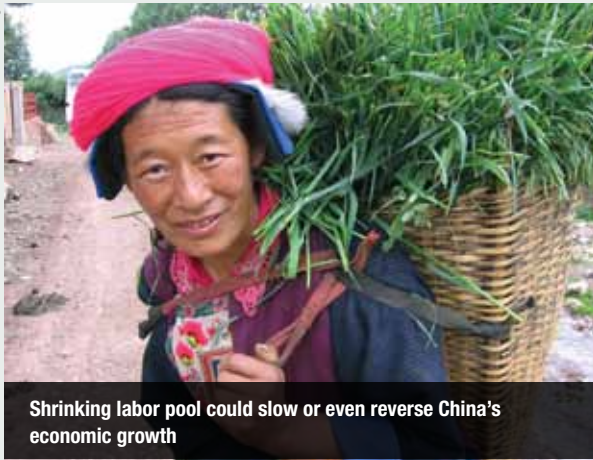
Shrinking labor pool could slow or even reverse China's economic growth

A shrinking labor force is likely to fuel internal demand for migration to meet the country's labor needs, which could further destabilize China. Currently, the rural provinces account for virtually all of Chinese population growth, while the wealthy provinces of Shanghai and Beijing effectively produce zero population growth.[9] As poorer regions such as Tibet produce excess laborers and more wealthy coastal areas fail to produce enough laborers, China faces long-term pressure for internal migration.[10] However, social benefits for migrant laborers are tied to their rural households, most lack insurance, and the government considers the displaced laborers the primary source of crime and a threat to public order.[11]

In addition to increasing pressure for internal migration, China's labor shortage will likely fuel demand for immigrant labor after 2015. Among China's neighbors, Japan and South Korea face similar workforce declines. Meanwhile, China's less-developed neighbors—Vietnam, Mongolia, and Burma—should continue steady population growth past 2050.[12] These three countries should offer a more favorable working-age (15–59) cohort in 2020, and may be able to meet some of China's labor needs.[13] Regardless of how China's labor needs are met, labor shortages promise to constrain economic growth after 2020 and increase migration and immigration pressures.

Transitions

Furthermore, the simultaneous nature of China's economic and demographic transitions presents a further source of internal instability. "Normal" demographic transitions generally follow a path from a high fertility rate, high mortality rate, and low income to a state of low

fertility,[14] low mortality, and high income characterized by industrialized nations.[15] Contrary to such a normal demographic transition, China faces the challenges of economic growth, industrialization, and urban assimilation of a large rural populace simultaneous with its rapid demographic transitions in the age and size of its workforce.

In particular, China's rapid rise in old-age dependency during a sudden decline in the workforce "could trigger an economic and political crisis."[16] In 2025, China's purchasing power parity will surpass that of the United States just as its last large "pre–one child" generation, born in the 1960s, begins to retire. This generation's retirement will rapidly increase China's old-age dependency burden just as

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this generation's retirement will rapidly increase China's old-age dependency burden just as China becomes a middle-income country

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China becomes a middle-income country.[17] Because these economic and demographic transitions will occur simultaneously, China "will face a developed country's level of old-age dependency with only a developing country's income,"[18] and may face social instability beginning in the mid-2020s.[19]

Growing Gender Imbalance

China's family planning policy also induced a significant gender imbalance that will likely exacerbate migration and immigration pressures. China's sex ratio balance, the number of males per 100 females,[20] grew from a healthy 106.3 in 1975 to an imbalanced 120.5 in 2005.[21] The imbalance is worse in rural areas, where individual provinces have reported sex ratios over 137.[22] This significant population (20–21 percent) of excess

males will likely increase competition for the small pool of females, intensify internal migration pressures, foster demand for immigrant brides,[23] and fuel demand for criminal networks that recruit and traffic brides. If this demand is not met, there is broad consensus that China could face increased levels of "antisocial behavior and violence [that] will ultimately present a threat to long-term stability and the sustainable development of Chinese society."[24]

Long-term Growth in U.S. Power

While China's demographics threaten to constrain its economic growth, American demographics promise to support long-term U.S. economic health. The UN forecasts that the U.S. population will grow strongly from 285 million in 2000 to 409 million in 2050, largely due to immigration.[25] Meanwhile, other major economic powers such as Japan, the European Union, and Russia face decreasing workforce populations and increasing dependency ratios. According to a 2008 report from the Center for Strategic and International Studies, the United States "is the only developed nation whose population ranking among all nations—third—will remain unchanged from 1950 to 2050. . . . [The United States] is also the only developed economy whose aggregate economic size will nearly keep pace with that of the entire world's economy." As the U.S. gross domestic product will likely expand steadily as a share of the developed-world totals, China, Russia, Japan, and the European Union will see their economic power relatively decreased.[26] This will strengthen the relative power of the United States in the developed world to a situation mirroring its relative position immediately following World War II.[27] The net effect of these changes will be increased U.S. influence
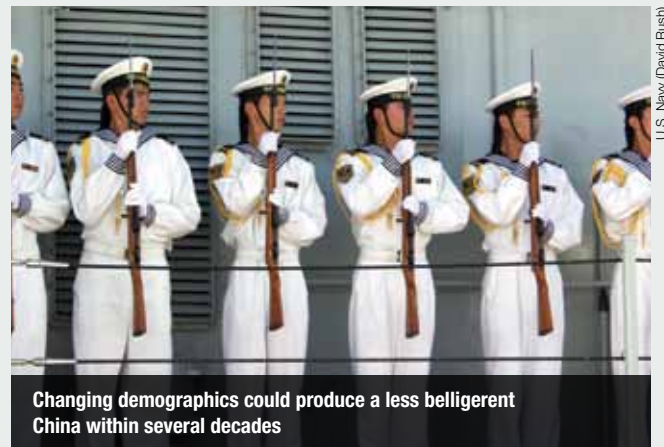
Changing demographics could produce a less belligerent China within several decades

U.S. Navy (Scott D. Sagisi)
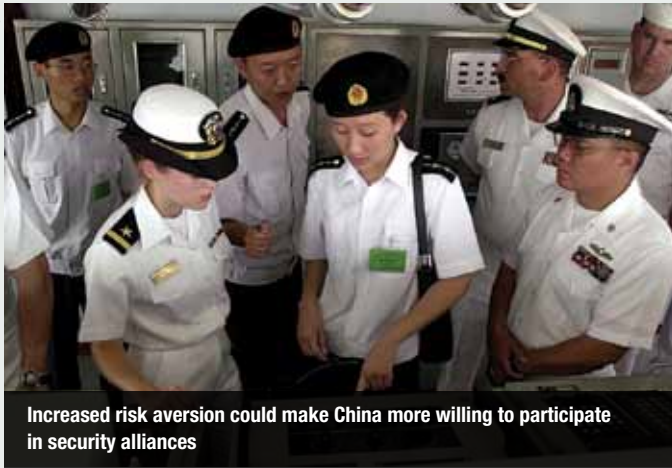
Increased risk aversion could make China more willing to participate in security alliances

that will constrain China's dominance of Northeast Asia.

Increased Risk Aversion Likely

In addition to looming labor shortages and long-term economic challenges, the effects of China's one child policy include long-term social consequences that will increase Beijing's risk aversion and constrain regional belligerence. As the policy effectively curtailed the number of children in each family, it also increased the relative *value* of each child to the family.[28] As China's population ages and begins to shrink, each young citizen faces the burden of caring for his or her two parents and four grandparents.[29] This increasing dependency, coupled with an inadequate public pension system, increases each child's value to the family and

the effects of China's one child policy include long-term social consequences that will increase Beijing's risk aversion and constrain regional belligerence

makes risk-laden military activities inherently threatening to the long-term interests of families.

Further exacerbating China's risk aversion will be macro-level aging, which will likely force a reallocation of resources toward health care and social programs required to sustain an aging population.[30] Together, family-level risk aversion and resource demands for social programs will likely make China less willing to risk the future generation in war.[31] To sustain its strength while

minimizing manpower demands, the military may be forced to outsource nonvital activities, invest in high-tech capital such as robotics and unmanned systems, and find labor through offers of citizenship for service. China may also be more willing to participate in security alliances with friendly developing countries.[32]

China's simultaneous industrialization and demographic transformation pose risks and opportunities for Northeast Asian security. While an aging population, shrinking workforce, and large gender imbalance threaten to undermine internal stability by inducing labor shortages, slowing economic growth, and increasing pressure for internal migration and immigration, continued U.S. demographic strength and increased Chinese risk aversion will constrain China's belligerence and act to stabilize its demographic transformation. The net effect of these competing forces promises to be an aging, less powerful, and less belligerent China after the mid-2030s. **JFQ**

N O T E S

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[3] "China steps up 'one child' policy," BBC News, September 25, 2000, available at <http://news.bbc.co.uk/2/hi/asia-pacific/941511.stm>; Clay Chandler, "Little Emperors," *Fortune* 150, no. 7 (2004), 138–140, 143–144, 148.

[4] Somnath Chatterji et al., "The Health of Aging Populations in China and India," *Health Affairs* 27, no. 4 (2008), 1052–1063. See also United Nations (UN) World Population Forecast, 2006 revision, available at <http://esa.un.org/unpp/>. Population numbers published in this article reflect the "medium variant" of the UN population forecast; the assumptions and methodology are listed at <http://esa.un.org/unpp/index.asp?panel=4>.

[5] Richard Johnson, "Economic Policy Implications of World Demographic Change," *Economic Review* 25 (January 1, 2004), available at <www.allbusiness.com/north-america/united-states-missouri-metro-areas/1013315-1.html>. See also UN World Population Forecast.

[6] Chatterji et al.

[7] Waldman, 6.

[8] Richard Jackson and Neil Howe, "The Graying of the Great Powers: Demography and Geopolitics in the 21st Century—Major Findings of the Report" (Washington, DC: Center for Strategic and International Studies, May 2008), 4, available at <www.csis.org/component/option,com_csis_pubs/task,view/id,4453/>.

[9] Waldman, 8.

[10] Ibid., 8–11.

[11] Alexandra Harney, "The Chinese Migrant's Mindset," *The Wall Street Journal*, March 12, 2009, available at <http://online.wsj.com/article/SB123680436558899933.html>.

[12] UN World Population Forecast.

[13] Waldman, 8.

[14] Ibid., 4. The fertility rate is the number of children born per woman over her lifetime; an average fertility rate of 2.1 births is typically required for population replacement.

[15] Ibid., 2.

[16] Jackson and Howe, 11.

[17] Ibid., 10.

[18] Ibid., 5.

[19] Ibid., 4–5.

[20] Marc Feldman, "Gender Imbalance in China," Morrison Institute for Population and Resource Studies, Stanford University, October 2008, available at <http://aparc.stanford.edu/events/sexratio_imbalance_and_gender_studies_in_china/>.

[21] Ibid., 4; Shuzhuo Li, "Imbalanced Sex Ratio at Birth and Comprehensive Intervention in China," 4th Asia Pacific Conference on Reproductive and Sexual Health and Rights, Institute for Population and Development Studies, Xi'an Jiaotong University, October 29, 2007, 1, available at <www.unfpa.org/gender/docs/studies/china.pdf>.

[22] Ibid.

[23] Ibid.

[24] Shuzhou, 1.

[25] UN World Population Forecast.

[26] Jackson and Howe, 7–11.

[27] Ibid., 8.

[28] Ibid.

[29] Ibid.

[30] Chatterji et al.

[31] Jackson and Howe, 4.

[32] Ibid., 12.

Being first to take and disseminate photos or videos of an incident offers advantage in shaping perceptions and reactions

Strategic Communication
AND THE Combatant Commander

By JEFFREY B. JONES,
DANIEL T. KUEHL,
DANIEL BURGESS, *and*
RUSSELL ROCHTE

It is important to emphasize the indispensable role that combatant commanders play in strategic communication (SC), which includes the coordination of statecraft, public affairs (PA), public diplomacy, military information operations, and other actions through which we engage and influence key global communities. Given the current negative assessment of U.S. efforts in this arena, a concurrent, balanced, and collaborative effort is required. Combatant commanders and their staffs, as well as deployed forces, are important instru-

ments of influence. They are "current" in terms of what might have resonance and what will not. They have built personal relations and are unparalleled conduits of influence in virtually every country. These commanders realize that every member of their commands who interacts with any international audience, no matter how large or small, is their most important strategic communicator at that moment and location.

This article explores the role of the combatant commander as a central conduit for, contributor to, and implementer of U.S.

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Government strategic communication. It also examines the concept of the "Influence Cycle" and presents a series of focused recommendations for the improvement of this critical national security function.

The Commander's Role

The combatant commander leads the largest single group of America's strategic communicators in almost any area of the world—the uniformed men and women of the Armed Forces and a growing number of civilians under his command. To be effective, he must have an effective SC architecture that consists of qualified people, analysis, technology, systems, procedures, advocates, education, linguistic and lexicon knowledge, innovation, fusion, coordination, cooperation, and effective linkages among strategic, operational, and tactical levels of engagement, as well as among joint, combined, and interagency players and planners. Successful architecture also requires resonance, education and training, and incentives. Finally, the combatant commander's role in strategic communication is now mandated by Annex Y of the Joint Operation Planning and Execution System (JOPES) process.

In terms of multinational and coalition issues:

■ Combatant commanders can/must/do play a central role.

■ "Standing" information coordinating committees would help.

■ There is a mandate for SC inclusion from the outset, not as an afterthought, for all operational plans (OPLANs), concept of operations (CONOPs) plans, Department of Defense (DOD)-sponsored regional centers, and all transnational issues including but not limited to combating terrorism, counterproliferation, and counterdrug operations.

■ While we have some degree of unilateral capacity, we should tap into a much wider set of conduits and capabilities, and be actively involved in helping to increase capacity; we need to engage the U.S. interagency community, private sector, and allies in these efforts.

■ Some allies and friends have better human intelligence, superior equipment, more resonant conduits, and significantly more presence and knowledge in areas where we have little or none. Some of our partners may be open to providing cooperative analysis and feedback, or engaging in combined

activities or even research, development, test, evaluation, and acquisition.

Based on experience in both Afghanistan and Iraq, it is clear that while planning for military operations has a broad scope of considerations, planning for SC effects remains neither pervasively integrated into the process nor, in some cases, even a consideration for operations. Even what constitutes

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the information environment is not well understood. Planning for SC effects needs to be incorporated into the targeting cycle regarding poststrike influence activities, a role for which the Intelligence Community is poorly prepared. We remain either reactive or overly incremental in giving visibility to the facts, allowing the adversary or adversarial media to retain the "offensive." Worse, our reaction is often slowed by our bureaucracy to the point where efforts are ineffective. If adversarial media use disinformation, not responding to disinformation emboldens those who produce and propagate it. Disinformation needs to be actively countered as rapidly and vigorously as possible. Failing to respond tends to validate the disinformation.

The Influence Cycle

Air Force Colonel John Boyd developed his concept of decision superiority from his experience flying combat missions during the Korean War. Known as an OODA (observe, orient, decide, act) loop, Boyd's concept holds that whichever decision system—whether an individual warrior or an entire command structure—can *observe* what is happening, *orient* as to what those observations mean, *decide* what to do about it, and *act* to execute that decision will generally win the contest. But the concept is focused on short-term, fast-acting decisionmaking. Can it influence outcomes over the course of decades?

The answer is "not exactly," but the approach itself is useful and provides a way forward. It is important here to be aware of the information environment, the combination of information connectivity and the networks

that convey the informational content that creates a cognitive effect. The Influence Cycle begins with the recognition that every audience—whether as small as one individual or as large as the global Islamic population—is constantly sensing the content carried by rapidly expanding global connectivity. The audience reaches out to obtain some of this information, some is sent to the audience, and much just "happens." The goal of any influencer/strategic communicator is for the audience to internalize that information so it becomes a set of perceptions favorable to the attainment of particular objectives. This new set of perceptions must be constantly reinforced and developed—especially in the face of inevitable adversary reaction—so they become a new set of beliefs, which thus enables a set of observable behaviors. If the behavior is observable and its change from previous behavior is measurable, we have that most valuable commodity: a metric for gauging the effectiveness of an influence campaign.

Any professional influencer can quote the necessary steps of what amounts to a template for influence, beginning with a clear understanding of the intended objective and cultural analysis of the key audience, then progressing through the formulation of the message, determination of the most effective transmission medium, and assessment of the effort's success. Each of these steps is critical in its own right, and when viewed holistically, they clearly imply that the task is very difficult. While there are certainly quantitative methodologies that can aid some of the necessary analytical steps, such as polling and audience measurement, an influence campaign cannot be developed using a slide rule. It needs the expert hands of people with long education and experience in the arts of influence, and any advertiser or political persuader knows this. Get the audience and cultural analysis wrong, and our influence effort may actually stiffen the adversary's negative perceptions toward us. Get the wrong message to that audience—never forgetting the most important form of message or content is an action that the target audience observes—and all the hard work of the audience analysis may be wasted. Select the wrong means of message delivery—shortwave radio when the audience is on Twitter or is in the mosque every Friday—and all the positive work of the earlier steps will be for nothing. Finally, if we do not have a useful means for

measurement, we may not even know that we have been successful. But marrying this analytical process to the Influence Cycle will provide the SC planner and the combatant commander with a useful approach for the planning and conduct of the influence campaign.

However, unlike the OODA loop from which it is drawn, nothing about the Influence Cycle is likely to happen quickly; the measurement period will not be hours or days—it will probably be years to decades. This is not a tool for tactical impact on short-period crises, but is a strategic weapon for employment in long-term campaigns such as the "war of ideas."

Recommendations

1. Each combatant command should establish a Strategic Communication and Response Element to prepare for and respond to propaganda, misinformation, and disinformation. The Multi-National Force–Iraq SC section is supposed to integrate, coordinate, and synchronize information efforts, acknowledging different audiences as well as different missions. However, the mandate is for coordination and not overstepping bounds while contributing to the achievement of the same objectives.

2. Each combatant command should establish a standing Interagency Information Coordinating Committee consisting of the J2, J3, J5, counterterrorism, and information operations (IO) planner, political advisor, special advisor, PA officer, deployed joint task force representative, legal counsel, and, when appropriate, Embassy public affairs, political officer, station chief, joint psychological operations task force, allied representatives, and regional U.S. Agency for International Development representatives.

3. If there is SC policy guidance, use it. If not, ask for it. In many cases, summaries of conclusions from policy deliberations have been disseminated but not further distributed to the lowest level necessary and laterally among all the players who are either affected or who have the capacity to influence foreign audiences. Draft needed guidance. Consider asking specific questions as a means to influence the policy process. Combatant commanders are far more influential in focusing interagency attention than staffs. Requests for policy/SC guidance should be in writing. Recommend "Personal for" messages or memoranda.

4. Intelligence divisions should approach SC requests for information differently in support of a continuous requirement for an "influence campaign." Include preclearance for declassification of prestrike intelligence supporting the target rationale, cockpit video, other aspect imagery, attack details, and other relevant, explanatory, and "defensible" information—all within existing authorities of the commander. When considering the influence objective and strategic and operational influence effects, apply intelligence gain/loss considerations, but beware of letting the tactical needs of the moment outweigh the long-term strategic need for success in the influence effort.

5. Each combatant command should immediately build a media "order of battle" for its area of operations, encompassing both "adversary" and "neutral/friendly" media. This should be an essential part of the intelligence preparation of the operational environment. DOD has several systems, albeit not yet fully funded, that could significantly enhance strategic, operational, and tactical information management. Combatant commanders should demand immediate funding to facilitate the earliest possible deployment of these systems to commands, forward headquarters, and joint task forces. These include

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each combatant command should develop appropriate external information requests that identify the interagency requirements

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Media Mapper, the Information Strategy Decision Support System, OpenSource.gov, and MAPS. Currency must be maintained on each country's indigenous media as well as external media that reach the populace. Data must include frequencies, broadcast times, key communicators, caricatures in newspapers, and so forth. Commanders should ensure that their staffs track what has been reported, when, and by whom to catalogue egregious broadcasts that incite violence.

6. Combatant commands should maintain and catalogue data on the popular culture of the countries in their respective areas of responsibility. The Strategic Studies Detachments of the 4th Psychological Operations Group, assisted by the Defense Intelligence Agency Human Factors personnel

Reaching a country's youth through popular culture is a way to influence future decisionmakers

U.S. Navy (Paul Seeber)

and including analytical outreach to Defense attachés, are key sources of this information. These data are critical to identifying the conduits, form, and medium through which to convey a particular message or theme in order to reach those whose attitudes remain vulnerable to "shaping" the youth. That is not to say that we ignore civilian elites, other policymakers, academics, or senior military leaders; it is only to emphasize the importance of reaching those who will be in positions of power and influence in the future, and whom we have a chance to affect now through longer term interagency efforts. We often focus on the decisionmakers of today while forgetting those of tomorrow. We only need to look at the population by ages worldwide to know that the youth cannot be ignored—and we only need to read the newspapers to understand why.

7. Each combatant command should develop appropriate external information requests (EIRs) that identify the interagency requirements/desires of the commanders to support their respective informational efforts in theater, including peacetime activities, transnational threats, and existing OPLANs/CONPLANs. These would be forwarded to both the Chairman of the Joint Chiefs and Secretary of Defense for insertion into the National Security Council (NSC) process. For standard OPLANs and CONPLANs, they would be included in Annex Ys and submitted to the NSC for review and coordination. EIRs would also

include combatant commander–desired U.S. Government interlocutors, regional experts (Arab-Americans, for example), and internationally recognized figures to "fill the information void" on regional media that is all too often exploited by our adversaries, resulting in their getting their message out aggressively and our being reactive.

8. For command post exercises and simulations, strategic communication, operational, and tactical information operations must be incorporated to identify strengths as well as weaknesses and the degree to which allied/coalition participation and contribution are possible. Full-spectrum SC simulations need to be conducted to coordinate, integrate, and synergize activities during deterrence, conflict, and postconflict phases, as well as to identify resource shortfalls. In addition, combatant commanders need to improve simulations so that they incorporate effects/reactions as a result of the information efforts as well as to ensure simulations include a realistic number of events for the process to be exercised.

9. Each combatant command should issue IO effects synchronization guidance, coordinated with the PA guidance, and disseminated during the information coordinating committee meetings described above. Involve military PA in each step of the process, resulting in guidance in line with the overarching approach and nested in the public communications guidance given U.S. Embassies and missions. Active rather than passive guidance is needed in most cases, tapping into known and predicted foreign journalist interest.

10. As critical contributions to addressing the ever-increasing number of jihadist Web sites that provide "inciteful" language and recruitment enticements, combatant commands should develop Web initiatives in accordance with DOD guidelines that assist in achievement of theater and national informational objectives. All of the elements of information operations, including computer network and operations and psychological operations (PSYOP), need to be integrated in this effort. Two useful examples/models might be the *Southeast European Times*, produced by U.S. European Command (USEUCOM), and Magharebia.com, originally created at USEUCOM and now operated by U.S. Africa Command.

11. For select operations, rehearse contingency options with the Department of State and the interagency community, channeled through agencies to the Deputy National Security Advisor for Communications to ensure consistency and coordination with national-level guidance. Determine what effects are needed based on a range of possible outcomes, and reach agreement on talking points, language, timing, communicators, means of dissemination, and feedback conduits.

12. Within each combatant command, and via J7, modify the JOPES process and make concomitant doctrinal changes to include the appropriate responses in the influence realm, creating a more comprehensive approach beyond the kinetic effects of an attack. Historically, we have concentrated our efforts on the planning and operational phase and on effects regarding the target only. In our current approach, we "own" everything up through the strike, and the adversary (and his media support) "owns" everything past the strike. We need to reverse this trend. Most targeting work/matrices only go until the bomb is dropped. We need to extend that matrix to deal with post-action effects. This will allow us to be proactive instead of reactive. Talking points must be "loaded" and "dropped" in synch with the bomb.

13. Be prepared to follow and sometimes precede kinetic strikes with "influence strikes." Using precleared information that supports our position, we must demonstrate combat power within the constraints of rules of engagement to achieve objectives within the context of the overall mission and strategic goals. If we are on offense, the adversary is on defense.

14. Greatly expand our use of imagery to support our rhetoric. This requires pervasive use/augmentation of Joint Combat Camera, PSYOP electronic news gathering capacity, possible addition/activation of Reserve Component PA, or other photographic expertise. Ensure sufficient systems are available to uplink/downlink both still photos and video for cataloging and selective use in disseminating to desired foreign and domestic audiences. Ensure and budget for satellite time to ensure transmission. This was a major deficiency during Operation *Iraqi Freedom*, despite recognition of the problem during *Enduring Freedom* and extensive coordination with Joint Combat Camera, their preparedness,

just as in sports, nobody cares about second; the images that come in second will not get play time

and their recognition of the public diplomacy importance of the images only they could "capture." Rapid release of the images to the open source world is key. Delays in releasing these images hurt us. We have to be first. Just as in sports, nobody cares about second; the images that come in second will not get play time, no matter how accurate. Consideration

General Raymond T. Odierno, USA, commander, Multi-National Force–Iraq, briefs press at Pentagon

DOD (R.D. Ward)

Strategic communication director for Combined Joint Task Force–Horn of Africa speaks during dedication of clinic in Tanga, Tanzania

might be given to attempting, in advance, to get copyright releases in case we do not get our own photographers/videographers to an incident scene before embedded press representatives do and there is a need to use other images on our products.

15. Consider, as U.S. Central Command did, embedding within DOD units (such as civil affairs, engineers, and medical) not only Western media, but also media such as Al Jazeera and Al Arabiyah and from across the global range of print, visual, broadcast, and Web-based media. This will provide not only a sounding board for the truth, but also the most credible sources for the global audience since local media and reportage are almost always seen as the most believable to any audience. Connect our "embeds" with information response teams, as well as the appropriate operations command center.

16. Arrive first on scene to an attack area with an information response team. If we know we are going to hit a significant target, deploy a Combat Camera team and some operators either prepositioned or ready (with dedicated helicopter transportation) to "scoop" adversarial media and preempt their stories. Get "before and after" pictures to prove we were monitoring a target (with consideration of operational risk) beforehand, and to avoid any disputes over the authenticity of the site and the environs.

17. Bring in the media, establish the facts, and show them sites where alleged attacks on civilian targets occurred. Have embeds ready to go just after sensitive site exploitation is done. If we feed these types of stories to Al Jazeera and Al Arabiyah, for example, or let others scoop them, this will push our side of the story to their audiences. Pushing information is critical, and historically we do not do it very well. An active PA posture is far preferable to remaining passive.

18. "Red team" the actions from an adversarial propaganda perspective. Identify and game likely scenarios and possible preemptive as well as responsive actions that might be appropriate. Because actions are the most important form of communication and always have more resonance, the spectrum should include PA, public diplomacy, IO, and special activities as well as military actions. Have a dedicated team of subject matter experts available and prepared to defend/explain actions in front of the press to identify inconsistencies or discrepancies in any adversarial disinformation that is disseminated that we should exploit/point out. As part of the risk assessment/mitigation of any significant operation, influence factors need consideration, with a preemption/reaction plan ready to execute from the proper communicators and through the appropriate channels. It is critical that we are hard on ourselves during this game

since we tend always to win, lulling ourselves into dangerous complacency.

19. Similar to combat operational debriefings for the media during times of "hot" war, ensure that we take the informational initiative in operations other than war/low-intensity conflict by doing the same, taking our information to television first and establishing the facts, thus preempting disinformation or propaganda that could be developed regarding an incident.

20. Use an organizational template (matrix) to coordinate actions and options. When guidance is sent out to action agents, it takes the form of whatever tool that agency or office uses to communicate. *Always* balance the need for proactive participation with operational security.

21. Combatant commanders should use the U.S. Special Operations Command joint mission support activity to plan, coordinate, and implement transregional PSYOP.

Implications

Although nation-states and political entities have exercised some of these principles and operations for centuries, the information environment—especially cyberspace—is a new concept. We are not well organized—strategically, bureaucratically, or procedurally—to operate effectively in this space, certainly not in comparison to recent and current adversaries. We have not dedicated sufficient resources—human, organizational, or fiscal—for success. Nor have we created the training and educational mechanisms within our primary strategic communication arms—the State and Defense Departments—to adequately prepare future strategic leaders to operate in this environment. We must see our international partners and allies as indispensable actors and treat them accordingly, involving them in the planning and conduct of critical influence operations and campaigns. The good news is that we have the ability to improve every one of these processes and capabilities. It is up to us—and the time to begin is now. **JFQ**

Energy

and Environmental Insecurity

By RICHARD B. ANDRES

Flame at oil refinery in Bayji, Iraq, burns 24 hours a day

Energy security is now a commanding priority. The emerging energy system is far more complex and global than the industrial era system it is slowly replacing. Today, when security planners talk about energy security, they are as likely referring to carbon emissions as to energy self-reliance and affordable oil. Moreover, the solutions that the international system has employed for over a century to secure its access to energy are becoming decreasingly effective. This article examines critical issues surrounding energy in the evolving security environment.

Emerging System

Energy has become one of the most pressing problems in national and global security. Over the last decade, significant increases in the price of oil have weakened the global economy, contributed to a sharp rise in global food prices, and transferred trillions of dollars to autocratic oil-exporting regimes. (Even in the midst of the current recession, oil costs around twice as much—in inflation-adjusted

dollars—as its historic median price.[1]) Almost as harmful as the high price of oil, the rapid fluctuations in its price—from around $25 per barrel in 2001 to almost $150 in 2008—have discouraged investment in energy technology and infrastructure solutions such as new sources of renewable energy, ensuring that global markets will not be prepared for the next cycle of high prices.[2] Internationally, energy diplomacy has become increasingly confrontational as states jockey for control of gas and oil markets and pipelines. Meanwhile, concerns about pollution and greenhouse gases have strained diplomatic relations with other nations and are forcing fundamental changes in energy policy.[3]

The emerging crises described above are symptoms of a gradual transformation in the underlying geopolitical and economic system that has supplied the world with cheap energy for over a century. Since the 1800s, cheap

fossil fuels have powered the rise of industrialization and globalization. During this period, free-market mechanisms ensured that world markets had access to petroleum and other sources of energy. This system relied on competition to drive the price of energy commodities toward the price of extraction and depended on a liberal trading order in which governments generally left energy transportation, supply, and demand to the market.[4]

Over the life of the energy market, the fundamental threat to cheap and reliable energy commodities has been that government intervention in the supply, transport, and demand for energy would transform the global distribution system from one adjudicated mainly by markets to one based on politics and force. Threats to the market-based system have always been possible. States with diplomatic or military influence on the global lines of communication by

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which energy is transported have frequently been tempted to further their interests by charging rents for access. Supplying states have regularly attempted to band together to increase market prices.[5] At least since the 1970s, environmental groups have put pressure on governments in rich states to look beyond the market and consider externalities when setting energy policy.

Despite these pressures, until recently the world has generally maintained a global free-market energy economy in which the prices of energy commodities have hovered around the cost of extraction and the supply has been dependable.[6] Historically, this system has rested on three pillars:

■ reliance on freedom of the seas for most international energy trade

■ multiplicity of energy-exporting nations and multinational corporations that made collusion and nationalization difficult

■ preference given by oil-importing nations to energy supply and price over considerations such as the environment.

Each of these pillars, and hence the basic energy system, is increasingly uncertain.

states with diplomatic or military influence on the global lines of communication have frequently been tempted to further their interests by charging rents for access

parochial reasons. During the World Wars, Cold War, and Iran-Iraq war, belligerents used diplomatic and military power to interdict opponents' energy supplies. However, because most global energy commodities traveled by sea, and because Great Britain and the United States were dominant sea powers, their opponents' efforts were generally frustrated in war and free-market distribution mechanics persisted in times of peace.

In recent years, however, a number of events have begun to undermine freedom of energy transportation. Over the last two decades, natural gas has become an increasingly important part of Europe's energy economy, and Russia and Central Asian states have begun to supply a large portion of that resource. Unlike petroleum exports, which mainly travel across oceans to final

U.S. Navy (Andre McIntyre)

Exercise Sector Guardian assesses Iraqi navy ability to defend oil platform in Persian Gulf

Insecure Energy Lines of Communication

Unimpeded transportation of energy has never been assured. Throughout the history of the modern energy market, states have attempted to influence transit routes for

buyers, natural gas must generally travel by pipelines through sovereign territory. The main geopolitical implications of overland transport are that the United States cannot use its maritime power to secure energy sea lines of communication and that Russia can

use its geographic proximity to and influence on Central Asian and Eastern European states to seek economic and diplomatic rents from natural gas exports.

Russia has routinely made use of its influence over energy supply routes. In January 2006, Moscow flexed its muscles by cutting off natural gas exports to Ukraine and did the same in 2007 to Georgia and Belarus.[7] After Russia's intervention into Georgia in 2008, Russian leaders made it clear that opposition to Moscow could affect natural gas supplies.[8] Russia's energy realpolitik has been effective. Major European states have regularly recoiled in the face of threats to their energy lifeline. Meanwhile, America's support for the free transport of gas in Central Asia and Eastern Europe has put it at odds with Russia.[9]

Supply lines have also become less secure in the Persian Gulf's narrow Strait of Hormuz through which 40 percent of global oil exports flow. As Iran amasses modern antiair and antiship missiles and enhances its capacity for harassing tanker shipping, the United States assumes a riskier and costlier burden as guarantor of the freedom of the seas.[10] In the longer term, China's growing dependence on Middle Eastern oil may heighten Beijing's concern about U.S. control of the sea lines of communication. These concerns have led it to expand its influence along the routes connecting the Arabian Gulf, Indian Ocean, Strait of Malacca, and South China Sea through a network of treaties, access to ports and airfields, and modernized military capabilities.[11] If global petroleum demand continues to outpace supplies, the temptation for regional powers to seek diplomatic and financial rents by controlling sea lines and chokepoints is likely to increase.

From Free Market to Oligopoly

For more than a century, global energy supply has been dominated by international corporations competing to find and extract energy resources for profit. The result has been that known reserves have expanded faster than demand, and prices have usually remained low. Petroleum, in particular, has averaged around $20 per barrel in inflation-adjusted dollars for nearly a century.[12] While energy-exporting nations have attempted to coordinate their export policies to reduce supplies and increase prices, the large number of exporting states and the critical role inter-

national corporations have played in providing technology and expertise have usually frustrated cartels.

The longstanding dynamics of the global energy market are changing. Known oil and gas reserves have become increasingly consolidated in the hands of a small clique of often politically unstable states.[13] In four of the top eight reserve-holding nations—Iran, Iraq, Nigeria, and Venezuela—a combination of international sanctions, war, civil disorder, and corruption has reduced energy exploration and extraction below market expectations, diminishing supply and

known oil and gas reserves have become increasingly consolidated in the hands of a small clique of often politically unstable states

increasing prices.[14] Over the same period, as extraction technology has spread from private companies to states, exporting countries have regularly nationalized their reserves and seized multinational oil and gas companies doing business within their territory.[15] Whereas most reserves and nearly all major energy companies were once private, around 90 percent of all reserves are now under state control and a progressively larger number of oil and gas companies are partly or wholly owned by exporting governments.[16]

As this has happened, major importing powers have become keen to influence

U.S. Navy (Nathan Schaeffer)
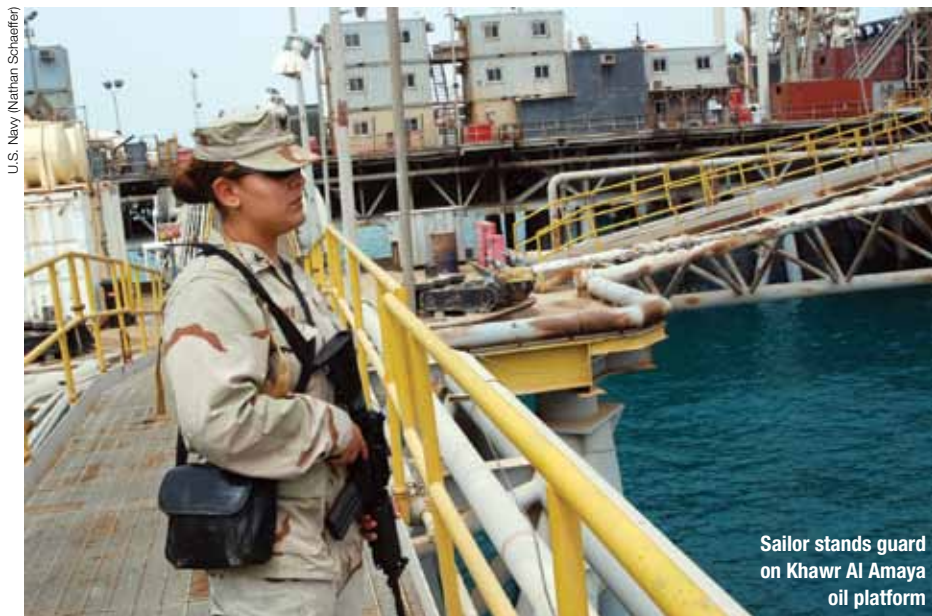
Sailor stands guard on Khawr Al Amaya oil platform

supplying nations through diplomatic and military instruments of state power. The system that allocates energy internationally has become more mercantilist. China has vigorously attempted to use its newfound financial muscle to bring autocratic African and Central Asian oil-exporting regimes within its sphere of influence to bypass market mechanisms. Russian attempts to control the flow of energy in Central Asia and Eastern Europe have regularly escalated to energy blackmail and threat of force. Similarly, at least since the early 1990s, the United States has used various diplomatic tools, including military-to-military contacts, with regimes in Central Asia and the Middle East to increase their connections with the West.[17]

The net effect of these changes has been to reduce the amount of gas and oil on the international market—resulting in tight supplies—and to move the market toward oligopoly. The emerging system is less stable and less predictable than the older market-driven system. In the old system, the large number of competing energy-supplying states and companies dampened the effects of actions by particular suppliers and inhibited the ability of suppliers to coordinate policy. In the new system, market supply is increasingly dependent on the nuances and preferences of individual states. Recently, even apparently trivial political events in exporting nations have been enough to cause dramatic fluctuations in prices, and the United States has, on occasion, been reduced to cajoling Saudi Arabia and other major exporters to increase energy supplies to reduce market prices.[18] From the viewpoint of the emerging autocratic oil-exporting oligarchy, the system works. Before the current recession, it funneled trillions of dollars into their economies and increased their political power at home and diplomatic power abroad. According to most analyses, this situation will return when the recession ends. There is little reason to expect the current trend toward oligarchy to reverse itself or anticipate a return to the more competitive energy environment of the 20th century.

Diminishing Importance of Price

The third dynamic altering the current global energy market is the increasing importance of environmental concerns in determining importing states' energy policies. Whereas

U.S. Navy (Jason R. Zalasky)

German frigate *Mecklenburg-Vorpommern* sails Strait of Hormuz near USS *Vella Gulf*

energy policies in rich states were once determined mainly with an eye to reducing price, today price is becoming less important vis-à-vis fears of pollution and particularly of global warming.[19]

For several decades, the governments of rich countries have been under mounting pressure to modify energy policies to account for environmental factors. The success at influencing governments over the environment has varied across countries and time. But the contemporary era is particularly green, and the influence of environmental groups is growing rapidly. While clashes once mainly pitted naturalists against economic interests, as concerns about global climate change grow, the number and political influence of groups committed to environmental policies are expanding. Today, many governments and nongovernmental organizations are lobbying the United States for more eco-friendly policies, and U.S. energy policy has become a major point of diplomatic, as well as domestic, friction.

It is difficult to predict the effect of environmental concerns on energy markets. In general, environmentalists argue for higher prices on carbon-based fuels to reduce demand. However, environmental science is too young and lobbying too disparate to make prediction easy. In the United States, conflicting interests sometimes pit one environmental interest against another. For instance, lobbies aimed at reducing radioactive waste and preserving natural ecosystems currently restrict the construction of U.S. nuclear and hydroelectric plants. As a result, however, the country has relied on dirty, carbon-producing coal plants.

Also, some policies are self-defeating. To reduce greenhouse gases, the United States funds research on electric cars. However, since 50 percent of U.S. electricity is derived from coal, depending on a number of factors, electric cars can produce more carbon and other pollutants per mile than cars running on regular gasoline.[20] In addition, some policies have unintended consequences. Recent legislation that prevents government use of new fuels that emit more carbon across their life cycle than petroleum appeared relatively benign when low oil prices made North America's vast reserves of unconventional fossil fuels unprofitable to extract and refine. However, when high prices made these reserves profitable in 2008, the situation changed significantly.[21] In the meantime, environmentalists and energy suppliers both

hold out hope that new technology will eventually solve current problems.

Environmental concerns, and particularly global climate change, may prove to be this century's greatest security challenge. Whatever the eventual outcome, however, they are fundamentally changing the way the global system extracts, transports, and uses energy and are injecting uncertainty into global markets. As concerns over climate change increase with time and governments

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since 50 percent of U.S. electricity is derived from coal, electric cars can produce more pollutants per mile than cars running on regular gasoline

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search among myriad proposed solutions, the price and volatility of energy are likely to increase and incentives for privately funded research and infrastructure development are likely to be adversely affected.

As the global energy economy transitions toward a more statist and mercantilist system, policymakers are likely to find themselves operating in terra incognita. In the old system, private companies absorbed most of the risk; in the emerging system, states will bear a larger portion of the risk as they pioneer new policies. Many of the policies that will set the tenor for the next century will be developed and implemented in the next decade. Global leadership is needed, and difficult national choices will have to be made. The world is changing and the dynamics that facilitated a world powered by cheap fossil fuels are diminishing. Leaders face the question of whether they can overcome inertia and adapt with it. **JFQ**

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Measure, Manage, Win

Sailor tests samples in fuel analysis laboratory aboard USS *John C. Stennis*

U.S. Navy (Kenneth Abbate)

Air conditioning installed in uninsulated tents is major source of energy waste

U.S. Navy (Wendy Wyman)

THE CASE FOR OPERATIONAL ENERGY METRICS

By ANDREW BOCHMAN

Today, the Department of Defense (DOD) is beset by budgetary problems, hampered by worn-out equipment, faced with sky-rocketing personnel costs, and spread thin in short- and long-term obligations that span the globe. One business process change that will improve force effectiveness, reduce mission risk resulting from high fuel and logistics demand, and, by fortunate coincidence, help mend budgets is implementation of energy metrics for operational systems.

Fuel efficiency has not been fully incorporated into the design of DOD warfighting systems. In fact, efficiency is seldom seriously considered because all legacy systems were required, designed, and procured on the assumption that fuel logistics was free and invulnerable, so saved fuel was valued at typically one or two orders of magnitude below its true cost delivered to the platform in theater in wartime. Nor do DOD wargames normally "play fuel"; required fuel is assumed to appear automatically when and where it

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Airman pulls hose to refuel E–3 Sentry in Southwest Asia

U.S. Air Force (Brian J. Ellis)

is needed. Equally apparent, unless change comes quickly, ensuing generations of systems will be fielded with equal or greater energy appetites.

Although DOD naturally focuses on *effectiveness* over efficiency, it is seemingly unaware that the two attributes are not mutually exclusive. For instance, inefficient platforms require fat logistic tails that incur huge costs (in both blood and treasure), tie up whole divisions hauling and guarding fuel, and create attractive targets for our adversaries. Especially now, in the shadow of $150-per-barrel oil and in the middle of a deep fiscal crisis, it is long past time for a change. DOD has shown that it can measure and manage energy requirements on the facilities side; now it is time to do the same with operational systems.

One of the fastest ways to reduce operational fuel demand and gain substantial strategic, operational, and tactical benefits is through the expedited implementation of energy frameworks and metrics mandated in the National Defense Authorization Act (NDAA) of 2009. When fuel efficiency is factored into the design, procurement, and fielding of all DOD systems, the cumulative effects will reduce logistics tails that slow operations, limit maneuver and deployability, tie up force structure in combat support, keep too many Soldiers in force protection mode, and expose Servicemembers to serious and unnecessary risks. In addition, reducing fuel use and fuel logistics will result in smaller DOD budgets

that are less vulnerable to fluctuations in the global price of fossil fuels. The primary metrics encompass the inclusion of energy efficiency as a key performance parameter (KPP) in the acquisition process and the use

according to OSD, oil price volatility and the sheer amount required to run the modern military are causing big problems

of the fully burdened cost of fuel (FBCF) to determine baseline and continuing costs so that saved fuel is more highly valued in the trade space.

DOD Undervalues Fuel

Out of all the challenges that DOD faces, one condition is chronic and will only get worse if changes are not made fast: the DOD appetite for fuel. In 2006 and 2007, the Department spent $26 billion per year on energy, and in 2008 requested an additional $5 billion on top to offset higher prices. Each $10 per barrel price increase in oil costs DOD over $1.3 billion per year.[1] As cited by the Office of the Secretary of Defense (OSD), those baseline energy expenditures are just the beginning. One presentation says, "Fiscal and operational costs from DOD's fuel demand are orders of magnitude bigger than we appreciate."

The commodity price of oil is comparatively low today, but its recent climb to $150 per barrel put everyone on alert and elevated energy security to the fore of the Presidential campaign. Prices that high were alarming, but from a planning and budgeting perspective, the volatility has been even more problematic. According to OSD, oil price volatility and the sheer amount required to run the modern military are causing big problems:

■ 70 percent of the tonnage moved when the Army deploys is fuel and water[2]
■ about half of current casualties in theater are associated with convoys[3]
■ logistics consumes roughly half of DOD personnel and a third of its budget.[4]

Energy advocates inside and outside the DOD community are well aware of these problems with valuing fuel. Some of the organizations that have contributed recommendations over the last decade include OSD, Center for New American Studies, Center for Strategic and International Studies, Center for Naval Analyses, American Enterprise Institute, Rocky Mountain Institute, two Defense Science Board (DSB) Energy Task Force teams that released encyclopedic reports in 2001 and 2008, and the Government Accountability Office (GAO). In one of its latest reports on this matter, GAO reports that it "found that DOD has made limited progress in incorporating fuel efficiency as a consideration in key business processes—which include developing

requirements for and acquiring new weapons systems."[5] The same report notes the missed opportunities inherent in considering procurement of energy efficiency capabilities in forward operating locations:

Given DOD's high fuel demand for base support activities at its forward-deployed locations, without guidance in place to incorporate energy efficiency considerations into procurement decisions when practical, DOD may be missing opportunities to make significant reductions in demand without affecting operational capabilities.[6]

In short, there seems to be little top-down institutional interest in reducing the billions spent annually on energy and the tens of billions spent to deliver it. But there are a handful of initiatives in the Services that indicate a bottom-up movement toward embracing energy efficiency metrics. Some are moving faster than others, albeit 8 years after initial recommendations were issued by the first DSB task force. Following is a summary of recently announced energy policy from the Service components. The focus remains overwhelmingly on facilities energy; there continues to be a great deal of reluctance to look operational energy challenges square in the eye.

Navy/Marines. It appears that the Navy—unlike OSD, the Air Force, and the Army, all of which have had Senior Executive Service (SES)–level personnel working facilities energy issues for some time—has only recently appointed an SES energy lead who reports to the Secretary of the Navy. The Navy has had success in annually reducing its facilities energy consumption, but its Incentivized Energy Conservation and Fleet Readiness, Research, and Development programs appear to be making fuel reduction headway. A Navy Energy Coordination Office has formed to guide further progress on installations and oversee the operational energy side as well.

Air Force. The *United States Air Force Infrastructure Energy Strategic Plan 2008*, covering buildings, ground vehicle fleets, and renewables, is the most thorough roadmap

for military facilities energy managers yet produced. On the operational side, the plan reports that pilots and Airmen now remove every superfluous pound from inside the planes (savings recently identified in four heavy aircraft types have a present value of billions of dollars), and pilots do more simulator work and fly with smaller fuel loads. However, despite claims to the contrary from leadership, it appears that there is little emphasis on calibrating energy-related investments to weigh the risk of mission disruption. The omission is clear when there is almost no mention of the FBCF or a KPP related to energy.

Army. The Army, which is having success with energy demand reduction at its fixed facilities, is also working to reduce demand from weapons systems, tactical vehicles, and power generators. In January 2009, Army Acquisition Executive Dean Popps signed an important new Army energy document, whose distribution list includes every Army senior leader in every significant unit around the globe. And it is not just the reach

of the address list that is important; it is what the memo directs: "All new Army acquisition programs, to include new program starts and new increments, with end items that consume energy shall include the fully burdened cost of energy needed to operate the system in their total ownership cost analysis."[7]

Poised for Progress . . . or Simply Stalling?

As indicated above, the Services have focused on installation power costs, and not on reducing demand in the operational force. This first inkling of a change came with a request by General Richard Zilmer, USMC, from the field in 2006 for a less oil-dependent military, but overall DOD is just now getting some appreciation for the military capability angle.

Across DOD, the real potential for embracing energy metrics has little to do with saving money and everything to do with saving lives and maximizing chances for mission success. A handful of commanders in the field, noting fuel convoys' enormous

According to DOD, generators are the single largest battlefield fuel consumer

drain on resources, have demanded change from business as usual. The Power Surety Task Force, partially created in response to a request by General James Mattis, USMC, from Iraq to "unleash us from the tether of fuel," is one example of a new understanding of what it takes to manage energy demand to improve chances for tactical success.[8]

Earlier this year, Congress attempted to shine some light on one aspect of operational energy problems facing DOD in a House Armed Services Committee's Readiness Subcommittee hearing on fuel demand management at forward-deployed locations and operational energy initiatives. Indeed, OSD and other DOD energy policy organizations now acknowledge that "DOD planning processes undervalue fuel and its delivery costs,"[9] yet it also appears that few senior DOD leaders are aware of the problem, much less trying to change it.

Apart from demonstrated success with facilities energy reduction, DOD finds itself having made little progress on operational energy strategy or governance structure. The repeated findings of the DSB task force reinforce the impression of inaction. In short, the 2008 report revealed that the most emphatic recommendations of the 2001 report were ignored. There have been several additional indicators of a lack of progress in 2009:

■ No central energy security strategy has been articulated.

■ Energy risks, and the understanding of vulnerabilities caused by our operational reliance on fuel delivery, have not been mainstreamed.

■ Recommended fuel use and energy efficiency metrics have a long way to go before implementation in the Planning, Programming, Budgeting, and Execution System (PPBES).

■ The Defense Authorization Act 2009, also known as the Duncan Hunter Act (HR 5658), requires that analyses and force planning processes consider the requirements for, and vulnerability of, fuel logistics. It also created a new Director of Energy Operations Plans and Programs position and directs that fuel use and energy efficiency metrics will be implemented in the PPBES. This position remains unfilled at this writing.

These indicators show that even at this late date, senior DOD leaders are not taking energy measurement and metrics seriously.

Operational Energy Metrics Are Ready

While progress has been made using millions of British thermal units (MBTUs) per square foot to track energy demand reduction and efficiency gains on fixed installations, operational systems have proven resistant to having energy inputs quantified via metrics. For instance, if delivered energy is always assumed, there is no reason to measure it. Iraq and Afghanistan should have taught us that DOD has some bad assumptions. Moreover, operational energy metrics are a tougher nut to crack as the use cases are an order of magnitude more varied than in garrison energy use scenarios.

The two metrics that have yet to play a significant role in DOD thinking are the FBCF and a KPP related to energy efficiency. First proposed in 2001, it took several more years for both to become accepted in DOD guidance, and now in 2009 they are finally being studied for initial use.

The Fully Burdened Cost of Fuel. The FBCF was formally codified last year in NDAA 2009 and DOD Instruction 5000.02. The *fully burdened* cost of energy is defined in the NDAA as "the commodity price for fuel plus the total cost of all personnel and assets required to move and, when necessary, protect the fuel from the point at which the fuel is received from the commercial supplier to the point of use."[10] In theater, this often includes expensive force protection assets and, as has been documented, can drive the delivered cost of a gallon of diesel or J–P8 from a base cost of $2 or $4 to tens or hundreds of dollars. Impossible to measure is the worth of the many Soldiers and Marines and U.S. contractors whose lives are lost while attempting to transport and/or protect fuel resources, and the opportunity cost of their diverted combat capability.

In "The Peculiar Economics of Energy in Defense Operations," Michael Canes cites the 2001 DSB report and suggests the power of the FBCF approach:

The 2001 DSB study made no formal estimates of what it termed the "true cost" of fuel, but stated that Army sources had estimated that it costs $13/gallon merely to deliver fuel to a foreign theater, and much more to deliver it from its landing point to the front lines. In one example, using helicopters to fly bladders filled with fuel to troops several hundred kilometers inland, the fully burdened cost of fuel was estimated to be as much as $400 per gallon.[11]

Almost half of in-theater casualties are associated with convoys, such as this one delivering fuel to airfield in Iraq

U.S. Marine Corps (Kelly R. Chase)

Logistics costs drive up energy costs and are tightly correlated to the type of environment into which fuel is being delivered. Pentagon planners are not paying attention if they think the JP–8 and diesel used in theater cost anything similar to high-grade gasoline at the local Sunoco. But the fuel value assumed when their existing platforms were required and designed is in fact less than that—based simply on the wholesale cost of fuel that is neither delivered nor protected.

Energy Efficiency KPP. According to DOD, a *KPP* is "an attribute or characteristic of a system that is considered critical or essential to the development of an effective military capability."[12] Stated simply, KPPs allow people generating requirements in a systems definition process to quantify their descriptions of the most important characteristics of a given system, based on the scenarios in which it is being designed to operate. KPPs allow series

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impossible to measure is the worth of the lives lost attempting to transport and/or protect fuel resources

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of measured tradeoffs, with some typical KPPs being speed, survivability, stealth, and sustainability. Energy efficiency, or the value of reducing demand for fuel logistics in operations, has never been a consideration. Total cost of ownership can include fuel costs, and for aircraft, range and payload KPPs factor in fuel use, but these estimates currently ignore the support "tail" costs that it takes to make these systems functional. The energy efficiency KPP is called out for "selective implementation" in new procurement guidance from the Chairman of the Joint Chiefs of Staff Instruction 3170.01F.[13] To date, it has not been applied to any program.

One way of understanding the relationship between these two metrics is that the energy efficiency KPP is monetized via FBCF. Today, the only drivers are schedule, performance, and non-energy costs, and program managers have no tool to measure energy factors. The same holds true for personnel in the field trying to measure (and report on) the effectiveness of all systems creating a fuel demand. A February 2009 GAO report on energy demand management revealed what was a surprise to some: "While weapon platforms require large amounts of fuel, DOD reports that the single largest battlefield fuel

Marine refuels M1A1 Abrams main battle tank at Twentynine Palms

U.S. Marine Corps (Kelsey J. Green)

consumer is generators, which provide power for base support activities such as cooling, heating, and lighting."[14] Indeed, one-third of the Army's wartime fuel use is for fossil fuel–powered generators to make electricity that is largely wasted: in a typical forward operating base, about 95 percent of the electricity is inefficiently used to cool desert tents that until recently were uninsulated (now about half have been urgently sprayed with insulating foam, with the other half in process).

At present, it is difficult to set energy efficiency or energy productivity baselines that work across different programs or organizations. Should a new ground vehicle trade armor for acceleration, or should DOD pay more for the lighter but better armor, or reduce both for greater range or resilience, all the while seeking to trim the logistics tail wherever possible? A new unmanned aerial vehicle or manned fighter or bomber can leverage additional fuel efficiency for extended range, heavier payloads, or loiter time, or to reduce logistics costs. The 2008 DSB report even identified a prototype

replacement for up-armored Humvees that offers severalfold gains in fuel efficiency, weight, and acceleration with greater lethality and greatly improved stability and protection—yet at comparable cost using integrative design and novel ultralight armor to reverse the normal assumption that efficiency increases costs.[15] Indeed, civilian land, sea, and air platforms have already disproven that assumption, including Boeing's civilian 787 Dreamliner, which saves a fifth of its fuel at no extra cost.

More broadly, when fuel efficiency factors into all of the systems designed, procured, and fielded, the cumulative effects will reveal:

■ reduced logistics tails that slow operations, limit maneuver and deployability, tie up force structure in combat support, and keep too many Soldiers in force protection mode when they could be taking the battle to the enemy

■ when more energy efficient solutions are sought, entire systems can become better

designed to accomplish the original task (for example, with a more fuel-efficient engine, the space savings from the smaller fuel tank may allow a redesign of other parts of the vehicle and perhaps the entire power train to add even more efficiency traits)

■ a smaller and more predictable DOD budget, less reliant on supplemental funding requests to Congress, and much less vulnerable to fluctuations in the global price of fossil fuels.

In sum, the FBCF and energy efficiency KPP would not turn DOD upside down; they are simply a means to give energy a seat at the table in all the discussions that can affect budget, capabilities, force structure, and mission effectiveness.

Reconnaissance, Surveillance, and Targeting Vehicle is joint project to demonstrate potential of hybrid electric drive technology

Recommendations

The energy efficiency KPP will help program managers and others make better informed decisions. The 2008 GAO report on mobility energy showed the way based on energy lessons learned and gains already achieved at Defense facilities:

DOD has created a management framework to oversee facility energy, which accounts for about 25 percent of the department's energy use. . . . The establishment of such a framework for mobility energy could provide greater assurance that DOD's efforts to reduce its reliance on petroleum-based fuel will succeed without degrading its operational capabilities and that DOD is better positioned to address future mobility energy challenges—both within the department and as a stakeholder in national energy security dialogues.[16]

Factor Energy Efficiency into All New Systems. Depending on the type of system, improvements to energy efficiency will not always be practical or possible. But because procurements, even the most recent ones, have yet to include a KPP for energy efficiency or energy productivity, DOD must ensure that the next wave of systems is scored and selected with input from the energy efficiency KPP. Systems defined today are fielded 10-plus years from now and in some cases remain online 50 years later. The F–22, our current frontline air superiority fighter, was designed 25 years ago.

Give People Needed Tools. At present, program managers, including commanders and managers, have no tools to measure energy efficiency gains and losses, no tools to ensure

guidance is provided to help them incorporate energy efficiency targets in their objectives, and no tools to communicate status using terms familiar to all. As noted earlier, facilities campaigns are maturing, with MBTUs per square foot as the common currency used to manage and measure energy progress with buildings.

DOD must ensure that the next wave of systems is scored and selected with input from the energy efficiency KPP

Absent the FBCF and energy efficiency KPP and more granular metrics derived from them, leadership trying to manage the energy demands of operational systems simply will not be able to keep up. For example, future system development should consider how systems with varying energy demand require-

ments drive multiple variables, including force structure and acquisition. For force planning, the benefits immediately accrue when fuel efficiency metrics are employed by:

■ building fuel delivery, protection, and vulnerability risks into campaign plans

■ setting targets for reducing fuel delivery burden within force plans

■ limiting operational fuel demand to improve capability and reduce mission risk and frame the efficiency/effectiveness trades accurately.

Acquisition activities can also benefit from the incorporation of FBCF and energy or energy efficiency KPPs. For example, DOD would be able to base technology investment business cases on the FBCF and operational areas where energy delivery will be contested; incentivize suppliers to offer the most efficient solutions; and award contracts to buy the most efficient solutions, especially in cases where other scores indicate rough parity.

To achieve these benefits, energy metrics–based policy will have to be codified at the acquisition guide book level, and program managers and other acquisition officials will need to be trained in how to work with these new energy metrics and measurement techniques. This will require significant changes. But given the energy security challenges we now face, the changes would be well worth the pain—and there is no time to lose.

Use Energy Metrics to Enable Questions Never Asked Before. A fully implemented DOD energy security strategy with appropriate policy and metrics will allow DOD, for the first time, to answer questions such as these when defining a new system:

■ How does this technology specifically influence operational effectiveness and force structure?

■ How will it reduce convoy footprints?

■ How will it require less logistics mass?

■ How will it free up force protection assets so they can be applied to other activities?

■ What are the energy impacts of the 2025 force being designed today?

According to OSD and others, fuel savings bring enormous benefits to DOD:

■ major warfighting, logistic, and budget benefits

the election of a President with a strong energy security orientation and his creation of an energy-aware National Security Council have laid the groundwork for rapid change

■ far fewer convoys at risk of attack

■ elimination of the deadly distraction of protecting fuel

■ unprecedented persistence (dwell), agility, mobility, maneuver, range, reliability, and autonomy—at low cost, so many small units can cover large areas—needed for asymmetrical, dispersed, elusive, remote, and irregular adversaries

■ vast transformational gains.

Crawl, Walk, Run, Win. Once the first steps toward implementing the FBCF and the energy efficiency KPP have been taken, DOD should follow the lead of the true visionary in this field, Amory Lovins, who was an active member of both DSB task forces. Lovins calls for two new "vectors" that subsume and extend energy efficiency not to merely mitigate current energy-reliance weaknesses, but to gain a substantial competitive edge on the battlefield. According to Lovins, two missing strategic vectors could turn energy threats into decisive advantages:

■ *Resilience* combines efficient energy use with more diverse, dispersed, renewable supply—turning big energy supply failures (by accident or malice) from inevitable to near-impossible.

■ *Endurance* turns radically improved energy efficiency and autonomous supply into many-fold greater range and dwell—hence affordable dominance, requiring little or no fuel logistics, in persistent, dispersed, and remote operations, while enhancing overmatch in more traditional operations.

These two new vectors are as urgent, vital, and fundamental as speed, stealth, precision, and networking. Without them, exploitation of electricity and fuel vulnerability could soon come to the continental United States. But with them, DOD can gain far more effective forces and a safer world—generally at reduced budgetary cost and risk.[17]

The 2008 DSB report endorsed these two new strategic vectors, which would seem ripe for serious development in the 2010 QDR process. This should help to consolidate doctrine and focus DOD senior leadership on the opportunity to build and expand the decisive advantages of the four strategic vectors already driving the revolution in military affairs—speed, stealth, precision, and networking.

The election of a President with a strong energy security orientation and his creation of an energy-aware National Security Council have laid the groundwork for rapid change, should the DOD decide to adapt. Perhaps in a few years, we will catch a glimpse of a slimmer, healthier DOD thoroughly transformed to calibrate its actions with energy security risks and operational benefits in mind. So what would that look like? It is still far too early to tell, but Secretary of Defense Robert Gates' "balanced approach" gives us an idea of where to look for evidence of change:

In the end, the military capabilities needed cannot be separated from the cultural traits and the reward structure of the institutions the United States has: the signals sent by what gets funded, who gets promoted, what is taught in the academies and staff colleges, and how personnel are trained.[18]

We will know that DOD has truly reformed its approach to energy when rewards are given for energy-related improvements to operational systems at every stage in the life-cycle—when robust use of energy metrics is as much a given in system design, force structure planning, and wargaming as is gravity. **JFQ**

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An Interview with
Raymond T. Odierno

**GEN Odierno greets Defense Secretary
Gates upon his arrival in Iraq**

JFQ: *How important was the role of the Awakening/Sons of Iraq in the success of the surge? How do the Sons of Iraq fit into a united, multiethnic Iraq capable of standing on its own two feet?*

General Odierno: In 2006, the tactical-level reconciliation with former Sunni insurgents, known as the Awakening, made a huge difference in Anbar Province. Al Qaeda had clearly overplayed its hand with tribally focused Sunnis, creating a seam that our leaders could exploit. Seizing that opportunity, they also assumed risk by building cooperative relationships with Sunni leaders—many of whom had previously conducted attacks against U.S. forces—to reduce the violence. And it worked; it improved security. Later, the Sons of Iraq program was one of the multiple, simultaneous approaches that contributed to the overall success of the surge.

At the operational level, we set the right and left limits of the program and allowed tactical commanders across the battlespace to nurture local reconciliation. So while the Awakening movement began as a local rejection of al Qaeda, we were able to carefully shepherd this into a national, Iraqi-led reconciliation program. Today, the government of Iraq administers the Sons of Iraq program—with our oversight. It is part of their overall security architecture, and this past summer they began transitioning program members into other ministries. Granted, it took the Iraqi government some time to embrace this program, but it is now integral to the country's future. In fact, earlier this year as the government struggled with the effects of the downturn in oil prices on their national budget, the first program that the government fully funded and supported was the Sons of Iraq program. That says a lot.

JFQ: *On June 30, 2009, U.S. combat forces departed Iraqi cities. What are our forces doing now? What do you think this will do for our short-term and long-term progress in Iraq?*

General Odierno: On June 30, we turned over security responsibilities in the cities to the Iraqi Security Forces [ISF]—as outlined in our bilateral security agreement

that governs our military presence in Iraq through 2011. It was the right thing to do, and it happened at the right time. It has provided the ISF a psychological lift and has made clear our intent to abide by the agreement. Three years ago, we tried transitioning security responsibilities when the security situation was significantly worse, and the ISF simply were not ready. Since then, we have had an 80 percent reduction in security incidents, and through coalition partnership, training, mentoring, and advising, we have seen steady progress in ISF capabilities.

GEN Raymond T. Odierno, USA, Commander, Multi-National Force–Iraq

Although our combat forces have moved out of the cities, we still have small numbers of troops in the cities to train, advise, enable, and coordinate support for ISF operations. Outside the cities, our forces continue to conduct full-spectrum operations—by, with, and through the ISF. So regarding immediate security concerns, I think the June 30 milestone actually propelled us toward a more effective security posture. The ISF are fully responsible for the cities; this allows U.S. forces to reposition to the belts around the cities and on the borders. Operating in the belts allows us to disrupt logistics, training, and freedom of movement for insurgent elements, and our increased emphasis on the border will

impact the flow of illegal weapons, persons, and materiels. This is another step in recognizing Iraq's sovereignty and moving toward the government taking full responsibility for security.

Regarding long-term progress in Iraq, June 30 was a seminal event for the Iraqis. The psychological effect cannot be overstated as they fully embraced security responsibilities. They feel empowered and in control—and, again, they are ready for this task. Our visible movement out of the cities confirmed America's commitment to recognizing Iraqi sovereignty. In fact, I'd say that by abiding to our bilateral agreement, even in the tough areas such as Mosul, we took the wind out of the sails of many extremist and insurgent groups who have recruited based on false propaganda that America will not live up to its commitments. Overall, we assumed some tactical risk for strategic gains, and so far it is working out fairly well. I believe the calculated risks are worth the strategic gains of having a long-term, stable partner in the region.

JFQ: *How would you characterize the threat in Iraq today?*

General Odierno: The greatest threats to a stable, sovereign, and self-reliant Iraq are political drivers of instability. With security incidents down to levels last seen in 2003, we have helped set the conditions for the Iraqi political process to move forward. Iraqis are learning how to build alliances, generate consensus, and solve issues through dialogue and compromise. However, despite the significant progress, many underlying sources of conflict across Iraqi civil and political society have not yet been resolved—many issues take time. Iraq is a nascent democracy emerging from over 30 years of authoritarian rule based on ethno-sectarian privilege. Iraqis are still dealing with lingering ethno-sectarian histories, Arab-Kurd tensions, and violent extremist groups such as al Qaeda and other external actors who seek to exploit any fissures. The Iraqis are still determining the nature of their federal state and the balance of power between the central and provincial governments.

General Raymond T. Odierno, USA, is Commander, Multi-National Force–Iraq.

Until the Iraqis solve key issues such as the distribution of wealth and disputed internal boundaries, the government will remain vulnerable. We will continue to support the government and ISF in providing a stable and secure environment, allowing them space to develop political solutions. Across Iraq, I have asked all commanders—with their Provincial Reconstruction Team [PRT] leaders—to understand the root causes of instability in their areas of responsibility and work with local Iraqi leaders to mitigate them. With security as it is, in many cases our primary efforts are focused on assisting PRTs to help provincial governments provide essential services and economic opportunities for their citizens.

Having said this, I remain concerned that security is improving, but not yet enduring. Our sustained, combined pressure has degraded al Qaeda, but it is still capable of conducting isolated high-profile attacks—

JFQ: *You've talked about reconciliation and ISF development. Surveying the last six years in Iraq, what have been the three most significant developments affecting our mission and goals for Iraq?*

General Odierno: The self-perpetuating cycle of ethno-sectarian violence was one of the most significant developments. Frankly, we were slow to recognize the budding insurgency and were unable to deal effectively with many of the "accelerants" fueling spiraling reprisal attacks. When I returned to Iraq in 2006, General [George] Casey—the Multi-National Force–Iraq commander at the time—challenged me to find a new approach to reduce the violence. We knew we had to break the cycle of intimidation, coercion, and extortion—and we had to protect and regain the confidence of the Iraqi people. We implemented the "surge," which was much more than simply a surge of

The third most significant development is undoubtedly the signing of two historic bilateral agreements with the government of Iraq in December 2008. The security agreement now governs our military presence and cooperation through 2011. Recognizing Iraqi sovereignty, it establishes a new operating environment of complete transparency within the Iraqi rule of law. This has paid huge dividends for our partnership with the ISF, their continuing development, and for overall security. The ISF are increasingly assuming more and more responsibilities—including security in urban areas. Essentially, we are shifting away from security-centric operations to stability operations and a long-term bilateral relationship guided by the Strategic Framework Agreement. Most Iraqis are also shifting their attention to the Strategic Framework Agreement and the roadmap for our enduring strategic partnership. This clearly demonstrates our maturing relationship with Iraq.

GEN Odierno speaks with local leader of citizens group that provides security around city of Hawr Rajab

our sustained, combined pressure has degraded al Qaeda, but it is still capable of conducting isolated high-profile attacks—continuing its tactics of killing innocent civilians in order to try and prevent Iraq from moving forward peacefully

JFQ: *You mentioned shifting from security-centric operations to stability operations. With about 130,000 troops in Iraq today—the vast majority located outside of cities—how does support to the ISF work through the prism of counterinsurgency [COIN] doctrine? What about support to the civilian interagency efforts? Have there been any lessons learned?*

General Odierno: COIN involves a combination of offense, defense, and stability operations. Across Iraq, the emphasis on each may be different, depending on the established security conditions. I would actually say that across Iraq we are transitioning from COIN-focused operations to stability operations—and I consider this an extremely positive sign of our continued progress in Iraq. I mentioned earlier that—with the ISF responsible for security in the cities—U.S. forces are able to focus on the

continuing its tactics of killing innocent civilians in order to try and prevent Iraq from moving forward peacefully. There are also still Sunni-based insurgent groups and Shi'a militant groups conducting operations in Iraq, but we are beginning to see more and more of these groups interested in moving forward politically. Therefore, the government is experiencing some success reconciling with some of these groups and bringing them into the political process.

forces—it was a surge of new ideas and integrated approaches. I would say this change in mindset is the second most significant development. Our change of strategy and tactics focused on protecting the population and exploiting the positives of the Awakening movement, and applying constant pressure on extremist and insurgent networks to neutralize their influence and try to bring some of them into reconciliation talks with the government of Iraq.

belts surrounding the cities to eliminate extremist support zones and safe havens, as well as on the border regions to stop the flow of lethal aid. In all these operations, we operate by, with, and through our Iraqi partners in completely transparent operations. In many cases, the Iraqis are leading successful operations with our support—and subsequently gaining legitimacy in the eyes of the Iraqi people—a main objective for COIN operations.

Given the security gains to date in many areas, our Brigade Combat Teams [BCTs] are actually taking a supporting role, enabling both the ISF and our partnered State Department PRTs, which have proven absolutely essential in Iraq's development. One of our earlier challenges in Iraq was unity of effort through unified action. We have worked very hard to come together— the U.S. Embassy Baghdad, Multi-National Force–Iraq, the United Nations, and nongovernmental organizations. Together, we developed a Joint Campaign Plan [JCP] signed by the Ambassador and me. This is our base for synchronizing, coordinating, and integrating our activities—working toward our common goals of a stable, sovereign, self-reliant Iraq with a just, representative, and accountable government that contributes to the peace and security of the region. We established a process to regularly assess and update the JCP.

We have developed a scheme focused around Advisory and Assistance Brigades [AABs] that will ultimately replace our BCTs. Built around BCTs, AABs will be trained and provided enablers that focus them on stability operations and support to our interagency partners. The first AAB deployed was the 1st Brigade, 82d Airborne Division, in September 2009, and it is a converted BCT organized to advise and train the ISF and support civil capacity-building. On the ground today, 4th Brigade, 1st Armored Division—while not structured as an AAB—has successfully implemented this concept across portions of southern Iraq for many months.

What also helped us is the emphasis on developing strong interpersonal relationships with our counterparts—from my relationship with the Ambassador down to the relationships between those deployed across Iraq. We have a generation of young leaders who have grown up thinking through not only joint, but also interagency, solutions—and they have

developed relationships that will pay dividends in the future. The challenge now is to take what we have developed here and codify it in our educational institutions, doctrine, and leader development across our different institutions.

JFQ: *You mention that security is high in the southern parts of Iraq. What about in the north? Do Arab-Kurd tensions complicate the security situation there?*

President Obama speaks with GEN Odierno at Camp Victory during President's first trip to Iraq

we have a generation of young leaders who have grown up thinking through not only joint, but also interagency, solutions—and they have developed relationships that will pay dividends in the future

General Odierno: I see Arab-Kurd tension as the greatest single driver of instability in Iraq—and it does complicate the security situation in the north to an extent. While our combined operations have degraded al Qaeda, there is still a presence in the north, and those cells work to exploit any tensions

or seams. Some of the major issues fueling the Arab-Kurd tensions include the disputed internal boundaries, including the status of Kirkuk, as well as federal versus regional authorities and hydrocarbon issues. However, the United Nations Assistance Mission–Iraq is actively promoting a process that provides a forum for dialogue and political solutions. We fully support its efforts, most notably through security confidence-building measures

between the ISF and the Kurdish *peshmerga* and police forces. Our goal is to establish a joint security framework that will reduce the chances of any tactical miscalculations—by either force—turning into strategic incidents. I am confident that our efforts will help bide time for the political process to move forward.

U.S. Army (Karii Ronningen)

Both the Embassy and my team are very focused on this issue.

JFQ: *Some pundits claim that the Armed Forces do a poor job of producing strategic thinkers. Looking back on your experiences in Iraq, have you detected deficiencies in this realm, and would you suggest changes in the way joint professional military education institutions produce strategic thinkers?*

General Odierno: Today's complex world creates an environment that requires much more of our leaders. It is not enough to be technically and tactically proficient. We must be able to assess, understand, adapt, and yet still be decisive. We have to think through complex multidimensional problems, taking into account the diplomatic, economic, military, political, and cultural implications of every action. And we have to do all of this in an age of instantaneous global communication, an age in which the flow of information and its influence on the local and global audience is often just as important as military action in determining the outcome of operations.

This is especially true in Iraq—and success in this environment requires a certain type of strategic thinker and leader. As we've learned, battlefield victories alone do not equal strategic success, and effective solutions require a thorough understanding of the underlying cultural, political, tribal, and socioeconomic situation.

I believe that our institutions continue to adjust, which allows for the development of our adaptive, creative, and fundamentally sound leaders. The real question is not whether they have adjusted but whether they will continue to adjust. I have complete confidence that they will, but it is up to us as senior leaders to ensure this happens.

battlefield victories alone do not equal strategic success, and effective solutions require a thorough understanding of the underlying cultural, political, tribal, and socioeconomic situation

JFQ: *In a report recently published by the Institute for National Strategic Studies [Strategic Forum 245, Iraqi Security Forces after U.S. Troop Withdrawal: An Iraqi Perspective], Major General (Ret.) Najim Abed Al-Jabouri anticipates the prospects of the ISF after the U.S. troop withdrawal in 2011. He asserts that "supporting and strengthening the national character of the ISF is the best hope for a stable and integrated Iraq," and goes on to describe the major challenges facing the ISF. He opines that the ISF could become politicized by ethno-sectarian parties and thus might not be capable of maintaining security following a U.S. withdrawal. What are your thoughts on this assertion?*

General Odierno: I believe that view is dated and based largely on his observations from 2005 to 2008. It does not accurately reflect the current state of the ISF. As a task force commander just south of Mosul in November 2004, I experienced first-hand the near collapse of the just developing Iraqi police and to a lesser degree the Iraqi army. Starting nearly from scratch, coalition forces, along with brave men such as General Al-Jabouri, were left with the daunting task of rebuilding the ISF. When I left Iraq in September 2005, we had, as General Al-Jabouri describes, a semifunctional ISF challenged by corruption, sectarianism, weak rule of law, and lack of professionalism. However, through the combined efforts of Multi-National Security Transition Command–Iraq and the government of Iraq, we have made tremendous progress in addressing these challenges through training programs, professional development courses, and partnerships.

Iraq's increasingly professionalized military depends on both the trust of the people and a fully functioning judiciary system. Establishing rule of law is fundamental to Iraq's long-term success. The transition from a confessions-based to an evidentiary-based judicial system is an ongoing process that requires hard work throughout—from the point of capture to the courts. We continue to develop training programs with the ISF and judicial officials designed to teach them the use of advanced forensic techniques, such

GEN Odierno briefs press on security operations in Iraq as foreign allied troop levels decrease and Iraqi forces assume greater responsibility

GEN Odierno talks to Iraqi army officer

as biometrics, and to reduce the potential for corruption.

The reduced corruption, decreased sectarianism, improved professionalism, and adherence to the rule of law have all contributed to recent ISF successes in providing security for the Iraqi people and are reflected in the increasing public confidence in the ISF. According to a July 2009 Multi-National Force–Iraq poll, over 70 percent of the public believe the Iraqi army, and 60 percent believe the Iraqi police, are prepared to perform their respective duties. These confidence levels have increased over the last 4 months. Additionally, 60 percent of the Iraqi public believe the army and federal police are not influenced by sectarian interests, and only 20 percent of Iraqis believe the police are sectarian, a sharp decrease from just 1 year ago. Finally, over 65 percent of Iraqis believe the army is effective at preventing or stopping sectarian violence, and nearly 70 percent believe the police can protect their neighborhoods.

Tempering sectarianism is a key component of U.S. and Iraqi efforts to build ISF professionalism. We have made great progress in the past few years helping the ISF develop into an effective and professional force. Both the army and police are integrating professional standards of conduct into training and day-to-day operations. The army's promotion board system is an example of efforts to improve professionalism and overcome sectarianism. The board itself is composed of officers representing the demographic diversity of the entire country. It considers officers for promotion from a pool of candidates representing all of Iraq's tribes, provinces, and ethnic communities. Candidates must meet strict standards: they must have at least 3 years of service, have served in the field at their current rank, and have been recommended for command—and are then only promoted based on merit. A recent selection board for promotion to brigadier general, conducted in July 2009, was fully automated for the first

time. The Iraqi senior army officer, who is a Kurd, remarked the board was the best he has seen in the last 3 years and that it was totally impartial to religious or ethnic affiliations.

General Al-Jabouri raises important points in his article. He has identified many of the same challenges to Iraq's stability as we have in our joint campaign plan, and we have made tremendous progress in addressing them. What is emerging from our joint efforts with the Iraqi government and people are distinctly Iraqi solutions to Iraqi problems. Make no mistake—we still have work to do in overcoming the issues that General Al-Jabouri identifies. But the government of Iraq and ISF have made tremendous progress, and are coming closer every day to achieving the strategic goal of building a sovereign, stable, and self-reliant Iraq that is just, representative, and accountable, and that contributes to the peace and security of the region. **JFQ**

GEN Odierno briefs news media on security conditions in Baghdad

U.S. Army (Curt Cashour)

Breaking the Yardstick
The Dangers of Market-based Governance

By DON J. DeYOUNG

In the middle of the last century, America became a superpower. It happened, in part, because of a well-balanced technological partnership between the Federal Government and commercial sector. After winning a world war against fascism, this public-private alliance went on to cure infectious diseases, create instant global communications, land humans on the Moon, and prevail in a long Cold War against communism. All this and more was accomplished without bankrupting the Nation's economy. The partnership's record of service to the American people and the world has been remarkable.

A key element of this partnership has been Department of Defense (DOD) laboratories. They helped make the U.S. military the most formidable fighting force in the world. Among their many achievements, the labs developed and fielded the first modern radar in time for duty in World War II; invented the first intelligence satellite, indispensable during the Cold War; pioneered the original concepts and satellite prototypes of the Global Positioning System, vital for all post–Cold War conflicts; created fundamental "stealth" principles and night vision devices, a lethal combination in the first Gulf War; and produced the thermobaric bomb, which spared U.S. troops the bloody prospect of tunnel-to-tunnel combat in the mountains of Afghanistan.

In recent years, however, the private sector has been increasingly tasked to carry out the labs' functions on the belief that "through the implementation of free market forces, more efficient and effective use of resources can be obtained," which the Defense Science Board asserted in 1996.[1] As this development has progressed, there is a growing body of evidence that, rather than faster, better, and cheaper, the new approach is actually slower, less effective, and costlier. This is, in part, because the government's own scientific and engineering competence, a hallmark of the great successes in the past, is destroyed or bypassed as a result of the private sector's ascendant role.

This article, a sequel to *The Silence of the Labs*,[2] examines how the loss of in-house scientific and engineering expertise impairs good governance, poses risks to national security, and sustains what President Dwight Eisenhower called "a disastrous rise of misplaced power."[3]

A Sea Story

The new attack boat is undergoing sea trials. Shrouded in a gray summer haze, the remote coast of the homeland slowly fades away. The boat slips under the rolling ocean surface and angles into a routine deep dive. The crew moves with efficient military discipline. As the boat glides downward, hairline fractures crawl slowly across the muzzle doors to the torpedo tubes. Those doors, made from an unproven alloy, must stand firm against the sea's relentless urge to claim the boat.

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U.S. Navy (John F. Williams)

Commanding general of Marine Corps Combat Development Command briefs Chief of U.S. Naval Research and executive director of Office of Naval Research on current science and technology initiatives

U.S. Navy (Tiffini M. Jones)

Chief of Naval Operations tours littoral combat ship USS *Independence* at shipyard in Mobile, Alabama, where he received status updates on ships, unmanned systems, and industry facilities

But the laws of physics are unforgiving. The waters gather their power as the boat descends. The fractures lengthen, propagate, and deepen. Without warning, two doors fail in rapid succession. Many miles away, a sonar station hears the metallic groans of the crushed, dying hull. The sounds echo in the deep and then cease. The submarine lies silent and broken on the dark ocean bottom—*all hands lost*.

But for luck, this fictional tale could have become reality for the USS *Seawolf*. During its construction, with approval from the Navy's program office, the contractors chose a titanium alloy for the boat's muzzle and breech doors instead of the usual steel. Because *Seawolf*'s torpedo tubes were larger than those of the older *Los Angeles*–class boats, the contractors quite reasonably wanted to use a material as strong as steel but only half the weight. The alloy, however, had another property—*under certain conditions it is brittle*.

Some government scientists knew about the phenomenon, called stress corrosion cracking (SCC), and understood how cracks can form by the simultaneous action of tensile stress and a corrosive environment—such as seawater. If consulted, these experts could have warned that SCC will fracture some titanium alloys, at times fast enough for one to "stand there and watch it happen."[4] Acquisition commands within DOD cannot be knowledgeable in all scientific and technical fields that bear on their areas of responsibility, but they should have procedures to find, within the government, the required expertise to meet their mission.

The Naval Research Laboratory (NRL) had quantified the sensitivity of titanium alloys to SCC in seawater many years before *Seawolf* was designed.[5] One paper written in 1969 cautioned that "no prudent program manager would schedule a program in which SCC of new materials might be a problem without provision for a sound experimental characterization of stress-corrosion properties in the pertinent environment."[6] Unfortunately, NRL experts were not asked their opinion on using this alloy, nor were they consulted until after the mistake was detected—by chance. The stroke of luck occurred when, during *Seawolf*'s construction, a hinge pin fractured while being straightened by a hydraulic press. It was made from the same titanium alloy as the muzzle door it was intended to support.

Reacting quickly, the Navy formed a study team with "the best available experts on process and material technology."[7] This panel of government scientists determined that the contractor's decision had indeed "placed a material with risk of unstable, catastrophic failure at the pressure hull boundary," and they proposed improvements to the process of selecting materials.[8] The Navy implemented the proposals and praised these "unbiased technical experts" for having "contributed to *Seawolf*'s safe and effective operation."[9]

Market-based Governance

Seawolf's troubles arose during a time of dramatic change within the Federal Government. In the 1990s, agencies were reinventing themselves by increasing their levels of contracting, downsizing their workforces, and importing commercial practices. By 1996, the year of the *Seawolf* investigation, more than 200,000 Federal jobs had been cut, and the government workforce as a percentage of the Nation's was at its smallest since 1933.[10] This campaign to reinvent government evolved, by 2001, into one of transforming governance itself.[11]

These efforts have produced a government that depends on a massive conglomeration of private interests to do its work. Private firms now manage defense acquisition programs, perform intelligence operations, deploy corporate soldiers, conduct background checks of civil servants, and, until recently, collected taxes. Contractors even prepare the government's contract

documents, recommend contracting actions, assist in negotiating the deals, and investigate alleged misconduct by other contractors.[12]

This market-based governance is, at least in part, a response to the public's deep frustration with its government. Difficulties in solving problems and providing services made dissatisfaction with the Federal bureaucracy a bipartisan sentiment by the 1990s. By contrast, there was high confidence in the private sector's ability to deliver. Given industry's soaring efficiencies, derived in part from the development and use of information technologies, its enormous production capability, and its more flexible nature, the idea

of making government perform more like a business was understandable.

Market-based governance is the pursuit of public goals by exporting governmental functions to private firms and by importing commercial management methods into the government.[13] Outsourcing is the chief tool for the first approach, whereas centralizing and downsizing are tools for the second. Historically, the government has used these tools successfully to fulfill its obligations while remaining accountable to the American people. So the merit of the tools is not the issue. At issue, however, is that excessive and inappropriate use of them destroys the government's ability to preserve its internal competence and make use of that which remains.

The Federal Yardstick

The U.S. Government ultimately bears sole accountability for national missions and public expenditures. Decisions concerning the types of work to be undertaken, when, by whom, and at what cost should be made by government officials responsible to the President. Such decisions often involve complex scientific and engineering issues, a challenge made more difficult by the fact that the companies competing for Federal contracts can be very compelling advocates of their products.

The government must be a smart buyer and be capable of overseeing its contracted work. For this the government uses, or should use, its *yardstick*.[14] In technical matters, this measure is the collective competence of

if consulted, experts could have warned that stress corrosion cracking will fracture some titanium alloys, at times fast enough for one to "stand there and watch it happen"

government scientists and engineers (S&Es). Their advice must be technically authoritative, knowledgeable of the mission, and accountable to the public interest. William Perry, before becoming Secretary of Defense, underscored that necessity when he stated that the government "requires internal technical capability of sufficient breadth, depth, and continuity to assure that the public interest is served."[15]

More specifically, this "internal technical capability" is the cadre of government S&Es who *perform* research and development (R&D). Their hands-on expertise distinguishes them from the much larger

acquisition workforce. The S&Es provide authoritative advice to the acquisition workforce, which is in turn responsible for managing procurement programs. The two communities serve a common purpose, but they operate within different environments, with different requirements and skills. As Wernher von Braun, then-director of the National Aeronautics and Space Administration (NASA) Marshall Space Flight Center, explained it:

In order for us to use the very best judgment possible in spending the taxpayer's money intelligently, we just have to do a certain amount of this research and development work ourselves. . . . otherwise, our own ability to establish standards and to evaluate the proposals—and later the performance—of contractors would not be up to par.[16]

A strong yardstick requires a competent S&E staff, which must include a small number of exceptionally creative individuals, adequate financial and physical resources, sound management practices, a sufficient degree of autonomy to sustain an innovative environment, and the ability to perform challenging R&D. But as the *Seawolf* revealed, preserving the yardstick is not enough. The government must also be willing to use it.

With its yardstick, NASA used an effective partnership of public and private talent to achieve its historic feats of space exploration. The government's role was vital and its personnel were competent. John Glenn's humorous remark about the Mercury missions and his ride into orbit hints at the importance of that competence: "We were riding into space on a collection of parts supplied by the lowest bidder on a government contract, and I could hear them all."[17]

Glenn believed those low-bid parts would get *Friendship 7* home. Some of that confidence came from trust in the yardstick, the S&Es who provided authoritative and objective expertise to the mission. Because NASA's workforce was insulated from market pressures to earn a profit, its only bottom line was accountability to the American people.

Fractured Yardstick

In 1986, the space shuttle *Challenger* exploded on liftoff, killing all seven crewmembers. In the 1990s, the Hubble telescope was launched with a misshapen mirror and three spacecraft were lost on missions to Mars—one of them because one team worked in centimeters while another used inches. In 2003, the shuttle *Columbia* disintegrated on reentry, killing all aboard. Just a month earlier, an outsourcing panel

had proposed that the shuttle program move toward a "point at which government oversight of human space transportation is minimal."[18]

The loss of *Columbia* drew attention to NASA's troubled yardstick when the investigators implicated both approaches of market-based governance: exporting public functions and importing commercial processes:

Years of workforce reductions and outsourcing have culled from NASA's workforce the layers of experience and hands-on systems knowledge that once provided a capacity for safety oversight. . . .

Aiming to align its inspection regime with the International Organization for Standardization 9000/9001 protocol, commonly used in industrial environments—environments very different than the Shuttle Program—the Human Space Flight Program shifted from a comprehensive "oversight" inspection process to a more limited "insight" process.[19]

By contrast, the investigators paid homage to NASA's Apollo-era culture, noting that it "valued the interaction among research and testing, hands-on engineering experience, and a dependence on the exceptional quality of its workforce and leadership that provided the in-house technical capability

government scientists and engineers provide authoritative advice to the acquisition workforce, which is in turn responsible for managing procurement programs

to oversee the work of contractors."[20] Barely a year after the investigators finished their work, inadequate oversight was again blamed when the returning *Genesis* satellite capsule crashed in the Utah desert. NASA's administrator later announced that his agency "has relied more than I would like to see on contractors for technical decision-making at the strategic level."[21]

Market-based governance also drives DOD, where its yardstick resides principally within the Service labs.[22] The following sections suggest that in a market-based environment, the tools of outsourcing, centralizing, and downsizing have had a destructive impact on the yardstick and

Astronaut John Glenn in state of weightlessness traveling 17,500 miles per hour in Mercury capsule Friendship 7

NASA

yielded outcomes that have impaired good government, posed risks to national security, and sustained a rise of misplaced power.

Excessive Outsourcing. In 1996, the same year that *Seawolf*'s safety problem became evident, two Defense Science Board (DSB) reports asserted that outsourcing Federal work would yield savings of 30 to 40 percent. One of the reports advocated

> *outsourcing, centralizing, and downsizing have had a destructive impact on the yardstick and yielded outcomes that have impaired good government, posed risks to national security, and sustained a rise of misplaced power*

that DOD privatize its lab facilities, adding, "It is quite likely that private industry would compete heavily to obtain the DoD laboratories, particularly if they come fully equipped."[23]

Eventually, a growing body of evidence yielded more sober assessments about the merits of outsourcing R&D. For example, the Government Accountability Office (GAO) found that the DSB estimate of $6 billion in annual savings was overstated by as much as $4 billion.[24] Nonetheless, an increasing amount of the yardstick's R&D has been placed on contract over the years. Navy labs outsourced 50 percent of their workload in 2000, up from 26 percent in 1969. Army labs outsourced 65 percent, up from 38 percent.[25] This was the situation prior to September 11, 2001.

After the 2001 terror attacks, DOD and other agencies were tasked with larger workloads. Federal contracting doubled by 2006.[26] So, with smaller in-house S&E workforces, some turned to lead systems integrators (LSIs): a contractor, or team of contractors, hired to execute a large, complex Federal acquisition program. Commercial firms thus assumed unprecedented authority—but LSIs have produced troublesome results:

- Army's $234-billion Future Combat System (FCS). Costs more than doubled from $92 billion, and the program fell years behind schedule.[27] Items to be acquired have been reduced for lack of technological feasibility, affordability, or both.

- Coast Guard's $24-billion Integrated Deepwater Systems. Six years after the project started, the GAO reported "cost breaches, schedule slips, and assets designed and delivered with significant defects."[28] Eight patrol boats failed seaworthiness tests.[29]

- Navy's $25-billion to $33-billion Littoral Combat Ship (LCS). Costs for two lead ships more than doubled and three ships were dropped from procurement. LCS did not have an executable business case or realistic cost estimates, which led to higher costs, schedule delays, and quality problems.[30]

- Department of Homeland Security's (DHS's) $20-million Project 28. The 28-mile "virtual fence" along the Arizona-Mexico border was rejected because it "did not fully meet agency expectations."[31] DHS will replace the fence with new towers, radars, cameras, and computer software.[32]

These outcomes should not be a surprise. As far back as 1961, Harold Brown, then–Director for Defense Research and Engineering (DDR&E), observed that "it is not always wise or economical to try either to have a large project directed by a military user who does not understand whether what he wants is feasible, or to let the contractor be his own director."[33] He believed that DOD

labs were needed "to manage or help manage weapons system development."

And as recently as 2002, a year before the FCS contract was awarded, the Army's plans were briefed to a study team chaired by Hans Binnendijk, director of the Center for Technology and National Security Policy (CTNSP) at the National Defense University. The subsequent report stated that the team

U.S. Marine Corps (Keith A. Stevenson)

Marines use laptop computers to control robotic unmanned ground vehicles with payload capacity of 1,400 pounds that assist with transport requirements

was "not comfortable with an approach that turns this much control over to the private sector," and warned that there must be sufficient technical expertise within the government so that outside technical advice does not become de facto technical decisionmaking.[34]

The criticism of LSIs grew as price tags fattened and schedules stretched. In the wake of the Deepwater problems, the Coast Guard's commandant stated, "We've relied too much on contractors to do the work of government." While not addressing LSIs directly, the Institute for Foreign Policy Analysis went to the heart of the matter, stating, "Increasingly the Pentagon leadership is losing its ability to tell the difference between sound and unsound decisions on innovative technology and is outsourcing key decision-making as well."[35]

Congress has banned the use of new LSIs after October 2010 and suspended the "competitive sourcing" of Federal jobs.[36] In addition, there have been proposals to

increase the size of the acquisition workforce and improve DOD cost estimating. Though these actions may be necessary, they are not sufficient. Procurement problems will persist until the executive and legislative branches strengthen the Pentagon's strongest voice for independent, authoritative technical advice—its S&E workforce. In short, *acquisition reform will not succeed without laboratory reform.*

A healthy yardstick is vital for success in specifying the types of work to be undertaken, when, by whom, and at what cost, and for judging the quality of the work DOD

after the Soviet Union's collapse, DOD adopted its adversary's devotion to centralized administration and standard processes

places on contract. Excessive cumulative levels of outsourcing must be prevented. Contracts may be justified on their individual merit, but when taken together, they can break the yardstick, or erode the government's willingness to use it, as in the case of *Seawolf.*

Inappropriate Centralizing. DOD labs helped make America's military the most formidable fighting force in the world. In addition to the innovations mentioned earlier, they more recently invented the hand-launched Dragon Eye surveillance plane, used by combat forces in Iraq and now exhibited in the National Air and Space Museum, as well as a novel biosensor that was deployed in time for the 2005 Presidential inauguration.

Talent is the lifeblood of a lab; facilities are its muscle. Lab contributions to military power were due, in part, to the way they were allowed to manage their people and facilities. Ironically, after the Soviet Union's collapse, DOD adopted its adversary's devotion to centralized administration and standard processes. That business model does not work well in a lab environment. Peter Drucker, who has been called the most important management thinker of our time, thought that R&D "should not have to depend on central service staffs" because those staffs are "focused on their functional areas rather than on performance and results."[37]

DOD is modernizing the Civil Service system. On balance, the features of the National Security Personnel System (NSPS) may work well for the general workforce. However, the one-size-fits-all system would destroy the personnel demonstration projects

("demos") that have helped the labs recruit and retain talent.

In terms of flexibility and effectiveness, the personnel authorities offered by the demos exceed those under NSPS by a significant degree. There is no debate on that score. In 2006, the directors of eight labs—from across the Army, Navy, and Air Force—sent an unprecedented joint letter to the office of the DDR&E. It compared the NSPS and demo projects, confirmed the superior nature of the demo authorities, and requested DDR&E help in preserving the demos.[38] The letter was not answered. However, a study on Army science and technology (S&T) examined the letter and concluded that "DOD should approve the request recently put forward by senior laboratory managers from each of the Services to the DDR&E."[39]

Separate personnel systems for Federal labs were first advocated by a White House study, chaired in 1983 by David Packard.[40] The idea was urged again in 1988 by the president of the National Academy of Public Administration, who testified to Congress that:

[t]*he traditional "cookie cutter" approach—that all personnel issues impact all employees and all cultures alike and therefore call for mega-solutions across the board—should be abandoned. . . . The federal "cultures" that might warrant tailor-made personnel systems are not the Cabinet-level departments. They are . . . the military research laboratories, not the Department of Defense.*[41]

The lab demos were finally established in 1994, and evidence shows that these systems have been crucial for attracting the best S&E talent. For example, when measured against non-Federal peer groups, the National Institutes of Health (NIH), National Institute of Standards and Technology (NIST), and NRL compare favorably to comparable private sector labs in terms of publications and National Academy memberships. In some cases, they set the bar for their private sector counterparts.[42]

NIH, NIST, and NRL may not be typical of all public sector institutions, but separate personnel systems suggest a primary reason

for success. *All three have unique systems tailored to their R&D missions.* NIH is managed under Title 42 of the Public Health Service. NIST had a demo that was later made permanent by Congress. NRL has a demo now, but it may be pulled into the NSPS, along with eight other DOD labs. This would place them at a serious disadvantage in the coming years.

The government is facing a large-scale exodus from its workforce. By 2012, according to the Office of Personnel Management, more than 50 percent of the current workforce, including a third of its scientists, will be gone.[43] Replacing them amid the worrisome and widely reported global trends in science and engineering education means the government will be competing for talent at the same time the national S&E workforce is shrinking and foreign competition is strengthening.[44]

A recent CTNSP study outlines a strategy to rebuild the DOD S&E workforce over the coming years. However, it warns that if this workforce continues to decline relative to the size of the national workforce, "a point will be reached where it becomes irrelevant. . . . It will not be able to maintain competence in newly developing fields of science and technology while at the same time maintaining competence in the traditional fields that will continue to be important to DOD."[45]

In the last 5 years, the Army and Navy centralized their facility management functions under single commands. The Navy led the way in 2003, when the Chief of Naval Operations (CNO) consolidated his organization from eight claimancies (facility-owning commands) down to one: the commander, Navy Installations (CNI). The CNO's action applied to his organization alone, so the property and base operating support (BOS) functions of the four naval warfare centers were placed under CNI ownership.[46] NRL was not included because it reports to the Chief of Naval Research, and ultimately to the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN [RDA]). Navy policy also mandates that NRL manage its own real property and BOS functions because of its "unique Navy-wide and national responsibilities."[47]

The CNI uses a management concept that it imported from General Motors (GM). Some time earlier, GM adopted the original idea from McDonald's and relieved its product divisions (such as Buick and Chevrolet) of their facilities, centralized their management, and standardized the delivery of services.[48]

The CNI describes its version of the concept this way: "The installation will be controlled by a central committee,"[49] and it "will establish a standard level of service to be provided to all Navy funded tenant activities that is consistent across all regions."[50]

Management of R&D facilities by central committee, with standard levels of service, is a mistake. A one-of-a-kind nanoscience facility requires a far higher level of service than one established for piers or base housing. The Center for Naval Analyses expressed similar misgivings in a report to the CNO: "There is a difference between RDT&E and upkeep and maintenance. . . . NAVAIR [Naval Air Systems Command] and NAVSEA [Naval Sea Systems Command] should retain their claimancies. They have laboratories and test ranges with technologically sophisticated, sensitive, and expensive equipment. Delays and errors are extremely costly."[51]

The value of an imported process depends on how closely the government environment resembles the industrial one. This was underscored in a tragic way when the shuttle program adopted the inappropriate "insight" inspection regime. As for the similarity between the Navy and GM environments, the auto maker is "a single-product, single-technology, single-market business,"[52] which also fairly describes McDonald's. It does not describe the U.S. Navy, which requires efforts across a wide range of scientific disciplines and technology areas; and its operational environments, such as steel-crushing ocean depths, demand extraordinary levels of technical sophistication and reliability.

Cost reduction is a poor reason to import a risky commercial concept into a lab. By itself, successful innovation can save vast sums of money. For example, NRL developed an algorithm that allowed new and legacy military phones to work together.[53] This meant that legacy phones did not have to be retired by DOD and North Atlantic Treaty Organization forces. Nearly $600 million was saved, *nine* times the CNI's projected savings from consolidating global base operations.[54]

The Base Realignment and Closure (BRAC) Commission understood the risks of applying inappropriate management methods to R&D. In 2005, it rejected a proposal to absorb NRL's facilities and BOS functions into a "mega-base" operated by CNI's Naval District Washington region. The commissioners ruled that "NRL's continued control of laboratory buildings, structures, and other physical assets is essential to NRL's research mission," and they endorsed the ASN (RDA) policy by codifying it in law.[55] Unfortunately, neither the commission's statutory ruling, ASN (RDA) policy, nor the CNO's own directive has stopped CNI from asserting an inappropriate and unapproved authority to manage NRL facilities.[56]

Risky Downsizing. Closing unneeded infrastructure is good stewardship of taxpayer dollars. However, as the private sector's role has increased, DOD labs have been marginalized and closed despite the urgent need for technology's help on today's battlefields.

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a one-of-a-kind nanoscience facility requires a far higher level of service than one established for piers or base housing

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Workers investigating cause of *Columbia's* destruction reconstruct bottom of orbiter in grid on hangar floor

In March 2004, DOD certified to Congress that a significant level of excess capacity still existed within its base structure.[57] This cleared the way for a fifth round of closures and realignments. Previous cuts had already run deep. Between 1990 and 2000, DOD lab personnel were reduced by 36 percent, due in large part to BRAC.[58]

What stops the Pentagon from cutting too deeply? BRAC law prevents it by requiring that the Secretary of Defense base *all* proposals on DOD's 20-year Force Structure Plan. This ensures that today's cuts do not place tomorrow's military in jeopardy. Data on Future Required Capacity were key to knowing if lab closures would support or undermine the Force Structure Plan, and

closures and cuts would deepen the shortfall and, in the law's language, "deviate substantially" from the Force Structure Plan.[61] However, as revealed by a newspaper investigation, the data on Future Required Capacity were missing from the TJCSG's May 19, 2005, final report to the BRAC Commission, though the data were contained in a draft 9 days earlier.[62]

Congress and the commission were unaware that the proposals deviated substantially from the Force Structure Plan, so the lab closures and realignments were approved. The resulting cuts to the S&E workforce could place future troops at risk by exacerbating a projected shortfall of technical support. Moreover, the cuts ensure gross waste. For

around the globe." In April, the first human to reach outer space spoke Russian. Days later, the United States was humiliated in Cuba's Bay of Pigs. In August, construction started on the Berlin Wall. And in October, the Soviet Union detonated a 58-megaton hydrogen bomb that sent an atmospheric shockwave around the planet three times, the most powerful manmade explosion in history. In the midst of these grave events, DDR&E Harold Brown announced that the Secretary of Defense would be strengthening the DOD labs.

Brown's efforts were aided by a government-wide panel, led by budget director David Bell. Members included the Secretary of Defense, the President's science advisor,

U.S. Navy (Jim Brennan)

USS *Seawolf* conducts sea trials before its scheduled commissioning, July 1997

the closure of Fort Monmouth is estimated to cost more than twice the original projection, and it could take 13 additional years to reconstitute its capability at Aberdeen

and the leaders of NASA, the National Science Foundation, and the Civil Service Commission. They were tasked by the President to assess "the effect of the use of contractors on direct federal operations, the federal personnel system, and the government's own capabilities, including the capability to review contractor operations and carry on scientific and technical work in areas where the contract device has not been used."[64]

President Kennedy's concerns were sparked by contracting abuses in the 1950s and by a growing realization that the increased outsourcing spurred by the Hoover Commission had not markedly improved efficiency. In fact, President Eisenhower's Science Advisory Committee had concluded by 1958 that an extreme reliance on contracts damaged "the morale and vitality of needed government laboratories."[65]

The Bell Report, as it became known, made a big impact. Salary scales were improved. Agencies were given the authorization to allocate, with no set limits, Civil Service grades 16 through 18 to positions primarily concerned with R&D.[66] Appointments of exceptionally qualified individuals to steps above the minimum entrance step in grades GS–13 and up were allowed.[67] More discretionary research funding was provided,

it was the job of the Technical Joint Cross-Service Group (TJCSG) to derive those data.[59]

The TJCSG improved upon the analyses of earlier BRACs by adding the number of on-site contractor personnel into the calculations of capacity. Previously, the large numbers of contractors who work at the labs and use their infrastructure were not counted. The TJCSG's complete account of all on-site personnel showed current excess capacity levels to be far less than expected— an average of 7.8 percent from 2001 to 2003, and only 4.4 percent for 2003.[60] Hence, small cuts would not affect today's forces.

As for the law's requirement to support tomorrow's warfighter, the data on Future Required Capacity projected a future deficit of necessary infrastructure, which meant that

example, the closure of Fort Monmouth, New Jersey, is estimated to cost more than twice the original projection, and it could take as many as 13 additional years to reconstitute its capability at Aberdeen, Maryland.[63] Lastly, the cuts apply more stress to the already fracturing yardstick.

Reform Works

Excessive outsourcing, inappropriate centralizing, and risky downsizing are endangering the Pentagon's yardstick. The good news is that the yardstick was threatened once before, and the challenge was met successfully.

The year was 1961. President John Kennedy called it "a most serious time in the life of our country and in the life of freedom

and construction funds for new lab facilities were increased considerably. These and other reforms yielded "significant improvement in [the labs'] ability to attract first-class people."[68]

The reforms were not born out of affection for government infrastructure. In fact, DOD conducted hundreds of base closures and realignments during the 1960s, proving that it is possible for the Pentagon to nurture a high-quality S&E workforce and cut infrastructure at the same time.[69] It took only the commitment to do so.

Signs appeared in the 1980s that the in-house system was again in need of help. Scores of studies have analyzed the problems and offered a remarkably consistent set of solutions. In fact, a 2002 tri-Service report by the Naval Research Advisory Committee, Army Science Board, and Air Force Scientific Advisory Board noted that the subject "has been exhaustively investigated" and found the labs' situation critical.[70]

Little has been done in the wake of these studies, with the notable exception of establishing the now-threatened lab personnel demos. The problems are well known, well understood, and solvable. Five solutions are listed below:

- Divide the Senior Executive Service into an Executive Management Corps (EMC) and a Professional and Technical Corps (PTC). This change was proposed by the National Commission on the Public Service.[71] Like the current Senior Executive Service, the EMC and PTC must be equivalent in rank to general/flag officers. Personnel within the PTC should run the labs.

- Exclude the lab personnel demos from NSPS permanently—but do not freeze them in time. Empower them to pioneer additional personnel concepts. This can be done using legislated authorities that remain unimplemented or otherwise constrained by the Office of the Under Secretary of Defense for Personnel and Readiness. One example is Section 1114 of the Fiscal Year (FY) 2001 National Defense Authorization Act, by which Congress placed the creation of new demo authorities in the Secretary of Defense's hands.

- Create a separate R&D military construction budget. The current process pits "tomorrow" against "today" by forcing R&D to compete with operational needs, such as hospitals or enlisted housing. R&D has not fared well since the reform period of the 1960s. For example, NRL received $166 million (FY08 dollars) from 1963 through 1968, but only $154 million (FY08 dollars) over all years after 1968.

- Restore to civilian lab directors all the authorities lost over the last two decades, including those to make program and personnel decisions, allocate funds, and otherwise manage the necessary resources to carry out the mission. One example is to return facility management authorities to the Army labs and naval warfare centers. Another is to reinstate the full strength "direct hire" authorities held by the labs until the 1980s.

- Restore the dual-executive relationship of the military and civilian leadership at all labs where it has been weakened or eliminated. While difficult in practice, authority must be shared equally to meet the mission. The military officer assures continuing ties with the Services that the labs exist to support. The senior civilian assures stable, long-term direction of the organization and the tough technical oversight needed to protect the public's interests.

research and development has not fared well since the reform period of the 1960s

Accountability-based Governance

The last two decades stand in stark contrast to the reform era, when the Kennedy and Johnson administrations, during a time at least as dangerous as our own, preserved the labs' ability to perform long-term research and oversee contracted work. It is tempting to blame "bureaucracy" for the dismal situation, but doing so would miss the problem and its solution.

The Problem. America's great technological achievements in the 20th century were born of a healthy partnership between the public and private sectors. By comparison, market-based governance has spawned great failures, and the costs have been dear in terms of wasted dollars, lost time, and unmet national needs. Less obvious is the diminished transparency of decisions, largely because companies are not subject to the Freedom of Information Act. Moreover, accountability erodes as the yardstick fractures and the government is forced to rely more and more on private sources. In time, private interests attain "unwarranted influence" and make public decisions through "misplaced power," the very concerns voiced by President Eisenhower in his farewell address.

Private interests pose a threat to democracy when they gain a role in governance, a fear felt keenly in the early days of the Republic. The authors of the *Federalist Papers* believed private interests to be unresponsive to the public good. James Madison argued that a republican, or representative, form of government was the best way to control them and thereby save the new democracy from being destroyed by corruption. In *The Federalist No. 10*, he stated, "No man is allowed to be a judge in his own cause, because his interest would certainly bias his judgment, and, not improbably, corrupt his integrity."

The Republic needs a strong yardstick. Without one, our government cannot govern well—not even if it retains the best and brightest on contract. The government's own assets must capably bear the responsibility for decisions that affect the Republic's interests, and they must maintain public confidence by the manner in which those decisions are made. This is vital. As Adlai Stevenson stated, "Public confidence in the integrity of the Government is indispensable to faith in democracy; and when we lose faith in the system, we have lost faith in everything we fight and spend for."

The Solution. In matters involving science and technology, competent government S&Es in sufficient numbers, with sustained support from the executive branch, are the only means for tempering the private sector's natural tendencies and for harnessing its formidable skills in ways that serve public purposes. A healthy balance was restored in the 1960s. It can be done again. The Bell Report's central finding offers clear direction and should be endorsed as a global principle by the new administration: "No matter how heavily the Government relies on private contracting, it should never lose a strong internal competence in research and development."

This is critical because market-based governance is accountable to a financial bottom line and to a well, or poorly, written contract. Without strong oversight, it injects political illegitimacy into the exercise of state power and risks the failure of national missions. By contrast, accountability-based governance contributes to making government safe for democracy. Our republic is more than a market, our government more than a business, and our citizens more than consumers.

However, given the demonstrated costs of market-based governance, one question still needs to be answered. If the problems of the government's yardstick are so well

known, well understood, and solvable, then what explains the persistent inaction?

Misplaced Power

President Eisenhower warned that "in the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist." Our vigilance failed when economic and political interests converged after the Cold War in a way that is eroding the government's will to support its yardstick—the S&Es who perform R&D within its defense labs. This is what makes recruiting high-quality talent, building new facilities, and eliminating burdensome bureaucracy so hard to achieve.

Power is misplaced when it is pulled away from the Pentagon into corporate boardrooms, where the Nation's interests are at risk of being traded for private interests. Back when there was a healthy balance in the technological partnership between DOD and the commercial sector, the Pentagon could ensure that decisions were made by government officials who were publicly accountable. Furthermore, the contracted work was overseen by government S&Es who were knowledgeable and objective because they performed R&D in the relevant areas and were insulated from market pressures to earn a profit.

The so-called revolving door helps to sustain the problem. A recent GAO study found that between 2004 and 2006, 52 contractor firms hired 2,435 former DOD officials who had previously served as generals, admirals, senior executives, program managers, and contracting officers.[72] Perhaps this is inevitable with the sharp disparity between private and public compensation. The average pay for a defense industry chief executive officer is 44 times that of a general with 20 years experience.[73] More dramatically, in 2007, one private security firm's fee for its senior manager of a 34-man team was more than twice the pay of General David Petraeus, then-commander of 160,000 U.S. troops and all coalition forces in Iraq.[74]

The military-industrial complex is not a conspiracy; it is a culmination of historical trends. Those trends are the outcomes of our collective choices, which are in turn dictated by our needs and values. In his 1978 critique of Western civilization, the Soviet émigré Alexander Solzhenitsyn, who was no friend of communism, lamented the West's "cult of material well-being" that depends on little more than a cold legal structure to restrain irresponsibility.[75] Thirty years after his warning, not even the code of law could protect us from ourselves and the most fearsome economic crisis since the Great Depression.

Money plays too great a role in public policymaking, a fact that might alarm us more if it were not lost in the glare of the West's passion for material well-being. This is the reservoir from which market-based governance derives its strength, and in turn it saps that of the government. The United Kingdom offers an example of the twisted priorities that can be caused by the commingling of societal choices, government requirements, and commercial interests. With public support waning, the Royal Navy's budgets declined. Strapped for cash, it now rents naval training facilities to a contractor who teaches basic seamanship to crews of the world's "super yachts." These mega-boats of the rich and famous are the size of frigates, and taken together they require a larger workforce than all the warships flying the Union Jack.[76]

The Choice

When the sons of jihadism attacked America, the sons and daughters of democracy responded. The first to do so were public servants and civilians, such as the firefighters who entered the burning Twin Towers knowing they might not come out alive, and Flight 93's passengers who died thwarting a larger massacre. Our Armed Forces then took the fight overseas and battled valiantly to liberate two societies from despotism.

But the storm that moves upon the West has not yet gathered its strength. We must develop new energy sources as oil is depleted, lessen manmade contributions to climate change, protect vital ecosystems, contain pandemics and drug-resistant infections, deter adversarial nations, secure our borders and seaports, and defend civilization from an opportunistic enemy that has apocalyptic goals and is not deterred by traditional means.

Our public sector labs exist to help meet such challenges. They have been there for us in the past. With reforms that restore a healthy partnership with the private sector, they will be there for us tomorrow. A broken yardstick is not fated. It is a choice. **JFQ**

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Radar versus Stealth

Passive Radar and the Future of U.S. Military Power

By A R E N D G . W E S T R A

Sailor monitors radar screen in Combat Direction Center aboard USS *John C. Stennis*

Faced with the prospect of aerial stealth proliferation, states in the 21st century are looking for antistealth defense options. One such alternative, passive radar, appears a cost-effective counter to stealth. *Passive radar* is a receive-only system that uses transmitters of opportunity.[1] Integrating a system of netted receivers, passive radar can detect, track, and target piloted and unpiloted stealth systems and provide cuing for antiair weapons systems. A passive radar system emits no radio energy and can be well camouflaged in both urban and rural landscapes. The threat system produces no indications on friendly radar warning receivers and is difficult to locate and target. Faced with a passive radar threat, the United States may find itself unable to achieve air superiority at an acceptable cost.

As this article shows, ongoing advances in passive radar will deny traditional means to defeat enemy air defenses, make air superiority difficult to achieve against a passive radar opponent, and require changes in thinking to maintain U.S. power projection capability. In developing this central idea, this article describes the history of the battle between aircraft and radar, the rise of stealth and counterstealth, and the ongoing surge in passive radar and how it relates to advances in signal processing and sensor fusion. Additionally, this article assesses the passive radar threat to stealth, posits implications for future U.S. military power, and recommends a U.S. course of action regarding passive radar.

Aircraft versus Radar

"The defensive form of warfare is intrinsically stronger than the offensive"—so argued Carl von Clausewitz in *On War.*[2] The static warfare of the late 19th century and the

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Great War of 1914–1918 appeared to validate this idea. In 1921, however, Giulio Douhet asserted that the airplane changed warfare "by magnifying the advantages of the offense and at the same time minimizing, if not nullifying, the advantages of the defensive."[3]

Douhet did not envision the many surface-to-air threats that would evolve over the decades after his work was published. Neither did airpower critics. As Sir Stanley Baldwin informed the British parliament in 1932, "I think it is well also for the man in the street to realize that there is no power on earth that can protect him from being bombed, whatever people may tell him. The bomber will always get through."[4]

Yet a few decades earlier in 1904, German engineer Christian Hülsmeyer had patented the *telemobilskop*, an early form of radar. But it was not until 1935 that radar first showed significant operational promise. In the now famous Daventry experiment, Sir Robert Watson-Watt used radar to detect a British Heyford bomber at a range of 8 miles.[5] Notably, the Daventry experiment tested a passive radar system using the BBC Empire broadcast as a transmitter of opportunity.[6] Watson-Watt went on to develop the British Chain Home radar that played a critical role in defeating the German *Luftwaffe* during the Battle of Britain in 1940.[7]

World War II served as catalyst for a second paradigm shift. The overwhelming offensive power of the airplane was largely mitigated by the deployment of radar and modern air defenses. Airpower did not prove an all-powerful offensive weapon that could not be countered, and the bomber did not always get through. Air defenses of both the Axis and Allied opponents proved complex and resilient, and combatants obtained air superiority only locally and for limited durations through the costly reduction of enemy air defenses. This paradigm held firm through World War II and for the duration of the Cold War. For the time being, it seemed that Clausewitz had caught up with the airplane.

Despite Watson-Watt's breakthrough at Daventry, the experiment highlighted passive radar's difficulties, including intermittent signal strength and, at the time, irresolvable locating and tracking ambiguities due to the passive radar geometry.[8] Passive radar is *bistatic*, meaning the receiver is located at a distance from the transmitter.[9] Bistatic radar geometry is shown in figure 1. In 1936, scientists solved the difficulty of geometry by collocating the

transmitter and receiver via a shared antenna, a configuration known as *monostatic*, thus creating the conventional radar configuration most commonly used thereafter.

Historically, radar has been the cornerstone of air defense. For example, during the Vietnam War, North Vietnamese air defense radars targeted U.S. aircraft, which, in turn, countered with jamming and antiradiation missiles. Due to the success of North Vietnamese air defenses, the United States was only able to establish temporary air superiority over local areas of North Vietnam. Over the course of the war, the North Vietnamese shot down 190 U.S. aircraft using 1950s-era Russian surface-to-air missiles (SAMs).[10]

A third paradigm shift began in the 1970s in the "Skunk Works" of Lockheed Martin, where stealth pioneers first created the F–117 "stealth fighter" (more bomber than fighter in usage).[11] Made operational in 1983, the F–117 saw combat in Panama in 1989 and again in the Gulf War in 1990.[12] During the Gulf War, the F–117 was employed against Iraq's most heavily defended targets. In spite of Iraq's robust air defenses, not a single F–117 was lost or damaged during the conflict.[13] By comparison, 32 nonstealth aircraft were lost to antiaircraft artillery (AAA) and SAMs.[14] If Baldwin had witnessed the Gulf War, he might have concluded, "The *stealth* bomber will

always get through." Indeed, stealth aircraft have maintained the overwhelming advantage in recent conflicts, including Operation *Allied Force* and the invasion of Iraq in 2003.

Despite the overall success of the U.S. stealth program, in 1999 an F–117 was shot down in the Balkans by a Serbian SAM battery.[15] Although some considered the downing an anomaly, the incident created much controversy. While the Air Force assessed tactical lessons learned, others saw evidence that stealth could be defeated.[16] The incident illustrated what stealth designers already knew: stealth technology does *not* make an aircraft invisible. As a submariner once aptly noted, "Stealth is a zero-sum game.

the overwhelming offensive power of the airplane was largely mitigated by the deployment of radar and modern air defenses
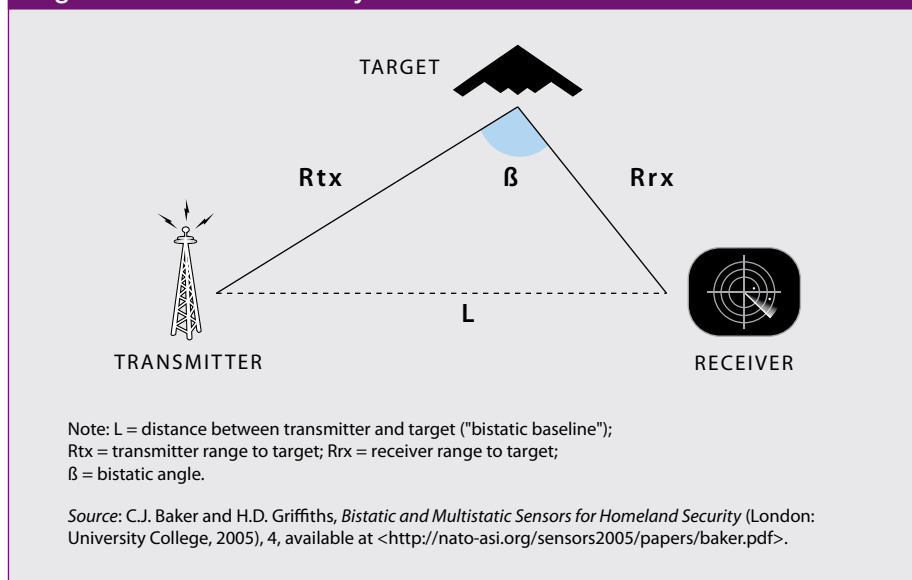
In a given encounter, one platform has it and the other does not. The tactical advantage accrued by being able to detect, close, and attack from a covert stance completely dominates all other factors in any encounter algorithm."[17] In Serbia in 1999, a SAM battery commander attacked from a covert stance and won the tactical advantage. It was a missile shot heard around the stealth world.[18]

The Future of Stealth

If anything, the downing of an F–117 over Serbia only highlighted to the United States the importance of stealth. Increasingly, the U.S. military has made stealth one of its

Figure 1. Bistatic Geometry

TARGET

R_{tx} ß R_{rx}

L

TRANSMITTER   RECEIVER

Note: L = distance between transmitter and target ("bistatic baseline"); R_{tx} = transmitter range to target; R_{rx} = receiver range to target; ß = bistatic angle.

Source: C.J. Baker and H.D. Griffiths, *Bistatic and Multistatic Sensors for Homeland Security* (London: University College, 2005), 4, available at <http://nato-asi.org/sensors2005/papers/baker.pdf>.

highest priorities, both in terms of new acquisitions and the retrofit of older aircraft. In short, stealth is the centerpiece of the U.S. air superiority strategy.

As stealth grows ubiquitous, nonstealth systems will become rare. Stealth principles are evident in nearly every newly developed military aircraft, ship, and ground combat system. Nations devote large proportions of their military budgets to stealth research and development. And with the Air Force having retired the F–117 in 2008, the United States now has a shortage of operational stealth aircraft.[19] Current U.S. stealth aircraft inventory consists of 20 B–2 bombers and 187 F–22s, with the Joint Strike Fighter projected to become operational in 2012.[20] Planned U.S. procurement for the Joint Strike Fighter is 2,456 aircraft delivered over a 28-year period.[21] Meanwhile, Russia, India, China, Japan, and other countries are attempting to enter the stealth aircraft market.[22] In short, stealth is relevant, in much demand, and continuously evolving.

Stealth Techniques

Stealth is achieved by a broad collection of techniques that render a platform difficult to locate and attack. It requires reducing aircraft signature, generally categorized as either *active* or *passive*:

Active signature is defined as all the observable emissions from a stealth platform. . . . Passive signature is defined as all the observables on a stealth platform that require external illumination. . . . The active signature reduction methods are commonly called low probability of intercept (LPI). . . . Passive signature reduction techniques are often called low observables (LO).[23]

Stealth designers attempt to balance signature techniques.[24] For example, efforts to make an aircraft less visible at 5 miles are somewhat superfluous if it can be acquired by an infrared (IR) sensor at 20. LPI designers focus most of their efforts on reducing the emissions produced by the aircraft's radar and IR sensors.[25] In designing LO, the main concern is reducing reflection in the radar spectrum, also known as the radar cross section (RCS).

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stealth is achieved by a broad collection of techniques that render a platform difficult to locate and attack

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Designers reduce RCS primarily through fuselage shaping and radar-absorbent material. Fuselage shaping, the more important of the two methods, reflects radar energy away from the direction of the emitter.[26] Figure 2 depicts a stealth aircraft RCS versus that of a conventional aircraft. Fuselage shaping works primarily against conventional radars where the receiver is collocated with the transmitter and is less effective against bistatic radar geometry.[27] Radar-absorbent material augments fuselage shaping by absorbing radar energy and reducing the strength of the radar echo.[28] Future innovations may allow stealth aircraft to actively cancel radar echo by retransmitting radar energy and/or by ionizing boundary layer air around the fuselage.[29]

Counters to Stealth

Before discussing passive radar, several other radar and sensor systems are worth mentioning in terms of counterstealth capability. One of the most significant counters to stealth, namely conventional very high frequency (VHF) and ultra high frequency (UHF) radar, has been around since World War II and is still in use today for long-range air surveillance. Most LO techniques are designed to defeat acquisition and fire control radar in the X band, which uses centimeter wavelength. VHF- and UHF-band radar, however, uses decimeter- to meter-long wavelength. In general, the RCS of an aircraft increases as wavelength of the illuminating radar increases.[30] Furthermore, when the radar wavelength is in the same order of magnitude as the aircraft or parts of it, the radar waves and the aircraft resonate, which significantly increases the RCS of the aircraft.[31] It is the physics of longer wavelength and reso-

Figure 2. Conventional and Stealth Aircraft Radar Cross Section Signature

Note: dBsm = decibels per square meter; dB = decibels
Source: David Lynch, *Introduction to RF Stealth* (Raleigh, NC: SciTech, 2004), 6.
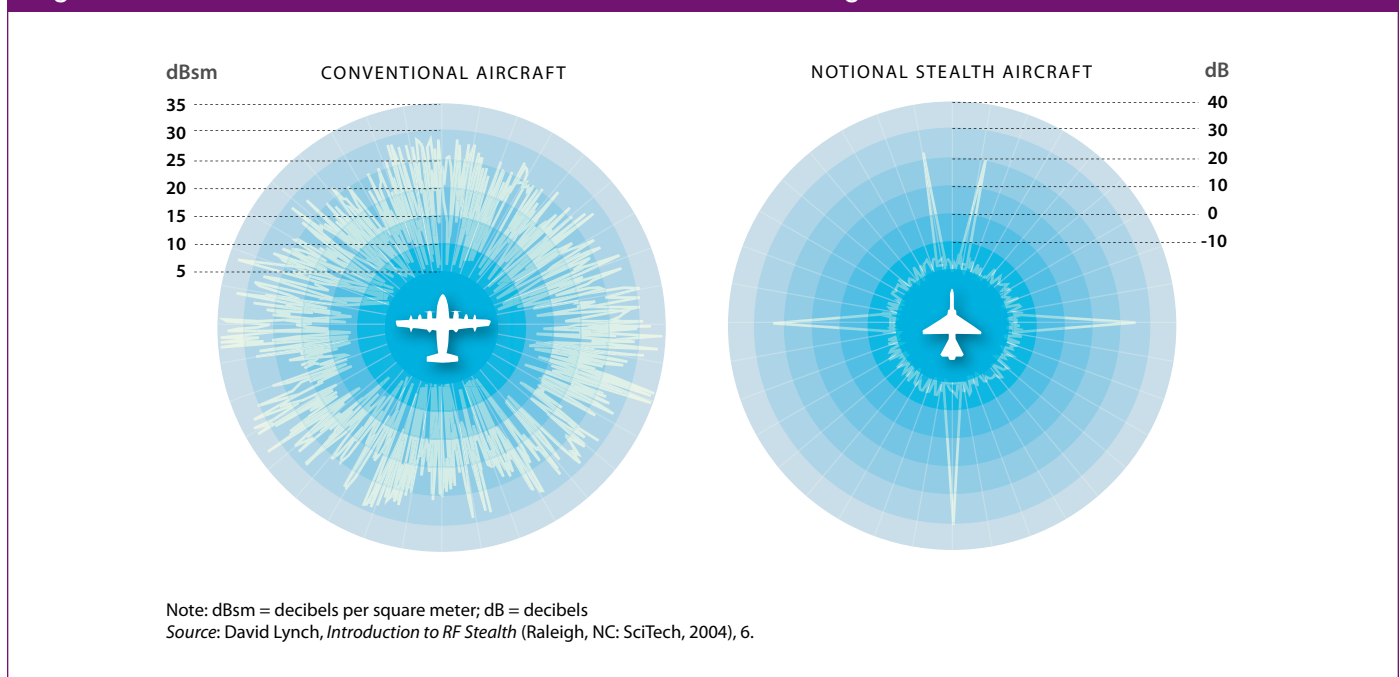
nance that enables VHF and UHF radar to detect stealth aircraft. Poor resolution in angle and range, however, has historically prevented these radars from providing accurate targeting and fire control.[32]

Since the Gulf War, the Russian defense radar industry has put considerable effort into digitizing its VHF and UHF radar systems to improve counterstealth capability. Russia's older model radars now have improved resolution and signal processing, and newly developed models, such as the Nebo surface vehicle unit, which is a VHF adaptive electronically steered array radar, likely present significant counterstealth capability.[33]

Other recently developed conventional radars likely to have counterstealth capability include Lockheed Martin's theater high-altitude area defense radar and the Israeli Green Pine radar (recently sold to India), systems with both long range and high resolution in the UHF L-band.[34] The Signal Multi-beam Acquisition Radar for Tracking (L) naval radar manufactured by Thales is yet another system with reputed counterstealth capability.[35]

Passive listening systems, such as electronic support measures (ESM) and direction finding (DF), attempt to detect stealth aircraft radar, radio, and data link emissions and pass this information to surveillance radars. LPI techniques of stealth are designed to reduce or deny ESM and DF, but systems such as the Russian *Kolchuga* remain formidable threats that are likely being updated with digital processing.[36]

Another counter to stealth is IR/electro-optical (EO) systems, which include IR search and track and high magnification optics. Such systems, however, are limited in the ability to scan large volumes of airspace and usually must be cued by other sensors. In addition, most of this spectrum is degraded by clouds, low illumination, and low visibility. Stealth aircraft counter IR/EO through heat signature management, stealthy flight profiles, and LO paint schemes.

Growing in potential as a counterstealth technology is millimeter wave (MMW) imaging, which uses the radiometric signature naturally emitted by all objects. MMW penetrates clouds and low visibility. The waveform can also be transmitted by radar, which then receives and processes the return echo. The A–64 Apache Longbow/Hellfire system is an example of operational MMW radar. The Russian defense industry has developed

MMW antiair missile seekers, and other countries are following suit.[37]

While the aforementioned technologies offer important capabilities, they possess limitations that restrict their effectiveness for air defense. Conventional radar is vulnerable to detection and attack by electronic warfare and air-delivered weapons; listening systems do not provide tracking information; and IR/EO/MMW is limited in surveillance capabilities.

In contrast, passive radar is covert, all weather, and capable of medium- to long-range surveillance, and shows strong potential in detecting, tracking, and targeting stealth aircraft. It is thus emerging as a solid competitor in the counterstealth game.

a new paradigm is emerging, enabled by advances in networked computing and passive radar technology

Passive Radar

A new paradigm is emerging, enabled by advances in networked computing and passive radar technology. Because of their potential to counter stealth-based airpower advantage, the use of these technologies by peer competitors is highly likely. That these systems are both low cost and, in part, based on commercial-

off-the-shelf technology makes them attractive for nonpeer countries as well.

Passive radars use transmitters of opportunity. Potential waveforms include FM and AM radio, television, digital audio/video broadcast, and cellular phone networks.[38] Today, passive radar is often configured as a "multistatic" system using three or more transmitters and receivers.

Passive radar locates and tracks targets through a combination of methods, greatly simplified here for the sake of discussion. First, the radar measures the time difference of arrival between the direct signal from the transmitter and the reflected signal from the target to determine the bistatic range. Bistatic range, expressed as an ellipse, is shown in

figure 3. The radar uses the intersection of the receiver-to-target bearing and the bistatic range ellipse to estimate approximate target location. In a multistatic system, the radar refines target location based on intersecting bistatic range ellipses. The radar further measures Doppler shift—wavelength compression or expansion caused by relative motion—to determine target

Figure 3. Bistatic Range
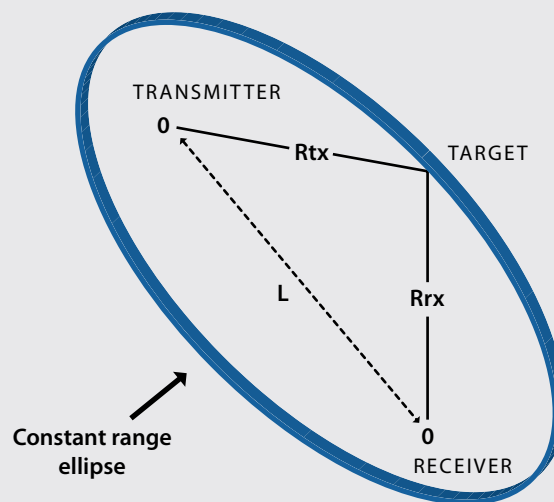
Note: Rtx = transmitter range to target; Rrx = receiver range to target; L = distance between transmitter and receiver. Bistatic range, expressed as Rtx + Rrx – L, remains constant at all points on the ellipse.

Source: *NationMaster Encyclopedia*, "Bistatic Range," available at <http://www.nationmaster.com/encyclopedia/Image:BistaticRange.png>.

heading and speed. The radar tracks the target by performing regular updates.

Advanced signal processing allows passive radar to integrate data from multiple receivers, cancel signal interference, differentiate real targets from ghost returns and clutter, and establish a target track. Although such processing requires significant computing power, most passive radar systems operate on commercial DOS-based computing technology.

The recent advances of passive radar arise from a confluence of digital processing technology, cheap, sophisticated hardware, and the demand for enhanced surveillance.[39] Moore's law describes the doubling of computer processing speed every 18 months. Meanwhile, designers have made significant advancements in corresponding radar software. What was once thought impossible—that is, integrating signals from multiple receivers and detecting tiny echoes in high-clutter radar environments—has now become feasible.[40]

As a result of this confluence of technology, several systems are now either available off the shelf or are in development. Such systems include Lockheed Martin's "Silent Sentry,"[41] Roke Manor Research's CELLDAR,[42] Thales-Raytheon's Homeland Alerter,[43] and others, including French, Swedish, Chinese, and Russian systems.

Certain commercial waveforms are more suitable for passive radar illumination than others. The most important parameters

are frequency, bandwidth, and the presence of continuous wave, which provides Doppler shift for measurement of velocity.[44] Also important is whether illuminators transmit continuously or with significant interruptions (for example, daytime only).

Several waveforms in the HF, VHF, and UHF bands have shown potential for use in passive radar and also exhibit counterstealth properties. In the VHF band, FM radio is broadcast at high relative power and has multiple transmitters available in moderately to heavily populated regions. Analog television (VHF band) also provides useful illumination, as does digital audio broadcast, which is growing in usage worldwide. High-definition (HD) television is spreading globally as well and offers a wideband, high-power waveform in the low UHF band. In the HF band, Digital Radio *Mondiale* (DRM), a digital form of shortwave AM radio, also has passive radar potential.

These waveforms offer differing levels of utility. Analog television and FM radio both offer strong illumination and medium detection ranges—FM out to roughly 120 kilometers (km).[45] Analog television has a strong signal but suffers from interference, while FM is marked by interruptions, such as pauses during human speech.[46] HD television provides an uninterrupted signal with a detection range of 120 km.[47] DRM potentially offers over-the-horizon detection ranges; however, low resolution limits its use to early warning

radar. Digital audio broadcast, while a useable waveform, emits at low power, offering only a short detection range of 36 km.[48] Use of more than one waveform is possible, with existing systems touting accurate three-dimensional surveillance capabilities across multiple waveforms, to include FM radio and analogue and digital television.

Most important to this discussion, all of the aforementioned waveforms fall between 3 and 450 megahertz. Based on their decimeter- to meter-wavelengths, these waveforms inherently increase RCS and also interact with an aircraft to create resonance. RCS induced by resonance is largely independent of fuselage shape. In short, radar in this spectrum is inherently counterstealth.

While passive radar can perform detecting, locating, and tracking functions, it may also be able to perform target identification (ID). Under development are methods to conduct target imaging using multistatic UHF-band Inverse Synthetic Aperture Radar.[49] Additionally, existing passive ID measures, such as DF/ESM, will likely augment passive radar.

If successful at creating a target track and ID, passive radar could provide cueing for surface-to-air and airborne weapons systems in order to enable acquisition. Weapons system cueing requires communications infrastructure; for a covert system, this means a local area network for ground-based weapons and an LPI data link for airborne platforms. For

F–117A Nighthawk stealth fighter

U.S. Air Force (Andy Dunaway)

while passive radar can perform detecting, locating, and tracking functions, it may also be able to perform target identification

SAMs with a command guidance mode, the passive radar could provide midcourse guidance via data link. In keeping with the passive radar system, a passive missile seeker—IR, EO, MMW, or perhaps multisensor—would likely be used for end-game guidance in order to complete the kill chain.

Threat Employment

A future adversary will look increasingly to counter the U.S. stealth advantage with passive radar, either as a stand-alone system or in conjunction with active surveillance radars. Passive radar is relatively cheap, and

its covert stance lends itself to a strategy of striking from concealment. Moreover, our most likely future opponent—an authoritarian state—already possesses tight control over its commercial media, a situation that requires a relatively small step to optimize broadcasting parameters for passive radar use.

This same adversary will build a passive multistatic receiver network in the VHF and UHF bands, blending the system into the vertical buildup of urban terrain.[50] In remote areas not served by media broadcast, the adversary may disperse a network of inexpensive throw-away transmitters to function as the surveillance area illuminators. He will integrate passive radar and other sensors for rapid, efficient command and control. It is likely that such an adversary will make efforts to develop or acquire passive SAMs with low observable launch signatures and procure and deploy high- and mid-altitude unmanned aerial vehicles—"missile trucks"—to deny flight at those altitudes.

Countering Passive Radar

Countering passive radar will prove difficult. What are the signs that an opponent is using passive radar? Forehand knowledge of the threat may provide an idea of general capabilities. Are friendly air forces losing aircraft to ground fire with little or no threat warning indications? With no radio frequency electronic intelligence available, locating the passive radar receivers will be challenging. Intelligence will face a difficult task of using indirect methods—human intelligence, ground surveillance, computer network operations, and nodal analysis—to collect on sparse information.

If the command and control nodes and receivers cannot be found, targeting planners could focus on destroying suspected transmitters—for example, FM radio, television, and HD television networks. Depending on their location and the potential for collateral damage, however, destroying these targets may result in undesirable strategic consequences, particularly in urban areas.

At the tactical level, friendly forces could employ reactive defenses against SAM launch and fly-out and conduct immediate counterattack of associated threat systems through electronic attack, standoff weapons, directed energy, or other means. This approach, however, would consume time and resources and would likely fail to achieve low- to mid-altitude air superiority.

Electronic warfare (EW) offers the potential to temporarily neutralize passive radar. Standoff noise jamming would have an effect, but because the location of the receivers is unknown, the jammer would need to emit across a wide sector, unavoidably reducing jamming signal density.[51]

North Vietnamese surface-to-air missile crew in front of SA–2 launcher

U.S. Air Force

Moreover, deception jamming may be of limited use against passive radar, also due to the unknown receiver location.[52] Other types of jamming, however, may prove highly effective. Overall, the lack of known threat location bolsters the argument for a robust EW capability that is integral to friendly multirole aircraft. Advocacy for or against a dedicated EW platform, however, is beyond the scope of this article.

Other means of countering passive radar include special operations and computer network attack. In the end, targeting passive radar systems may fall in the "too hard" category for limited warfare. Missile systems—mobile SAMs, UAVs, and even man-portable air defense systems—may be easier to find than passive radar. The adversary will likely deploy substantial passive air defense assets, and U.S. forces will face a long, tedious process of locating and attriting them.

Building new generations of stealth aircraft may be feasible, but efforts to improve stealth will eventually reach a point of diminishing returns. Advantages will grow more difficult and expensive to achieve as counterstealth technologies concurrently grow more advanced.

basic stealth techniques will be less effective than they once were against passive radar systems that benefit from bistatic geometry and the use of counterstealth waveforms

Implications

Passive radar has many implications for future U.S. military power. Stealth will continue to be a critical feature of tactical military aircraft, particularly as a defense against presently fielded weapons systems. As is evident in the continued proliferation of conventional radar SAMs and AAA, these threats are not going away any time soon.

Stealth airframes require long design and procurement processes, whereas avionics and software are more readily modified. This phenomenon is driving a philosophy in tactical aircraft design that basic stealth techniques are the critical solid foundation upon which the aircraft's more malleable offensive and defensive capabilities—sensors, weapons, and communications—are built. The concept of a layered defense will be critical to the survivability of stealth aircraft in the future.

Basic stealth techniques, however, will be much less effective than they once were against passive radar systems that benefit from bistatic geometry and the use of counterstealth waveforms. Increasingly, combatants will use passive radar and weapons systems to detect, acquire, track, and target aerial stealth platforms. Against such systems, stealth on its own will likely provide inadequate protection for manned aircraft, UAVs, and missiles.

This article posits that an ongoing race between stealth and counterstealth is emerging, in which technology will provide only incremental advantage to a combatant until a new counter is found. This assertion does not mean that there are no further opportunities to leverage stealth advantages, but that advances in stealth will be more *evolutionary* than *revolutionary*. The future of stealth and counterstealth will more closely resemble the technological one-upmanship that occurred during World War II and the Cold War than the order of magnitude advantage the United States enjoyed during the Gulf War and the two decades that have followed. Against a passive radar adversary, air superiority will likely only be achieved at significant cost. Forcible entry and amphibious operations will accordingly prove much more challenging. Once again, the defensive form of warfare asserts itself.

Recommendations

To best position the United States for the future, military strategists and operational planners must recognize the counter to U.S. stealth-based air-superiority that is currently unfolding, of which passive radar forms a core technology. These self-same leaders must take appropriate measures to ensure that the United States is not caught off guard by this impending shift in the technological landscape. The following recommendations are in order.

Endeavor to be a leader in the passive radar field. Arguably, the United States has marginalized the passive radar field due to a focus on conventional radar systems. The U.S. military must gain an understanding of passive radar, not merely theoretically, or with minor research and development projects, but with a dedicated effort. But why, one may ask, build a stealth counter when there is no immediate stealth peer competitor? The answer is that would-be competitors in the stealth arena are making a dedicated push to develop this technology. We cannot afford to spend billions on stealth, only to fail to thoroughly understand and counter rival systems. In support of this effort:

■ build collaboration between key industry and independent electronic engineers
■ increase prioritization of passive radar research and development
■ develop and field a passive radar system on a U.S. training range—as a training tool for U.S. stealth pilots and systems to test countermeasures and tactics and assess performance[53]

■ work hand in hand with key allies to develop shared capabilities
■ explore enhancing parallel technologies (such as disposable transmitters).

Develop methods of degrading enemy passive radar. In support of this effort:

■ focus on a multilevel EW capability against passive radar[54]
■ continue to develop layered defensive measures for aircraft and UAVs.

Prepare for military operations without air superiority. In support of this effort:

■ (again) develop passive radar, but in this case to deny enemy air superiority—future enemy stealth capabilities are ultimately not a matter of *if* but *when*
■ continue to integrate complementary piloted and unmanned system capabilities
■ plan and train to the contingency of military operations with only local air superiority or with air superiority largely denied.

Passive radar will play a critical role in future conflict. Ongoing advances in passive radar will deny traditional means of defeating enemy air defenses, make air superiority difficult to achieve against a passive radar opponent, and require changes in thinking to maintain U.S. power projection capability.

F–35 Lightning II flies over Eglin Air Force Base, future home of Joint Strike Fighter training facility

we cannot afford to spend billions on stealth, only to fail to thoroughly understand and counter rival systems

U.S. Air Force (Julianne Showalter)

Will the United States go forward to a future that resembles the past—one in which air superiority is gained only through a gradual and costly reduction of the enemy—or to a future that is worse than the past, in which the use of airpower is denied? Alternatively, can the United States develop advantageous capabilities in passive radar, as well as effective counters to it, and so maintain the airpower advantage? In this alternate future, shaped by awareness of the shifting paradigm posed by counterstealth technology, the United States can become a leader in the passive radar field and, in cooperation with partner nations, position itself to maintain air superiority, accomplish its military campaign objectives, and achieve its political goals. Which future will ours be? **JFQ**

NOTES

[1] Passive radar is also known variously as *passive coherent location*, *passive covert radar*, and *passive bistatic radar*.

[2] Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 358.

[3] Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (Washington, DC: Office of Air Force History, 1983), 15.

[4] "The Bomber Will Always Get Through," *Air Force Magazine* 91, no. 7 (July 2008), 72, available at <www.airforce-magazine.com/MagazineArchive/Documents/2008/July%202008/0708keeper.pdf>.

[5] Paul Howland, "Editorial: Passive Radar Systems," *IEEE Proceedings Radar, Sonar and Navigation* 152, no. 3 (2005), 105.

[6] Ibid.

[7] "The Radar Pages—Chain Home," available at <www.radarpages.co.uk/mob/ch/chainhome.htm>.

[8] Howland, 105.

[9] Passive radar is considered a subset of bistatic radar. Bistatic radar can also employ cooperative (friendly) or noncooperative (enemy) transmitters. The British Chain Home radar and other radar fences are examples of early bistatic radars that employed cooperative transmitters as dedicated parts of the system.

[10] Craig C. Hannah, *Striving for Air Superiority*, vol. 76, *The Tactical Air Command in Vietnam* (College Station: Texas A&M University Press, 2002), 87.

[11] "F–117A Nighthawk Factsheet," available at <www.air-attack.com/page/44/F-117A-Nighthawk.html>.

[12] "F–117 Site History," available at <www.f117reunion.org/f117_site_history.htm>.

[13] Eliot A. Cohen et al., eds., *Gulf War Air Power Survey* (Washington, DC: Department of the Air Force, 1993), 650, available at <www.airforcehistory.

hq.af.mil/Publications/fulltext/gulf_war_air_power_survey-vol5.pdf>.

[14] Ibid., 641.

[15] Benjamin S. Lambeth, "Kosovo and the Continuing SEAD Challenge," *Aerospace Power Journal* 16, no. 2 (Summer 2002), 12, available at <www.airpower.maxwell.af.mil/airchronicles/apj/apj02/sum02/sum02.pdf>.

[16] "Serb Discusses 1999 Downing of Stealth," available at <www.usatoday.com/news/world/2005-10-26-serb-stealth_x.htm>.

[17] Collin T. Ireton, "Filling the Stealth Gap and Enhancing Global Strike Task Force Operations," *Air and Space Power Journal* 20, no. 3 (2006), 69–76, available at <www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/Fal06.pdf>.

[18] In this article, the term *covert* means stealthy or hidden versus the sense of preserving deniability, as in *covert operation*, that is used in joint terminology. In the F–117 downing, covert SAM employment may have been accomplished through mobility, control of radar emissions, camouflage, and/or other considerations.

[19] Ireton, 71.

[20] B–2 and F–22 data are current as of April 2009. Joint Strike Fighter initial operational capability date is from Lieutenant General George J. Trautman III, USMC, *FY2009 Marine Aviation Plan: Supporting Our Most Lethal Asset* (Washington, DC: Headquarters United States Marine Corps, October 1, 2008), 6–3, available at <http://hqinet001.hqmc.usmc.mil/AVN/FY2009%20AVPLAN.pdf>.

[21] Christopher Bolkcom, *F–35 Lightning II Joint Strike Fighter (JSF) Program: Background, Status, and Issues* (Washington, DC: Congressional Research Service, February 17, 2009), 1, available at <www.fas.org/sgp/crs/weapons/RL30563.pdf>.

[22] "J–XX Stealthy Fighter Aircraft—(China stealth fighter)," January 3, 2008, available at <www.sinodefence.com/airforce/fighter/jxx.asp>. See also Mari Yamaguchi, "Japan to Build Stealth Fighter Jets by 2014," *Air Force Times*, December 10, 2007, available at <www.airforcetimes.com/news/2007/12/ap_japan_stealth_071207/>; and "Indo-Russian 5th Generation Fighter to Take Off by 2012," *The Times of India*, October 30, 2007.

[23] David Lynch, *Introduction to RF Stealth* (Raleigh, NC: SciTech, 2004), 3.

[24] Ibid., 8.

[25] Ibid., 46.

[26] Bill Sweetman, *Inside the Stealth Bomber* (Osceola, WI: MBI Publishing Co., 1999), 50.

[27] Nicholas J. Willis and H. Griffiths, *Advances in Bistatic Radar* (Raleigh, NC: SciTech, 2007), 95–97.

[28] Bernardo Malfitano, "Low-Observable 'Invisible' Airplanes: Radar Stealth," available at <www.airplanedesign.info/52-radar-stealth.htm>.

[29] Ibid.

[30] Eugene F. Knott, John F. Shaeffer, and Michael T. Tuley, *Radar Cross Section*, 2d ed. (Raleigh, NC: SciTech, 2003), 58–59.

[31] Lynch, 36.

[32] Willis and Griffiths, 95.

[33] "Nebo-SVU Surveillance Radar (Russian Federation)—Jane's Radar and Electronic Warfare Systems," available at <www.janes.com/extracts/extract/jrew/jrew0078.html>.

[34] "India Defense Consultants: What's Hot—Analysis of Recent Happenings," available at <www.indiadefence.com/Rums_visit.htm>.

[35] Gerrit Dedden, "SMART–L Multibeam Radar," European Radar Conference 2004.

[36] "The Leadership in Ukraine: Congressional Record: October 17, 2002 (Senate)," available at <http://frwebgate4.access.gpo.gov/cgi-bin/TEXTgate.cgi?WAISdocID=883061460628+1+1+0&WAISaction=retrieve>.

[37] Guy J. Farley and S.M. Gauthier, "Radar Technology Forecast for Land Warfare," April 2000, 8, available at <http://pubs.drdc.gc.ca/PDFS/zbd87/p514797.pdf>.

[38] Willis and Griffiths, 132.

[39] Howland, 105.

[40] Ibid.

[41] "Silent Sentry Fact Sheet," available at <www.lockheedmartin.com/data/assets/isgs/documents/SilentSentry.pdf>.

[42] "Super-Radar, Done Dirt Cheap," available at <www.businessweek.com/magazine/content/03_42/b3854113.htm>.

[43] "Homeland Alerter," available at <www.thalesraytheon.com/business-and-products/products/radars/passive-radars.html>.

[44] Willis and Griffiths, 105.

[45] Ibid., 135.

[46] Ibid., 107.

[47] Ibid., 135.

[48] Ibid.

[49] A.D. Lazarov and C.N. Minchev, "Three-Dimensional ISAR Image Reconstruction Technique with Multiple Receivers," Proceedings of 2d International Conference on Recent Advances in Space Technologies, June 2005, 692.

[50] Willis and Griffiths, 104.

[51] Ibid., 128.

[52] Ibid., 178.

[53] The author attributes the idea of a passive radar training range to Paul Wiedenhaefer, interview by author, Arlington, VA, April 15, 2009.

[54] By *multilevel*, the author means that electronic warfare should be considered tactically, operationally, and strategically. A multilevel electronic warfare (EW) strategy could include both dedicated and nondedicated EW platforms.

Mind Fitness

Improving Operational Effectiveness and Building Warrior Resilience

By ELIZABETH A. STANLEY *and* AMISHI P. JHA

Today's complex, fluid, and unpredictable operational environment both demands more from the military in terms of mission requirements *and* exposes troops to more stressors and potential trauma than ever before. On the one hand, situational awareness, mental agility, and adaptability are characteristics that the military wants to cultivate to succeed in such complex environments. In part, this complexity comes from the number

and nature of the different missions the military must concurrently fill. The military needs to be able to mix offensive, defensive, and stability operations conducted along multiple lines of operations, without the benefit of a clearly demarcated "frontline." Many Soldiers liken this complexity and unpredictability to "the faucet," that is, needing to adjust to situations that could change from cold to hot instantaneously. Moreover, Servicemembers must navigate morally ambiguous situations with balance and nonreactivity, while drawing on stores of cultural awareness to "win hearts and minds." Finally, these missions require that decisionmaking be pushed down to the most junior levels, as the doctrine of "distributed operations" makes clear. Such challenges require a tremendous amount of attentional capacity, self-awareness, and situational awareness.

On the other hand, because of the stressors and challenges of this operating

Marines fire during operations in Helmand Province, Afghanistan

environment, the U.S. military is showing signs of strain. In 2007, the Army experienced its highest desertion rate since 1980, an 80 percent increase since the United States invaded Iraq in 2003. The warning signs of future retention problems are increasingly apparent: suicide, post-traumatic stress disorder (PTSD), substance abuse, divorce, domestic violence, and murder within the force are on the rise. Recent attention has focused on the growing number of suicides, with the Marine Corps experiencing more suicides in 2008 than since the war began and the Army logging its highest monthly total in January 2009 since it began counting in 1980. Not surprisingly, PTSD rates are highest among Iraq and Afghanistan veterans who saw extensive combat (28 percent). However, military health care officials are seeing a spectrum of psychological issues, even among those without much combat experience. Various surveys provide a range of estimates, with up to half of returning National Guard and Reservists, 38 percent of Soldiers, and 31 percent of Marines reporting mental health problems.[1]

It is no wonder. Troops manning checkpoints or on patrol have to make split-second decisions on when to use lethal force, and veterans say fear often clouded their judgment. As Army Sergeant Dustin Flatt put it, "The second you left the gate of your base, you were always worried. You were constantly watchful for IEDs [improvised explosive devices]. . . . If you've been in firefights earlier that day or week, you're even more stressed and insecure to a point where you are almost trigger-happy."[2] The perpetual uncertainty is mentally exhausting and physically debilitating, and often its effects linger even after returning home.

What can be done to enhance the military's capacities to operate in such complex environments while simultaneously protecting against the stressors inherent in them? This article proposes a new training program for both improving operational effectiveness and building resilience to the stressors of deployment: Mindfulness-based Mind Fitness Training (MMFT, pronounced M-Fit). This program includes techniques and exercises that previous research in civilians has demonstrated to be effective at enhancing the capacities central to mind fitness, such as

mental agility, emotion regulation, attention, and situational awareness. Importantly, these exercises appear to achieve improvements in mind fitness by changing brain structure and function so that brain processes are more efficient. Our pilot research, conducted in pre-deployment Marine Reservists, suggests that MMFT is similarly successful at bolstering mind fitness and building resilience against stressors in a military cohort. Drawing on the well-documented theory of neuroplasticity, which asserts that experience changes the brain, this article argues that mind fitness training could complement the military's existing stress inoculation training by developing skills to promote resilience against stress and trauma so that warriors can execute their missions more effectively.

Stress Can Degrade Performance

A variety of research indicates that harmful conditions such as chronic stress, neglect, and abuse can produce harmful changes in the brain.[3] Stress is produced by real or imagined events that are perceived to threaten an individual's physical and mental

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pilot research suggests that Mindfulness-based Mind Fitness Training is successful at bolstering mind fitness and building resilience against stressors in a military cohort

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well-being. Today, stress is commonly understood to mean external events or circumstances, and as a result, we tend to think of stress as something *external* to us. However, stress is actually a *perceived*, *internal* response. The right amount of stress will allow a decisionmaker to function at peak performance. However, excessive stress has biological and psychological consequences that reduce the capacity to process new information and learn. Stress may also bias decisionmaking more toward reactive, unconscious emotional choices.

Recent empirical research about decisionmaking in stressful military environments demonstrates that trauma and stress lead to deficits in cognitive functioning. One

large study of Army troops found that Soldiers who served in Iraq were highly likely to show lapses in memory and an ability to focus, a deficit that often persisted more than 2 months after they arrived home.[4] In the study, 654 Soldiers who deployed to Iraq between April 2003 and May 2005 did significantly worse in tasks that measured spatial memory, verbal ability, and the ability to focus than 307 Soldiers who had not deployed. In contrast, the Soldiers who had deployed outperformed those who had not in terms of quick reaction time (for example, how long it takes to spot a computer icon and react). In effect, the deployed Soldiers' brains built the capacity for quick reaction, a function more necessary for survival in Iraq, while experiencing degradation in other mental capacities.

In another study, Soldiers who screened positive for mental health problems after returning home were up to three times more likely to report having engaged in unethical behavior while deployed.[5] Such behavior, including unnecessarily damaging private property or insulting or physically harming noncombatants, is obviously counterproductive to winning the confidence of the local population. This finding suggests a strong link between the negative effects of stress, which degrades Soldiers' capacity to manage their own emotions and thereby control impulsive, reactive behavior, and a decrease in their ability to perform their mission effectively.

Other studies of military environments have found substantial degradation in cognitive performance when subjects experience sleep deprivation and other environmental stressors. One recent study of sleep deprivation among Navy SEALs and Army Rangers during a field training exercise demonstrated that the lack of sleep affected troops so badly that after a week they performed worse on cognitive tests than if they were sedated or legally drunk. In this study, the SEALs and Rangers showed severe degradation in reaction time, vigilance, visual pattern recognition, short-term memory, learning, and grammatical reasoning skills.[6]

Another group of studies examined more than 530 Soldiers, Sailors, and pilots during military survival training, including time in mock prisoner of war camps, to prepare them to withstand the mental and physical stresses of capture. In these studies, exposure to acute stressors resulted in symptoms of dissociation (alterations of

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one's perception of body, environment, and the passage of time), problem-solving deficits (as measured by objectively assessed military performance), and significant inaccuracies in working memory and spatial memory (as measured by eyewitness identification tests).[7] These findings corroborated with other studies that found multistressor environments lead to substantial degradation of executive control capacity and cognitive skills, and such degradation has been linked to battlefield errors, such as friendly fire incidents and collateral damage.[8]

Mind Fitness Training and Performance

Optimal combat readiness requires three things:

- mission essential knowledge and skills
- physical fitness
- mind fitness.

All three components are crucial for equipping warriors to handle the challenges and stressors of deployment. The military devotes substantial resources to the first two categories, both in terms of funding and time on the training schedule. However, there is virtually no focus on mind fitness training today. The Army's Battlemind program is a first effort to raise Soldiers' awareness of the psychological health issues associated with deployment, but Battlemind mostly occurs after Soldiers

return home and provides no skills training. Instead, it introduces them to the cognitive and psychological effects of being deployed, provides psychological debriefing sessions, and helps them identify warning signs for when to seek help. In short, the military generally lacks proactive mind fitness training programs designed to give warriors skills that optimize performance and protect against the stressors of deployment.

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Most military training is "stress inoculation training" because it exposes and habituates warriors to the kinds of stressors they will face while deployed. Paradoxically, however, as the previous section demonstrates, stress inoculation training depletes warriors' executive control capacity—that is, the mental capacity that allows us to focus on demanding cognitive tasks and/or emotionally challenging situations. As we explain below, mind fitness training may counteract this cognitive degradation that results from stress inoculation training. Therefore, it could

complement existing military predeployment training, as it helps warriors to perceive and relate to deployment stressors differently. In other words, mind fitness training may provide "mental armor" to protect troops as they prepare for deployment and experience the stressors of deployment itself.

Just as stress and trauma can functionally and structurally change the brain, so too can training, practice, and expertise. The brain of an expert—such as surgeon, taxi driver, or musician—is functionally and structurally different from that of a nonexpert. In one study of London cab drivers, for example, researchers found that cab drivers have larger hippocampi than matched controls and that the longer an individual worked as a cab driver, the larger the hippocampus. The hippocampus is the brain region that controls conscious memory, obviously needed to navigate London's circuitous streets. These differences in hippocampus size were the result of experience and training as a cab driver, not of preexisting differences in the hippocampal structure.[9]

The London cab driver study highlights the well-documented theory of neuroplasticity, which states that experience changes the brain.[10] Areas of the brain may shrink or expand—become more or less functional—based on experience. In other words, the brain, like the rest of the body, builds the "muscles" it uses most, sometimes at the expense of other abilities. This concept is something athletes, musicians, and martial artists have known for a long time: with physical exercise and repetition of certain body movements, the body becomes stronger, more efficient, and better able to perform those movements with ease. A similar process can occur with the brain: with the engagement and repetition of certain mental processes, the brain becomes more efficient at those processes. This improved efficiency arises because any time we perform a physical or mental task, the brain regions that serve task-related functions show increased neuronal activity. Over time, as we choose to build a new mental skill, the repeated engagement of the brain regions supporting that skill creates a more efficient pattern of neural activity, for example, by rearranging structural connections between brain cells involved in that skill. In other words, experience and training can lead to functional and structural reorganization of the brain.

Secretary of Defense reenlists Soldiers at Forward Operating Base Airborne, Afghanistan

U.S. Air Force (Jerry Morrison)

Thus, there is a profound parallel between physical fitness and mind fitness. Athletes know that with repetition, physical fitness exercises can produce training-specific muscular, respiratory, and cardiovascular changes in the body. They know that specific training will correspond to specific benefits and promote better recovery from specific injuries. For example, sprints can build fast-twitch muscles, while longer runs can teach the body to burn fat instead of glucose. Similarly, specific mental exercises may allow the mind to become more "fit" and better protected against certain types of challenges by neuroplastic changes in the brain.

Mind fitness in today's operational environment entails having a mind with highly efficient capacities for mental agility, emotional regulation, attention, and situational awareness (of self, others, and the wider environment). Just as physical fitness corresponds to specific enhancements in the body, mind fitness may correspond to enhancements in specific brain structures and functions that support these capacities. And, like physical fitness, mind fitness may be protective: it may build resiliency and lead to faster recovery from cognitive depletion and psychological stress. We propose that mind fitness can be maintained even in high-demand and high-stress contexts by regularly engaging in certain mental exercises. These exercises engage and improve core mental processes, such as working memory capacity, which lead to a more mentally agile, emotionally regulated, attentive, and situationally aware mode of functioning.

This scientific understanding is starting to be recognized and applied with many recent research studies and popular books describing training programs to bolster mind fitness.[11] These training techniques have existed for thousands of years, originating in Eastern spiritual traditions. In recent decades, they have been adapted for secular use, including in medical and mental health settings, corporations, prisons, and elementary schools. The most common and well-validated training program is mindfulness-based stress reduction (MBSR); more than 250 U.S. hospitals offer MBSR programs, and more than 50 research articles document its utility in many domains.[12]

Mind fitness can be enhanced through a variety of training techniques, but the foundational skill cultivated in both MBSR and our MMFT program is called "mindfulness."

Mindfulness has been described as a process of "bringing one's attention to the present experience on a moment-by-moment basis"[13] and as "paying attention in a particular way, on purpose, in the present moment and nonjudgmentally."[14] Mindfulness differs from a more conceptual mode of processing information, which is often the mind's default way of perceiving and cognizing. In other words, paying attention is not the same thing as thinking, although we often equate the two.

> mindfulness *has been described as a process of "bringing one's attention to the present experience on a moment-by-moment basis"*

A growing body of empirical scientific evidence supports the efficacy of mindfulness-based interventions. Clinical studies demonstrate that civilian patients who participated in such programs saw improvement in many physical and psychological conditions and reported a decrease in mood disturbance from, and stress related to, these conditions. Similarly, numerous studies have documented how mindfulness training positively alters emotional experience by reducing negative mood as well as improving positive mood and well-being.[15] Mindfulness training has also been shown to increase tolerance of unpleasant physical states, such as pain,[16] produce brain changes consistent with more effective handling of emotions under stress, and increase immune functioning.[17] Finally, many studies have shown that mindfulness

U.S. Marine Corps (Pete Thibodeau)

Marines wait to leave temporary patrol base in Afghanistan

training improves different aspects of attention, which is the ability to remain focused on task-relevant information while filtering out distracting or irrelevant information.[18]

While this research draws from civilian populations, its findings clearly have implications in the military context. These techniques have already been extended to war veterans with PTSD, and preliminary results from this work suggest a reduction in symptoms.[19] In addition, mindfulness training could help optimize warrior performance by cultivating competencies critical for the modern battlefield, such as improved self-regulation, better attentional skills, and enhanced situational awareness.

Working Memory Capacity and Mental Armor

Mind fitness, as we have operationalized it here, comprises mental faculties critical for military effectiveness, such as mental agility, emotion regulation, attention, and situational awareness. Interestingly, the cognitive neuroscience construct of "working memory capacity" (WMC) has also been linked to these faculties. WMC is the ability to maintain relevant information online while resisting interference from irrelevant information. Growing evidence suggests that working memory capacity is tied to the ability to engage in abstract problem-solving and counterfactual thinking. Recently, neuroscientists report that in addition to these "cold" cognitive processes requiring a high degree of mental flexibility and agility, "hot" emotional regulation processes also rely on WMC.

While individuals differ in their baseline WMC, everyone's WMC can be fatigued and degraded after engaging in highly demanding cognitive or emotional tasks.[20] Conversely, WMC can be improved and strengthened through training. Studies have shown that individuals with higher WMC have better attentional skills, abstract problem-solving skills, and general fluid intelligence (that is, the ability to use rather than simply know facts). They also suffer less from emotionally intrusive thoughts and are more capable of suppressing or reappraising emotions when required. In contrast, individuals with lower WMC have poorer academic achievement, lower standardized test scores, and more episodes of mind-wandering. They are more likely to suffer from PTSD, anxiety disorders, and substance abuse, and are more likely to exhibit prejudicial behavior toward

personally disliked groups.[21] Thus, WMC corresponds to an individual's success at willfully guiding behavior while overcoming cognitive or emotional distractions or impulsive tendencies.

Warriors with higher WMC are more likely to have better mind fitness and thus be better equipped for responding to the cognitive and emotional challenges that come from preparing for and experiencing deployment. These warriors are also more likely to maintain an effective level of performance when confronted by obstacles, setbacks, and distractions, and return to their baseline functioning after being exposed to stressors or traumatic experiences. Nonetheless, all warriors (even those with higher WMC) are likely to suffer from some degree of WMC degradation through the deployment cycle because the stressors of this time period are so depleting of cognitive and emotional resources. Moreover, an individual's position within the military command structure may exacerbate the problem because recent evidence suggests that being lower in a power hierarchy reduces WMC.[22]

Thus, an important component of optimal combat readiness should be to maintain or increase baseline levels of WMC, despite the increase in stressors over the deployment cycle. Because WMC can be strengthened through training, performance on both cold cognitive processes and hot emotional regulation can be enhanced. Maintaining or enhancing warriors' baseline levels of WMC could have cascading effects for effective decisionmaking, complex problem-solving, and emotional regulation processes, all of which are heavily taxed over the deployment cycle and are crucial for mission effectiveness. In other words, training to improve WMC may provide "mental armor" to protect against impending deployment-related degradation in mind fitness.

MMFT

Mindfulness-based Mind Fitness Training is a 24-hour course that is taught over 8 weeks in groups of 20 to 25 Servicemembers. MMFT is based on the well-established MBSR course known to improve attentional functioning and reduce the negative effects of stress. However, MMFT is tailored for the military *predeployment* training cycle, with real-world examples from the counterinsurgency environment that show how mind fitness skills can enhance performance and

mission accomplishment. During the course, troops learn about the stress reaction cycle and its effects on the mind and body. They also learn how mind fitness training can boost resilience to stress. Most importantly, and unlike the Army's Battlemind training, MMFT provides skills training through mind fitness exercises. These exercises are practiced 30 minutes a day. Some exercises build concentration by focusing on one object of attention, such as a particular body sensation. Others build situational awareness and nonreactivity through wider attention on internal and external stimuli. And some exercises use focused attention to reregulate physiological and psychological symptoms that develop from traumatic or stressful experiences. The exercises are incorporated into physical training and other mission essential tasks and completed during the duty day, in groups and/or individually. Thus, an important component of the course is engaging in MMFT training exercises each day.

We recently conducted a pilot study of MMFT with a detachment of 31 Marine Reservists, who received the training before they deployed to Iraq. (In March 2009, they returned home from this deployment.) While some Marines resisted the effort required by the training, the initial exposure was relatively

> *an important component of optimal combat readiness should be to maintain or increase baseline levels of working memory capacity*

positive. The entire detachment received training, and MMFT's didactic information and group practices helped to socialize the concept. Once deployed, the Marines personalized their approach to the MMFT exercises, differing in how they incorporated them into their daily routines. From their anecdotal reports during and after the deployment, it appears some Marines continued the exercises during their down time, some incorporated them into their physical fitness regimes, some employed them as part of their premission rehearsals, and some employed them to keep themselves alert and focused while on missions. Many Marines reported using the exercises at bedtime, which they said helped them to quiet their minds, fall asleep faster, and sleep more soundly.

Before and after MMFT training (before they deployed), the Marines participated in a battery of behavioral tasks to measure their cognitive capabilities. We had predicted that the increase in stressors during predeployment training would degrade the Marines' cognitive performance. However, statistical analysis shows that the Marines who spent more time engaging in mind fitness exercises (on average, 10 hours outside of class) saw an improvement in their cognitive performance compared to Marines who spent less time engaging in the exercises (on average, 2 hours outside of class).[23] Specifically, despite the real increase in stressors during the predeployment period, the Marines who engaged in more mind fitness training maintained the same perceived stress level and preserved or even improved their working memory capacity over their initial baseline.

In contrast, the Marines who engaged in less mind fitness training experienced an increase in their perceived stress levels and the predicted decrease in their working memory capacity. This degradation in their WMC produced test scores of working memory capacity on par with populations that have suffered psychological injuries such as PTSD and major depression.[24] It is important to note that this degradation in

working memory capacity occurred *before* deployment, and thus does not reflect the additional stressors of the deployment itself. The apparent costs of the predeployment context are striking, given that the intention of the predeployment training is to prepare Servicemembers physically, emotionally, and cognitively for the stressors of deployment. Our findings highlight the potential importance of providing mind fitness training within the predeployment time period to buffer against WMC depletion.

While we have not yet fully analyzed the data from their postdeployment cognitive behavioral testing, it is clear from a postdeployment survey that the Marines continued to engage in mind fitness training and/or use the skills they learned while deployed. Sixteen percent of the Marines said that they "practiced regularly while deployed," while 35 percent gave neutral responses, and 48 percent said they did not practice regularly. In contrast, 26 percent of the Marines said that they practiced mind fitness exercises "after particularly stressful or traumatic experiences," while 35 percent gave neutral responses and 38 percent said they did not. Perhaps more importantly, 54 percent of the Marines said that they "used the skills learned in this course downrange," while 27 percent

gave neutral responses, and the rest said they did not use MMFT skills while deployed.

Thus, while only 16 percent practiced mind fitness exercises regularly during the deployment, more than a quarter used the practices to reregulate themselves after stressful experiences and more than half used MMFT skills during the deployment. These findings suggest the need for adding more structured mind fitness exercise sessions into a unit's daily schedule during deployment. They also highlight again the parallel to physical fitness: just as building muscle requires repetitive physical exercise, improving cognitive and emotional performance requires engaging in mind fitness exercises in a sustained, disciplined manner. While mind fitness skills are quickly and easily taught, they require ongoing commitment to develop and strengthen over time.

We acknowledge several limitations to this pilot study. Our cohort was a convenience sample, consisting of a detachment that agreed to receive training. There was no waitlist or active control group, although we are currently gathering control group data for further analysis. We think this weakness was partially mitigated by our use of well-validated cognitive behavioral instruments shown to be stable over time. This minimizes

Virtual reality software that recreates traumatic situations in safe environment is used in therapy for Servicemembers with post-traumatic stress disorder

U.S. Air Force (Lance Cheung)

the possibility that the observed changes simply reflected measurement artifact. Nonetheless, the fact that all Marines started with similar WMC scores and that changes in their scores over time correlate, in a statistically significant way, with the amount of time spent engaging in mind fitness exercises highlights the need for further study. To this end, we have recently received funding from the Department of Defense to examine how mind fitness training can build resilience and combat readiness among Army Soldiers. The first study will compare MMFT to the Army's Battlemind program in a predeployment context. The second study will compare different versions of MMFT in a nondeployment context, to see which version is most effective at producing optimal cognitive and psychological performance among warriors.

As this article has shown, mind fitness training can immunize against stress by buffering the cognitive degradation of stress inoculation training and by permitting more adaptive responses to and interpretation of stressors. Mind fitness training can also enhance warrior performance by cultivating competencies critical for today's security environment. Finally, beyond its immediate effects for managing stress and enhancing mission performance, mind fitness training is protective: it builds resiliency and leads to faster recovery from cognitive degradation and psychological injury. While warriors may choose to engage in mind fitness exercises to optimize their performance downrange, the protective effects will still be accruing—likely leading to a decrease in psychological injury upon returning home. As a result, mind fitness training could reduce the number of warriors in need of professional help and thereby reduce caregiver burnout among Armed Forces' chaplains and medical and mental health professionals. In other words, mind fitness training's beneficial effects could continue long after the deployment is over, increasing the likelihood that warriors will be ready, willing, and able to deploy again when needed. **JFQ**

NOTES

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U.S. and French servicemembers set out on survival training hike in Geggade Desert, Djibouti

U.S. Air Force (Joe Zuccaro)

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Customs and Border Protection officer checks documents for entry to the United States

The Department of Homeland Security
An Organization in Transition

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On November 25, 2002, the Homeland Security Act of 2002 became law, and 60 days later, the Department of Homeland Security (DHS) became the newest Cabinet-level organization in the U.S. Government. Over the following 5 months, DHS merged elements of 22 agencies from 9 departments into its structure.[1] In the nearly 7 years since, the Department has undergone one major internal reorganization (the 2005 Second Stage Review), two externally driven reorganizations (prompted by the Intelligence Reform and Terrorism Prevention Act of 2004 and the Post-Katrina Emergency Management Reform Act of 2006), and several smaller, agency-specific reorganizations.

The transition from the George W. Bush administration to the Barack Obama administration provides an opportunity to review these changes and to examine the extent to which it would be advisable to make further modifications to DHS. In that spirit, this article represents a synthesis of a series of 19 interviews with current and former career and noncareer DHS officials, staff members of both the House and Senate Homeland Security Committees, academic observers of the Department, and staff members who supported the National Commission on Terrorist Attacks Upon the United States (the 9/11 Commission). The 19 interviewees made suggestions for the Department in four areas: changes to policy, modifications to oversight, management and integration improvements, and areas in need of additional focus.

Policy

Interviewees had few policy-related suggestions for the Obama administration. There

was, however, one policy issue that many interviewees felt warranted significant attention: immigration.

The key test of a successful immigration reform package is how well it addresses several interrelated issues:

- provision of temporary work visas
- path to citizenship for noncitizens currently illegally working in the United States
- means by which the United States will enhance border control
- expansion (numbers and eligibility) of the work visa program
- establishment of a reliable system for employers to validate the citizenship (or visa status) of prospective employees
- provision of work and training opportunities for current U.S. citizens.

This list is similar to those that underpinned President Bush's 2006 immigration reform proposal—unsurprisingly, perhaps, neither the numbers of migrants nor the Nation's interest in addressing their presence has changed significantly. The United States still has between 12 and 20 million illegal aliens in the country, far too many to have a "reasonable expectation [to] send . . . back home." The United States still has an interest in welcoming and retaining immigrants (particularly those who are smart, creative, and industrious). And the United States still has an interest in promoting the employment of citizens over noncitizens for both high- and low-skill jobs.

The consensus view of the interviewees is that a reform package would consist of three elements, each requiring positive and negative inducements to change both individual and corporate behavior. The first of those elements is enhancing penalties for employers who knowingly violate the provisions of the Immigration Reform and Control Act of 1986 as they apply to hiring illegal immigrants. Establishing a straightforward safe-haven process for validating worker credentials would complement those enhanced penalties.

The second element is facilitating a path to citizenship for illegal immigrants who have been in the United States for a period of years and have been net contributors to the Nation's well-being. Complementing this element would be some form of noncriminal penalty (a requirement for community service or a fee) in order for the program to avoid the "amnesty" label. The third element is enhancing border control efforts aimed at stopping illegal migration, a task that would be linked to easing temporary and permanent work visa requirements. By shifting the incentives of immigrants from attempting illegal crossings to making legal crossings at designated points, the Federal Government would facilitate its task of focusing screening efforts on people with suspect backgrounds.

DHS should have three roles in the development of this policy. First, it should conduct outreach efforts to state and local governments to gather input on how best to execute this policy. State and local governments bear the brunt of illegal immigration, and their buy-in would be vital to enacting meaningful legislation. Secretary Janet Napolitano's engagement is critical in this phase because of her credibility, by virtue of her experience as a border state governor, with these constituencies.[2]

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The second element should be providing the White House with input on the feasibility of implementing the policy. The final role should be publicly discussing DHS implementation requirements under the legislation. However, DHS should not have any public role in discussing the policy elements of reform legislation. After the Bush administration designated Michael Chertoff as its point-person for immigration reform, Secretary Chertoff's lobbying efforts hurt his credibility with the Federal legislative branch on a range of other issues because immigration reform became so politicized. When making comments on this subject, DHS should also take care not to overemphasize border control as either a counterterrorism issue or an antidote to illegal immigration. With a 1,969-mile southern border that runs through both cities and mountains, border control cannot be a 100-percent success story, and DHS should be careful to not imply that it could be.

Oversight

Interviewees made a number of comments touching on oversight. This article addresses only two of these recommendations: streamlining oversight of DHS, and merging the Homeland Security Council (HSC) with the National Security Council (NSC).

Congressional Oversight. The most important issue facing DHS is congressional oversight, but the Department has very little influence on it. Groups as diverse as the 9/11 Commission, Council for Excellence in Government, Homeland Security Advisory Council, National Academy of Public Administration, and Center for Strategic and International Studies have identified streamlining congressional oversight as one of the most difficult, and most important, issues for DHS, and many interviewees agreed.[3]

Streamlining oversight would enhance unity of effort for DHS; having between 79 and 86 committees and subcommittees (depending on which organization is counting) claiming jurisdiction has led to no committee providing effective supervision. This aspect is particularly important in that DHS spends over $35 billion and provides over $3 billion more in grants each year based on a risk assessment process that relies on intuition far more than on hard data. It is a situation that begs for better, not more, oversight. Streamlining oversight would also provide for more effective management of the organization; having senior management testify frequently to a wide variety of committees is a significant drain on management time and attention.

Congress partially implemented the oversight portion of the 9/11 Commission's recommendations in 2005, but has found the politics of implementing the balance of those recommendations daunting. DHS has a number of activities not related to homeland security—such as providing aids to navigation—embedded in it, and these activities are important to many Members of Congress who are on neither the House nor the Senate Homeland Security Committees.

One partial solution is to expand the jurisdiction and membership of the Homeland Security Committees at the expense of other committees. A useful model would be the Department of Defense oversight structure in which, despite having bases in almost every district and a budget 13 times that of DHS, only 36 committees and subcommittees provide oversight.[4] Such a change would reduce conflicts in guidance from appropriators and authorizers, provide for better defined requirements, enhance relations between branches of government,

and improve the effectiveness of acquisition programs.[5] This is one of the few areas where the important question is not, "What is best for the Nation?" Here, the important question is, "How do we make the politics work?"

Homeland Security Council. Established by Presidential directive on October 28, 2001, the HSC is a stepchild of the NSC, and its function is to "ensure coordination of all homeland security–related activities among executive departments and agencies and promote the effective development and implementation of all homeland security policies."[6] As one may expect from its origin, its membership has significant overlap with that of the NSC: 11 of the NSC's 15 members/statutory advisors/substantive invitees are also on the HSC.

There is a considerable degree of symmetry between its role and that of the NSC, which is charged to "coordinate executive Departments and agencies in the effective development and implementation of those national security policies,"[7] including the defense of the Nation. The very fact that the NSC jointly administers 3 of the HSC's 10 policy coordinating committees illustrates the degree of overlap between the two organizations' roles and membership.[8]

Interviewees who commented upon the HSC supported merging the organization into the NSC. They believe that the concept of national security includes homeland security and that addressing terrorist threats will never again be the second-tier issue it was before September 11, 2001. Accordingly, they recommend that the Obama administration return the functionality and personnel of the HSC to the NSC, add more departmental representatives as full NSC members, build a strategic planning capability at the NSC, and

expand the NSC long-term issue integration staff. In addition to retaining its current capabilities, this staff should possess the capacity to manage integration issues, should be familiar with the capabilities of DHS, and must be capable of writing a strategy with state and local involvement.

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Management and Integration

Interviewees suggested changes in four areas to enhance cross-component management and integration. These recommendations focused on meshing the needs of each of the components with those of the Department's senior leadership. All interviewees who commented in this area were aware that one impact of most of these changes would be to slow the decisionmaking process, but they believed that the same forces that would produce delays would also result in a better performing Department.

Under Secretary of Policy. Because DHS began as a merger of 22 agencies, with none of them dominating the integration process, it started without a common purpose to unite its components. That lack of a singular raison d'être has contributed to situations where components have been willing to "reinterpret" guidance from the Secretary.

Having a headquarters that functioned more as an umbrella than a command element contributed to their ability to do so.

One approach to addressing this issue would be to increase the influence of the Office of Policy by elevating the Assistant Secretary for Policy to an Under Secretary position while also selecting an Under Secretary for Policy who has the confidence of, and chemistry with, both the White House and the Secretary. This officer would require the staff and the judgment to focus only on the most critical issues. The combination of these changes, each necessary but not sufficient on its own, would set the preconditions for the Office of Policy to monitor and enforce the Secretary's guidance to the components.

Risk Management Link to Budget. The next integration-related issue upon which interviewees commented was the absence of a link between risk management and budget development. A linkage between the two functions would have two major impacts: it would provide the Secretary with an additional vector for unifying the Department's efforts, and it would improve the connection between risk management and policy.

As one interviewee noted, risk management is at the heart of all the Department does. Inherent in every decision is a prioritization, implicit or explicit, of the risks DHS chooses to address. While some of the threats facing the Nation are knowable (for example, floods cause an average of $8 billion worth of damage every year), others—particularly terrorist threats—are inestimable. The two questions that then face DHS are what threats to focus on, and how to address them. The current approach

DHS (Barry Bahler)

Homeland Security Secretary visits Federal Emergency Management Agency headquarters (left) and receives briefing at DHS on flooding in North Dakota and Minnesota (above)

is for DHS to focus on the large-scale threats, while providing grants and technical support to state and local governments to address the small-scale ones. This approach is aligned with the foci of the various organizations involved in homeland security. The Federal Government feels a need to concentrate efforts on large-scale events, while local governments prefer to focus on the small-scale hazards they deal with on a regular basis.

That approach leaves DHS in a quandary as to how to prioritize the large-scale threats it needs to counter. The Secretary would be well advised to have a portfolio analysis performed to inform those choices. Without such an analysis, the Secretary is working on intuition. This all-hazards portfolio analysis should be based on a simple model and should be tailored to meet the Secretary's stated needs.

Moving primary sponsorship of the Homeland Security Institute[9] from the Science and Technology Directorate to the Office of Policy would give the Office of the Secretary direct control over the analytical capacity needed to develop a risk portfolio analysis.[10] Such an analysis would inform the Secretary's Interagency Planning Guidance, which the components use as a roadmap to set budgetary priorities, thereby expanding the connection between the Secretary's priorities and agency budgets.

Information Technology Acquisition/Integration. One of the most effective ways that the Secretary can ensure intradepartmental coordination is through the acquisition process, and the largest element of acquisitions (consuming about 10 percent of the DHS total budget) is information technology (IT). Because IT procurement is a technically complex and detail-driven subject, senior leadership tends not to focus on it, which is a significant error.[11] The devolution of responsibility to component procurement organizations results in projects that meet the needs of individual agencies but not those of the

Over the past 2 years, DHS has made significant improvements to the IT acquisition process, particularly on the chief information officer (CIO) front. The DHS CIO now has increased authorities; DHS has an IT lifecycle management process; and the IT project review process, with levels of scrutiny dependent on project cost, has become effective.

With respect to improving IT acquisition staff capabilities, DHS has not been as successful. The components maintain their own procurement organizations that work with legacy systems, and the Department has not assigned enough people, dedicated enough leadership attention, or allowed for enough planning time to execute IT acquisitions well. One congressional staff member

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Department as a whole. In situations where a lead component has opened the development of project requirements to other components, it has occasionally begun too late in the acquisition process to avoid substantial cost and schedule overruns.

believes that, as a direct result of these factors, DHS has not had any unqualified successes in regard to major IT acquisitions. Others differ, citing the success DHS has had executing the U.S. Visitor and Immigrant Status Indicator Technology program as a gauge.

U.S. Department of Homeland Security
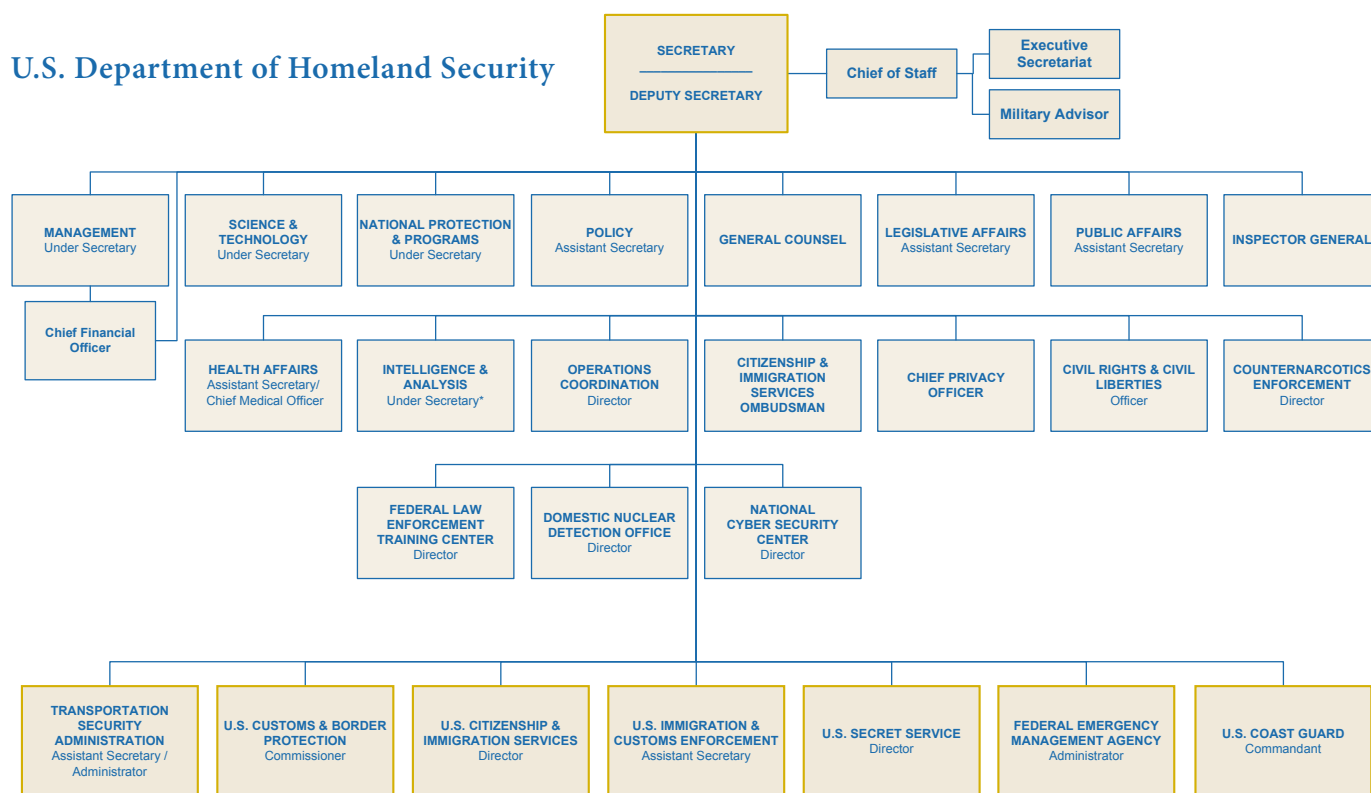
*Under Secretary for Intelligence and Analysis title created by Public Law 110-53, August 3, 2007
Approved March 20, 2008

IT projects have a high impact on Department-wide performance because the Department as a whole has a requirement to know as much as possible about those whom it screens.[12] Without a CIO who enforces both the use of open standards and the execution of a detailed, time-consuming, cross-departmental requirements-development phase, DHS either builds multiple, similar, incompatible IT structures at an increased cost or changes requirements at a late date and pays for those changes through increased cost, lengthened program schedule, and decreased project performance.

Federal Emergency Management Agency. The Federal Emergency Management Agency's (FEMA's) proper location in the Federal bureaucracy has been a topic of considerable discussion for almost as long as it has been a part of DHS. Broadly speaking,

CBP (James R. Tourtellotte)

Customs and Border Protection officer directs truck with seaport container to inspection area

there are two schools of thought regarding the proper structural place for FEMA. One school, led by former FEMA Administrator James Lee Witt, believes that the agency should return to its Clinton administration–era position of an independent agency reporting directly to the President. A direct reporting relationship between FEMA and the President would give the agency additional bureaucratic clout and restore some of the public confidence it lost after its response to Hurricane Katrina.

Moving FEMA out of DHS has disadvantages that President Barack Obama must weigh against these advantages. It would reduce the number of personnel the agency could immediately call upon during an

emergency—as a stand-alone organization, it would have access to 2,600 full-time employees and 4,000 standby employees rather than the 162,000 members of DHS.[13] Similarly, a stand-alone FEMA would not have the bureaucratic heft that its present parent, a full-scale department, has when coordinating a response to an emergency.

Interviewee observations about a potential FEMA move took three forms: the impact on DHS, impact on the President, and impact on the Nation. From a DHS perspective, a FEMA move would reduce the conceptual viability of DHS, which is currently a full-spectrum homeland security organization; it addresses prevention, protection, response, recovery, and preparedness. Without the responsibility to execute FEMA's response/recovery functions, DHS would lose its ability to execute its integrative function, and that

loss would invite the Departments of Defense and Justice to "encroach" on DHS prevention and protection functions.

From a Presidential perspective, it is useful to have someone, in this case a Secretary, act as political insulation in the event a response goes poorly. As one noncareer official framed the issue, "Does any politician really want to have the head of FEMA as a direct report?" Finally, at a national level, requiring yet another reorganization would jeopardize current reforms that appear to be paying dividends. Since early 2007, Governors have begun complementing FEMA's response to emergencies (for example, the wildfires in California and the hurricanes in Texas). They like FEMA's "forward leaning" posture and

its eagerness to respond to emergencies—its desire to do more than write checks in an event's aftermath. While they still blame FEMA for communications breakdowns at the local level, they understand that those breakdowns are, for the most part, the Governors' issues to address.

Interviewees had some recommendations for FEMA. Two thought that FEMA authorities under the National Response Framework were insufficient and that the agency needed to be able to execute tactical control over other agencies when necessary. Another thought that FEMA needed to build a deliberate planning capacity to complement its response expertise. Finally, one mentioned that the Post-Katrina Emergency Management Reform Act of 2006 gave the FEMA administrator certain statutory responsibilities that used to be the Secretary's and that the change created friction between

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the two officials until they developed a shared view of the administrator's responsibilities.[14] That interviewee went on to note that the understanding was a matter of personalities, and that the next administrator and Secretary will have to reach a similar understanding. Of note, one interviewee thought that lessons identified in the *Federal Response to Hurricane Katrina Lessons Learned* report did not place enough emphasis on the role of leadership during a crisis.

Focus Area Issues

In addition to these oversight and integration changes, interviewees suggested that the Department place additional focus on several areas, including the national cyber security strategy; liaison with state, local, and private sector authorities; infrastructure protection; and resiliency. The one theme that was consistent across all interviewee comments was that DHS should take account of, and incorporate into planning, the views of outside stakeholders while developing and executing policy.

Cyber Strategy. With the exception of congressional oversight, no other issue

received as much attention as cyber security. Interviewees noted three fundamental challenges when dealing with cyber issues: technology moves faster than regulation, even partial solutions require significant interagency cooperation, and the private sector does not trust the Federal Government.

To improve cyber security, DHS should focus on two missions: acting as a conduit to the private sector for enhancing critical infrastructure Supervisory Control and Data Acquisition (SCADA) systems; and serving as a coordinator for protecting the Federal Government's systems. The DHS lead element for improving SCADA security should be the National Cyber Security Division (NCSD), which should begin by gaining situational awareness of cyber attacks on both the private and the public sectors. NCSD should continue its work by providing public praise for companies that collaborate with DHS, working through the National Institute of Standards and Technology to develop standards for SCADA system security, and partnering with the Securities and Exchange Commission to require publicly traded companies to include a discussion of cyber-related risks in the Management's Discussion and Analysis section of their quarterly 10–Q filings.[15]

Addressing private sector security is the first half of the equation, and addressing Federal cyber security is the second half. DHS, through a significantly expanded National Cyber Security Center, should be the interdepartmental lead agency to protect the ".gov" domain on the Internet. This task will not be trivial for a number of reasons, not least of which is developing a consensus opinion of to whom (employees, contractors, vendors) authentication rules should apply.

In an effort to address the private sector's reluctance to share information with the government, DHS should develop proposed legislation establishing limited-access provisions (akin to, but more restrictive than, those for Protected Critical Infrastructure Information) for narrowly defined types of cyber-related information. This task, too, will not be a trivial effort since it will require DHS to hire cyber experts such as those found at Google or Microsoft, and those candidates have not traditionally been attracted to the Federal culture.

State and Local/Private Sector Information Sharing/Outreach. It is axiomatic that the people best positioned to protect infrastructure are those closest to it, since they are the ones most aware of its strengths and weaknesses. The most effective ways the Federal Government can support those leaders are by providing them with information on the threats to their facilities and serving as a platform upon which they share best practices within and across sectors. Unfortunately, there are stumbling blocks to doing so. As one interviewee noted, "If it

customer should be state and local emergency preparedness employees, mostly—but not exclusively—police officers. This definition would represent a profound shift from the current practice that holds DHS leadership as the primary consumer of intelligence. Essentially, interviewees recommended that the Department deliberately decide to play a

interviewees recommended that the Department deliberately decide to play a backup role to state and local governments

has taken us 8 years to get to the information sharing point we are at, it is because it is hard to do, not because we are stupid."

DHS's fundamental issue with information-sharing lies in defining the primary customers of intelligence products. Interviewees suggested that DHS's primary intelligence

backup role to state and local governments. This recommendation dovetails with the Director of National Intelligence's recognition that the Federal Government must move from a "need-to-know" mindset to one that recognizes its responsibility to provide information to new partners.[16]

Coast Guard C–130 Hercules patrols with USS *Crommelin* and Micronesian–FSS *Independence* in western Pacific Ocean

U.S. Coast Guard (Michael De Nyse)

Such an approach would demand that DHS emphasis be on building trust on the part of state and local officials. There is still a popular misconception that DHS knows more than it does, that it is keeping the "good stuff" to itself. While the Department will never completely eliminate that perception, having liaison officers regularly ask what local officials need, and then delivering on those needs, would go far toward reducing it. DHS has taken a number of steps to address this issue:

- granting 1-day clearances
- developing Information Sharing and Analysis Councils
- funding Fusion Centers
- including local officials in the Interagency Threat Assessment and Coordination Group within the National Counterterrorism Center
- granting clearances to state officials and private sector leaders.

These steps address most of the process changes needed; now DHS needs to focus on the human element.

To help build those relationships, DHS should change its paradigm to one in which most intelligence products are unclassified and are geared for law enforcement use. These products should identify behaviors that local law enforcement and infrastructure operators should be suspicious of, and they should describe those behaviors in operational terms. DHS should support the development of these products by establishing a core of analysts who know both law enforcement needs and how to address those needs through Intelligence Community resources.

Infrastructure Protection. Few people would argue with the premise that one of DHS's core missions is ensuring the continuing function of critical infrastructure during a crisis. However, that consensus dissipates when people begin to discuss what constitutes "critical infrastructure," and it vanishes when people discuss how to execute that protection function. Congress defined *critical infrastructure* in section 1016(e) of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001 as "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national

public health or safety, or any combination of those matters." When the executive branch published the 2007 edition of the *National Strategy for Homeland Security*, it restated the definition to include whole sectors because of the possibility of significant downstream consequences stemming from an attack.

This expansion was an error. The Federal critical infrastructure protection mission should be ensuring that critical assets work in a crisis, and executing that mission would require limiting the direct Federal role to supporting security improvements at a defined set of possible targets. One interviewee took a restrictive view of what may be critical, suggesting that the Federal Government use the downstream, nationwide impacts of Hurricane Katrina as a test to determine which types of assets may be critical. In this more limited infrastructure protection model, the Federal Government, specifically the Office of Infrastructure Protection, would focus on enhancing the point-defense/survivability-assurance mission for those critical assets, while the Sector Specific Agencies (SSA) would focus on facilitating information-sharing and standards-setting across the 18 critical infrastructure sectors.

Such a layered approach would focus lead agency efforts on their areas of expertise. The Federal Government—through the SSAs—adds the most value on a sector-wide basis when providing refined intelligence to support local decisions (no other organization has the capability) and when identifying security standards that have applicability across sectors (no other organization has the scope of view). In those cases where the Federal Government determines that specific pieces of infrastructure have to remain operational regardless of circumstances, the Office of Infrastructure Protection is well positioned to provide direct assistance to the operators.

Resiliency. A vital element of homeland security is *resiliency*—ensuring that events, natural or man-made, are no more disruptive to the Nation than they have to be. A key element of resiliency is reassurance, and providing reassurance is the responsibility of DHS's senior leadership. In an emergency, the government's information dissemination strategy, primarily by means of officials' statements and answers to questions, will have a tremendous influence on the population's reaction. People want reassurance, and multiple conflicting messages will not provide it. Coordinating messages even within the

executive branch is a challenging and time-consuming task, so senior officials should establish relationships with their counterparts in other departments and agencies before a crisis begins.[17] Building confidence with counterparts before an emergency will not guarantee success, but not earning their trust beforehand will guarantee failure.

Spreading a reassurance message (that "terrorists getting lucky is not the end of the world") has to start before an incident, and should be repeated until the public internalizes the concept that, provided the government has made reasonable attempts to prevent them, acts of terrorism are in the same category as plane crashes and traffic accidents. They are terrible tragedies for the families involved, but cannot be eliminated under any set of measures that are remotely reasonable to implement, and are certainly not a threat to society as a whole.

> *in an emergency, the government's information dissemination strategy will have a tremendous influence on the population's reaction*

Conceptualizing Homeland Security

In addition to the policy, oversight, management and integration, and focus area issues discussed above, interviewees provided their thoughts on two broad questions, neither of which has firm answers: "What is homeland security, and where does DHS fit within that construct?" and "How does DHS structure itself within that model?"

Homeland Security Defined. Homeland security means many things to many people. The 2006 *National Strategy for Homeland Security* defines it as "a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur." However, that definition, limited to countering terrorism, excludes many DHS activities, suggesting that it is too narrow. An alternative definition of homeland security, taken from several interviewees' comments, could be "a concerted national effort to prepare for and address the full range of physical and virtual domestic risks to the Nation's citizens and their well-being." This definition would encompass the protection, prevention, response, recovery, and preparedness activi-

ties inherent in an all-hazards view of DHS without requiring that all homeland security activities be part of the Department.

The Path Forward. Congress has provided guidance to DHS, which sometimes focused on the organization in its antiterrorist role, sometimes in its counterterrorist one, and sometimes in its all-hazards guise. The conflicts inherent in these three distinct views of DHS have created some confusion and inefficiencies within the organization, and DHS should use the Quadrennial Homeland Security Review as a vehicle to address those issues. By adopting a functional model to examine DHS operations, the Department may be able to identify synergies between components, particularly those that share similar core competencies: screening, patrolling, and incident management. This examination would provide a platform for the Department to address threats irrespective of how they originate (for example, trafficking is trafficking, regardless of whether it is of drugs or people). It would facilitate a convergence of how DHS screens for potential threats (for example, Customs and Border Protection and the Transportation Security Administration both look for suspicious people, yet the latter concentrates on passenger behavior while the former focuses on identity validation). It would also illustrate the utility of using open standards to enhance data-sharing between components. While no interviewee suggested that any component abandon its processes and adopt another's, several did suggest that this analysis would allow components to identify areas where the agencies would be able to work together more efficiently.

Analyzing interviewee comments, the two greatest stumbling blocks to the Department of Homeland Security's success are in the areas of congressional oversight and internal integration. The multiplicity of congressional oversight both guarantees that the Department receives conflicting guidance and limits the ability of its senior leaders to build relations with the members of its oversight committees. Divergent legislative guidance, in particular, is an enabler for components to interpret guidance from the Secretary as flexibly as they can, not the way the Secretary wants them to.

The nature of the Department's headquarters, more umbrella than command element, also facilitates the components' inclination to gravitate toward independent opera-

tions. A group on the Secretary's staff with the influence to require convergence among the Secretary's risk-informed priorities, component budgets, and agency information technology architecture would enhance the functioning of the Department as a whole. The Quadrennial Homeland Security Review presents the current Secretary with the opportunity to drive the organizational changes DHS needs. It is an open question as to whether the environment will allow her to do so.

The United States has come a long way in the nearly 7 years since the creation of DHS. After forming an entirely new agency with 50,000 employees, providing more than $20 billion in grants to state and local governments, and undergoing the largest reorganization of the Federal Government since the Goldwater-Nichols Department of Defense Reorganization Act of 1986, the Department of Homeland Security has undeniably increased the security of the Nation's citizens. After two major and countless minor reorganizations, it is also clear that DHS has more work to do. In a world where every solution both is partial and brings its own set of challenges, the issues to focus on and the means to address them will require significant thought on the part of Federal and state leaders. **JFQ**

NOTES

[1] The requirement was that almost all organizations transfer by March 1, 2003, with the Plum Island Animal Disease Center to transfer by June 1, 2003. The final personnel, assets, and liability transfers were to occur by September 30, 2003. See <www.dhs.gov/xlibrary/assets/reorganization_plan.pdf>.

[2] Admiral James M. Loy, USCG (Ret.), comments during interview with author, December 16, 2008.

[3] Combination of National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report* (Washington, DC: National Commission on Terrorist Attacks Upon the United States, July 22, 2004), available at <www.9-11commission.gov/report/911Report.pdf>; Peter D. Hart Research and Public Opinion Strategies, *The Aftershock of Katrina and Rita: Public Not Moved to Prepare* (Washington, DC: Peter D. Hart Research and Public Opinion Strategies, December 2005), available at <http://ceg.files.cms-plus.com/EmergencyPreparedness/America%20Get%20Prepared%20report.pdf>; Homeland Security Advisory Council, *Top Ten Challenges Facing the Next Secretary of the Department of Homeland Security* (Washington, DC: Department of Homeland Security, September 11, 2008), available at <www.dhs.gov/xlibrary/assets/hsac_dhs_top_10_

challenges_report.pdf>; National Academy of Public Administration, *Addressing the 2009 Presidential Transition at the Department of Homeland Security* (Washington, DC: National Academy of Public Administration, June 2008), available at <www.napawash.org/pc_management_studies/DHS/DHSExecutiveStaffingReport2008.pdf>; and Center for Strategic and International Studies (CSIS), *Untangling the Web: Congressional Oversight and the Department of Homeland Security* (Washington, DC: CSIS, December 10, 2004).

[4] CSIS.

[5] Combination of Andrew Morral's comments during interview with author, October 27, 2008, and Price Roe's comments during interview with author, October 27, 2008.

[6] Homeland Security Presidential Directive–1, "Organization and Operation of the Homeland Security Council," available at <www.fas.org/irp/offdocs/nspd/hspd-1.htm>.

[7] National Security Presidential Directive–1, "Organization of the National Security Council System," available at <www.fas.org/irp/offdocs/nspd/nspd-1.htm>.

[8] Alan G. Whittaker et al., *The National Security Policy Process: The National Security Council and Interagency System* (Washington, DC: Industrial College of the Armed Forces, November 15, 2008).

[9] The Department of Homeland Security Federally funded research and development center.

[10] Morral.

[11] Roe.

[12] Ibid.

[13] See <www.opm.gov/feddata/html/2008/january/table2.asp>.

[14] A career official commented during an interview with the author on January 9, 2009, that the perception that the act shifted responsibilities is not universally held. Whether it did so centers around the differences between emergency management and incident management.

[15] Form 10–Q "includes unaudited financial statements and provides a continuing view of the company's financial position during the year. The report must be filed for each of the first three fiscal quarters of the company's fiscal year." See <www.sec.gov/answers/form10q.htm>.

[16] Office of the Director of National Intelligence (ODNI), *U.S. Intelligence Community Information Sharing Strategy* (Washington, DC: ODNI, February 22, 2008), available at <www.dni.gov/reports/IC_Information_Sharing_Strategy.pdf>.

[17] Loy.

U.S. Joint Military Contributions to Countering
Syria's 1970 Invasion of Jordan

By R I C H A R D   A .   M O B L E Y

Jordanian army armored personnel carriers patrol streets of Amman after 9 days of civil war against Palestinian guerrillas, September 25, 1970

n the midst of the Jordanian civil war with Palestinians during September 1970, Syria conducted a short-lived armored incursion into northern Jordan. U.S. leaders, seeing Syrian intervention through the prism of Cold War politics, responded with extensive military preparations to intervene on behalf of Jordan's King Hussein and prepared to block Soviet intervention on behalf of Syria. When Syria withdrew its forces after 3 days of combat with the Jordanian army, U.S. decisionmakers not only praised the Jordanian resistance but also concluded that Syria's withdrawal was a victory for U.S. statecraft.

Recently declassified material provides a richly detailed account of how Washington quickly developed plans, deployed forces, and solicited Israeli military assistance in response to the rapidly developing crisis. The combination of these steps would have allowed U.S. or encouraged Israeli intervention to save King Hussein from a potential Syrian onslaught. Contemporary memoirs, public statements, and diplomatic cables suggest that several key international actors involved in the crisis acknowledged the import of the U.S. military moves.

A review of U.S. military behavior during this episode thus offers a case study on successful crisis decisionmaking, military planning, and operational deployments on behalf of a major ally faced with a sudden threat. Although set in the context of the 1970s, such a study is still relevant because it demonstrates how Washington effectively responded to the threat when U.S. popular will and military resources were sorely tested by ongoing conflict in Southeast Asia. U.S. strategy succeeded

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from an American and a Jordanian perspective, according to memoirs and contemporary diplomatic messages. How the strategy affected Damascus is more difficult to determine because of the paucity of information on Syrian decisionmaking during the crisis, but the threat of U.S. or Israeli intervention must have weighed heavily on a Ba'ath party leadership that exhibited only lukewarm commitment to the intervention.

Strategic Context

U.S. leaders in September 1970 were concerned about the role of several actors and their behavior in three concurrent Jordanian crises, each posing different planning requirements: the Palestinian hijacking of airliners to Jordan (September 6 and 9), the commencement of Jordanian military operations against the Palestinian militias within Jordan (September 17), and the Syrian armored incursion into Jordan (September 20–22). The Palestinians and Iraq posed the more immediate threat to King Hussein given their military presence in Jordan. Planners appeared to treat Syria as a lesser threat because it had no forces in Jordan before its incursion. Finally, Washington suspected that Moscow might encourage, if not militarily support, adventures by its Arab allies.

President Richard Nixon and his national security advisor, Henry Kissinger, perceived that Moscow had been trying to exploit regional unrest throughout the summer of 1970.[1] Kissinger claimed that Moscow had foreknowledge of the invasion and later criticized Moscow for not quickly and visibly urging Syria to stop. Given such suspicions of Moscow, U.S. contingency planning focused on ways to block a Soviet intervention in the Middle East on behalf of Syria.

U.S. Planning to Defend Jordan

The United States in June 1970 began updating plans to support King Hussein if Syria or Iraq attacked. Kissinger had assembled the Washington Special Actions Group (WSAG), a crisis management team comprising principals from the White House, Department of State, Department of Defense (DOD), and Central Intelligence Agency in response to President Nixon's directive that the United States update its planning to support Jordan. U.S. planners were concerned about the size of Syrian and Iraqi tank inventories, which far exceeded Jordan's arsenal of 300 British Centurion and American M–60 tanks. The Joint Chiefs of Staff (JCS) assessed that

tanks—unlike the Fedayeen militias—would be vulnerable to airstrikes in the open Jordanian terrain. This concern with redressing the numerical imbalance and armored vulnerability in northern Jordan probably made invading tanks key targets in U.S. planning to defend Jordan against Syrian or Iraqi attack.

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"Black September" in Jordan, 1970

USS *Independence* carrier strike group to move 100 miles off the Lebanese coast

USS *Saratoga* is deployed to Lebanese coast

Sept. 20–22
Syrian armored forces conduct incursion into Jordan

Sept. 23
Syrian forces withdraw from Jordan

Sept. 17
Commencement of Jordanian military operations against the Palestinian militias within Jordan

LEBANON
SYRIA
IRAQ
MEDITERRANEAN SEA
Deraa
Irbid
Ramtha
Al Mafraq
As-Sarish
WEST BANK
Amman
Jerusalem
Azraq ash Shishan
GAZA STRIP
ISRAEL
Al Qatranah
Al Karak
Al Hasa
JORDAN
SAUDI ARABIA
Al Aqabah
EGYPT
GULF OF AQABA

The National Command Authorities again focused on Jordan when the Popular Front for the Liberation of Palestine hijacked and flew three airliners there on September 6 and 9.[2] In response, Kissinger on September 9 convened the WSAG, which considered, fused, and recommended diplomatic and military courses of action for the Jordan crises in meetings occurring several times daily for the next 17 days. Following the hijacking (and as a likely result of the WSAG process), the JCS

ordered the USS *Independence* carrier strike group to move 100 miles off the Lebanese coast and positioned six C–130 aircraft toward Turkey.[3] USS *Saratoga*, the second carrier deployed to the Mediterranean, was then enjoying a port visit but would be en route to the same destination by September 15. An amphibious readiness group was continuing an exercise on Crete on September 11.[4]

On September 9–10, the WSAG sought to delineate the consequences of a protracted U.S. military operation in Jordan in support of the king and to assess the force posture required to deter Moscow should Israel move into Jordan. On September 10, WSAG meetings set in motion the basket of plans that the United States would turn to during the Syrian intervention. Kissinger directed the group to prepare a plan to deter the Soviet Union if Israel intervened to support King Hussein against the Fedayeen, to review a contingency plan for U.S. intervention in order to support him against the Fedayeen should he request it, and to determine logistic support for Israel.[5]

The Chairman of the Joint Chiefs of Staff, Admiral Thomas Moorer, responded that the

JCS had been updating its contingency plans for Jordan since June 1970, but warned that "our first recommendation is that we not get involved." If Washington decided to commit forces anyway, the JCS recommended airstrikes against ground units and lines of communications.[6] A U.S. ground campaign was the least preferred option given the logistic difficulties—"a real problem," in Admiral Moorer's words—that the JCS anticipated U.S. forces in Jordan would encounter. Addressing the challenge of deterring Soviet intervention, the Chairman urged forceful measures: "We can't do it half-way; we have to be convincing. The movement of one ship or squadron is a feeble gesture that won't serve the purpose."[7]

The WSAG updated its plans on September 15, with special emphasis on scenarios that the United States might face in Jordan.[8] (Although the WSAG remained focused on Iraq rather than Syria as the primary external threat, many of the planning issues would have been similar for countering a Syrian armored force.) The WSAG and U.S. Embassy in Amman assessed that the Jordanian army could defeat the Fedayeen as long as it did not also have to fight outside troops. The U.S. Embassy also judged that the Jordanian army could even handle the Fedayeen and Iraqi

Yasser Arafat and Jordan's King Hussein walk to conference hall in Cairo, Egypt, to meet with other Arab leaders to sign peace agreement ending Jordanian civil war, September 27, 1970

AP Images

forces combined. The WSAG observed that the eruption of Fedayeen violence in other cities could spread Jordanian forces thin, however, and pursued options to save the king should he be unable to deal with the Iraqis.[9]

The complexion of the crisis changed on September 17 when King Hussein initiated hostilities against his Palestinian challengers. Rather than masking its military preparations, the United States sought to demonstrate that it could support Hussein and consequently revealed some of its precautionary military movements in U.S. Government press releases. The same day, Nixon told reporters that only the United States or Israel could stop an Iraqi or Syrian invasion of Jordan. Echoing the comment he had penned in a Kissinger memorandum, Nixon stated in a newspaper interview that day that he preferred that U.S. (rather than Israeli) forces come to Jordan's aid.[10] That night, he told Kissinger, "I made it clear . . . it would be fatal to the king if the Israelis came in . . . Jordan has to be strengthened to scare off Iraq and Syria. . . . We also have airplanes to strike. I want Europe mobilized in readiness if we do. I want to hit massively—not just little pinpricks."[11]

Despite Nixon's initial views, the United States and Israel negotiated over the possibility of Israeli intervention several times during the crisis. They failed to reach final agreement over which country would pursue what military course of action, however, at least during the 3-day duration of the Syrian occupation of northern Jordan. Both retained the option of air intervention if necessary, and—as Syrian forces were preparing to withdraw—Israel advised that it would be prepared to conduct airstrikes against the Syrians. The Israelis mobilized forces in preparation for a possible ground intervention in Syria, although Tel Aviv steered clear of firmly committing to an invasion of Jordan.

The U.S. Navy's reaction to the Jordan crisis consequently became more robust on September 17, although staying within the bounds of a "maximum rational response," in the words of former Chief of Naval Operations Admiral Elmo Zumwalt.[12] The JCS ordered a third carrier battle group led by USS *John F. Kennedy* to depart the Atlantic Fleet Weapons Range off Puerto Rico and begin its Mediterranean deployment a few days early.[13] A second amphibious readiness group led by USS *Guam* was to complete its loadout at Morehead City, North Carolina, and depart on September 18.[14]

In the Mediterranean, the JCS ordered USS *Saratoga* to depart Malta and join the *Independence* battle group in the eastern Mediterranean. The amphibious readiness group was to remain within 36 hours steaming time from Jordan. Defense Secretary Melvin Laird announced that the Sixth Fleet had moved units closer to the eastern Mediterranean, and DOD disclosed that *Guam* was ordered to depart the United States earlier than scheduled.[15]

As these forces steamed east, the WSAG concluded that carriers would provide most, if not all, of the airpower required to support the Jordanian army, conduct a show of force, or accomplish a noncombatant evacuation operation or resupply mission. The Navy had far more aircraft immediately available, and WSAG participants doubted that most of the bases near Jordan would be available for contingency operations. The WSAG concluded that Cyprus was the only viable base for this contingency given political sensitivities. The Air Force would require 7 days to bring in the supplies and equipment to support strike operations from there. Even then, the JCS estimated that the United States could generate about 50 tactical sorties daily from there to Jordan—only a 25 percent increase

the United States and Israel negotiated over the possibility of Israeli intervention several times during the crisis

above the 200 daily sorties expected from the *Independence* and *Saratoga* strike groups. The WSAG concluded that the additional land-based tactical sorties would be of marginal value, especially because the Navy would gain the capability to fly a total of 300 sorties daily when the USS *Kennedy* group arrived. Consequently, the WSAG recommended that the United States rely solely on carrier-based air in its planning to deal with Syria.[16]

Syrian and Iraqi public threats against King Hussein between September 17 and 19 raised the possibility that the carriers would soon see combat. President Hashim al-Atasi claimed that Syria would "spare no blood" to help the Palestinians, an insinuation that Damacus might send forces into Jordan. On September 17, Radio Damascus echoed this theme by reporting that the Syrian foreign ministry had warned Jordan's ambassador that the "Syrian revolution cannot remain

silent or idle about the massacres to which the Palestine revolution groups and the masses in Jordan are being exposed."[17]

Syrian Incursion Begins
Sunday, September 20

Damascus committed a reinforced division to the Jordanian civil war on September 20, probably in hopes of facilitating a quick Palestinian victory. The Jordanian army was making halting progress in defeating the Fedayeen, and Syrian leaders probably reasoned that a limited commitment might be sufficient to tip the scales on behalf of the Palestinians (or at least to help create a safe haven for them in northern Jordan without triggering Israeli intervention). Syria's Fifth Division (including elements of four Syrian brigades and the Palestinian Hittin Brigade) began invading northern Jordan at approximately 2 a.m. local time on September 20.[18] More than 170 T–55 tanks and 16,000 troops initially supported the invasion, but Syria declined to commit its air force even after Jordanian fighters started to attrite the invasion force.

As fighting continued, the Jordanians repulsed two armored offensives and reportedly inflicted heavy losses on a Syrian armored brigade.[19] The tanks had crossed near Ramtha and by 3 p.m. were 5 miles south of there.[20] They slowly moved toward Irbid, a Jordanian city only 45 miles north of Amman and under Fedayeen control. Complementing the ground campaign, Hawker Hunter aircraft attacked the Syrian tanks and set some on fire.[21] They were grounded after nightfall, however, when at 6:15 p.m. the Jordanians reported that two armored brigades operating on a broad front were attempting a third assault.[22] British reporting noted, "Jordan forces are reported as quote doing badly and they are outnumbered and undertanked unquote."[23] By 9 p.m., three Syrian brigades with 215 tanks—the equivalent of a division—were located near Irbid.[24]

Fortunately, despite all the Syrian activity, the Iraqi expeditionary force remained uncommitted. They moved east, presumably to remain clear of a Syrian-Jordanian battleground. The Syrian 6th Armored Brigade—normally stationed in Deraa—reportedly moved toward Mafraq. Iraqi officers also asked the Jordanian air force to depart the Mafraq airfield and fly to the H–5 airfield 75 miles east, explaining that they did not want Iraqi forces near the airfield drawn into the contest.

Faced with this rapidly growing threat so near the capital, King Hussein asked for U.S.

assistance three times on September 20.[25] Zaid Rifai, the close advisor who delivered the king's written request, clarified that Jordan would accept air support from any country, including Israel, in his comments to the U.S. Ambassador in Amman. In a telephone conversation between the Foreign Office and White House staff, the British also explained that they had confirmed that the king "definitely requested [Her Majesty's Government] to pass on to the Israelis a request on the Syrian troops which are massing. The request seems to have been made first this morning and then at about 1830 Jordan time this evening."[26]

The U.S. Ambassador also recommended that the United States consider an Israeli "spooking" operation to eject the Syrians from Jordan. Commenting that "the Israelis are experts at this," the Ambassador suggested that Damascus might withdraw if distracted by the massing of Israeli forces opposite Syria and by low-level Israeli reconnaissance over Damascus. The reasoning was that endorsing such an initiative would at least "give us something to say to the king."[27] (Amman would repeat this recommendation the next day, noting that "escalation of Israeli activity, real or manufactured signs, Iraqi activity, careful leaks re contingency plans U.S. and others might contribute" to a Syrian withdrawal.)[28]

Faced with all these requests, the WSAG encountered difficulties making timely assessments given delays in obtaining current tactical intelligence and in communicating with King Hussein in war-torn Jordan. Kissinger commented, "We did not possess enough intelligence or targeting information to respond to the king's pleas with American forces." Kissinger asked Israeli ambassador Yitzhak Rabin to forward a request for the Israeli air force to fly reconnaissance missions over Jordan at daybreak on September 21 because the United States lacked information. The JCS subsequently directed the fleet to develop reconnaissance and strike plans to be used against the Syrian forces in Jordan. The WSAG even approved sending a delegation from the USS *Independence* to Tel Aviv to pick up last-minute intelligence from the Israelis on the disposition of Syrian forces for targeting purposes.[29] (The White House envisioned that this visit would signal the Soviets that the United States and Israel were cooperating closely.[30])

The United States also approached Israel about possible Israeli air and land intervention. Late on September 20, Rabin responded that Israeli military leaders were not con-

vinced an air campaign would be sufficient to dislodge the Syrians. The Israelis—who promised to take no action without consulting the United States—advised that they would make an assessment after receiving the next day's photo reconnaissance reporting. Kissinger later observed that the United States kept a careful watch on Israeli actions and noted that they were moving quietly and calling up reserves. Within 36 hours of the Syrian incursion, Israel concentrated additional forces on the Golan Heights.[31]

Urgent Jordanian Requests for Assistance
Monday, September 21

The ground order of battle in northern Jordan still favored Syria on the morning of September 21. Syria had nearly 300 tanks and 60 artillery tubes near Ramtha and Irbid.[32] Some tanks had entered Irbid but

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the U.S. Ambassador recommended that the United States consider an Israeli "spooking" operation to eject the Syrians from Jordan

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President Nixon in Oval Office, September 25, 1970

remained in groups rather than dispersing in the city streets. Other tanks remained in groups outside town. Construction work at Irbid suggested the Syrians were preparing to hold it. A Syrian second echelon comprising supply vehicles and bulldozers was positioned between the Syrian border and Irbid.[33] The units included the Fifth Division headquarters, two armored brigades, and one tank battalion. In other words, Syria had committed as much as a third of the 900 tanks available between Deraa and Damascus to the operation. Jordan had a smaller force—three infantry brigades and 120 to 140 tanks—in the area.[34] Syrian forces continued to advance, and by 5 p.m. had captured two key crossroads, including an intersection serving as a gateway to Amman, only 45 miles south.[35]

Despite successes on the ground, Syria was also sensitive to the U.S. naval buildup. On the morning of September 21, the foreign ministry denied that Syria had intervened in Jordan and stated that such accusations were a "prelude for U.S. military intervention in the area, particularly since the U.S. had been moving its Sixth Fleet and sending its naval units to the eastern shore of the Mediterranean for some time." The Syrian spokesman then demanded the withdrawal of the Sixth Fleet.[36]

Jordan's requests for assistance continued because the Syrian force was undefeated and civil war raged elsewhere in Jordan. King Hussein phoned the U.S. Ambassador at 3 a.m. local on September 21 and asked that he relay an urgent message to Nixon:

Situation deteriorating dangerously following Syrian massive invasion. Northern forces disjointed. Irbid occupied. This having disastrous effect on tired troops in the capital and surroundings. After continuous action and shortage supplies . . . I request immediate physical intervention both air and land as per the authorisation of government to safeguard sovereignty, territorial integrity, and independence of Jordan. Request immediate air strikes on invading forces from any quarter plus air cover are imperative. Wish earliest word on length of time it may require your forces to land when requested which might be very soon.[37]

Rifai added that the king's first preference was for a U.S. strike, but because the situation seemed to be "coming to the worst, the most important thing was to hit the Syrians

now," according to the American Embassy in Amman.[38]

The WSAG continued to investigate the possibility of Israeli air and land intervention, despite President Nixon's earlier reservations.

King Hussein phoned the U.S. Ambassador and asked that he relay an urgent message to Nixon

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In fact, Nixon relented. He had told Kissinger early on September 21 that he had decided to approve an Israeli ground action and dictated a message to be relayed to Rabin.

U.S. Embassy personnel simultaneously engaged the Israelis in Tel Aviv on the details of an Israeli intervention. To support its planning, the Israel Defense Forces (IDF) sought operational information to avoid inadvertently striking Jordanian units. They warned that they were beginning to doubt that an air operation alone would be effective, although it might have worked 36 hours earlier.[39]

The Israelis agreed to intervene "in principle" but awaited answer to their first battery of questions for U.S. assurances. On September 21, Washington promised diplomatic support, including the use of a veto on Israel's behalf in the United Nations Security Council.

Washington agreed not to hold Israel responsible if its actions led to the death of hostages taken from the airliners that had been hijacked to Jordan. The United States explained that it did not know whether King Hussein would formally request Israeli assistance or establish methods of Jordanian-Israel communications, although it noted that King Hussein had repeatedly requested or approved Israeli airstrikes.[40]

In particular, Washington cited the increase in Sixth Fleet readiness to reassure the Israelis that the United States could act to prevent Soviet intervention:

We have and will continue to make clear to the Soviets our support for Israel's security and integrity and its right to live within defensible borders. In the present crisis, the U.S. has augmented the Sixth Fleet; it has also taken other readiness measures. These clearly imply a decision not to permit Soviet intervention in the conditions under discussion. As for specific measures the

Naval Historical Center

President Nixon with Admiral Thomas H. Moorer, Chairman of the Joint Chiefs of Staff, aboard USS *Saratoga* prior to deployment to Mediterranean Sea

U.S. may take to prevent Soviet intervention, these would depend on the circumstances and the situation that exists at the time. We have contingency plans for these eventualities.[41]

To bring the point home, DOD that day announced naval movements toward the Mediterranean and the heightened alert for U.S. Army units in Europe, the 82d Airborne Division, and supporting C–141 airlift units based in North Carolina.[42] The *Kennedy* battle group and *Guam* amphibious readiness groups continued their Atlantic crossings en route to the eastern Mediterranean. *Kennedy* was to enter the Mediterranean by Friday, September 25. Two more nuclear attack submarines (*Whale* and *Gato*) were to enter the Mediterranean between September 25 and 29.[43]

A message from Admiral Isaac Kidd, commander of Sixth Fleet, revealed that the fleet was pondering the tactical implications of engaging the Syrian armor. Admiral Kidd warned that it would be "virtually impossible" to guarantee that the United States would not penetrate Syrian airspace because some of the tanks were close to the Syrian border. He also addressed rules of engagement and prohibited hot pursuit of enemy aircraft into Syria. Finally, Kidd admonished his subordinates to ensure that Navy aircraft did not lead any Syrian fighters back to the carriers after an attack.[44]

Syrian Defeat and Withdrawal
Tuesday, September 22

The Syrian forces again attempted to breach Jordanian lines on the northern ridgeline of the Ajnun Mountains and attacked from Hawara toward Irbid by midday. After advancing 3 kilometers toward Irbid and As-Sarish around 10 a.m. local, they withdrew after falling under Jordanian tank and artillery fire—behavior similar to that they had displayed the day before.[45] Rifai advised the U.S. Embassy that Jordan had repulsed Syria's attempt to move south of the Irbid/Irbid junction/Ramtha line using tanks, artillery, and aircraft.[46] Hawker Hunter fighter-bombers continued to attack the Syrian armor in relays of eight aircraft, with intervals of half an hour between sorties.[47] The small Jordanian air force—with fewer than 50 Hawker Hunter and F–104 fighters—ultimately flew as many as 250 sorties during the crisis.

Airstrikes, logistic shortfalls, and mechanical breakdowns began to attrite the Syrian armor, and the Israelis, who had flown reconnaissance missions over Jordan on September 21 and 22, assessed that the Syrians would encounter serious logistic difficulty within 3 to 4 days. (One battalion reportedly had only 8 operational tanks out of an inventory of 31 due to breakdowns.[48]) By midday on September 22, approximately 50 of 200 Syrian tanks were inoperable.

Jordan concluded that it had achieved tank parity with the Syrians.[49] Amman had achieved this through attrition of Syria's Fifth Division and by reinforcing its own forces in the north during the night of September 21–22. An estimated 200 Jordanian tanks were located in the battle zone.[50] These losses and the shift in the correlation of forces probably account in part for Syria's decision to withdraw from Jordan on the night of September 22–23.

As the United States and Israel prepared to attack the Syrian invaders, Jordan's need for assistance dropped, given its successes on the ground. The U.S. Embassy in Amman advised late on September 22 that Amman had less need of an Israeli ground attack, although King Hussein still sought external air support. The Embassy warned that some Jordanian army units might even conclude that invading Israelis would be a greater threat than the Syrians and raised the specter of a conflict arraying Jordanian units against those of Israel, Syria, and perhaps Iraq.[51] Even a successful Israeli intervention "would strain the king's personal standing" with his subjects and fellow Arabs. The Ambassador also warned that Israel might attempt not only to force a withdrawal but also to "so smash the Syrians that they won't rise again for a long time."[52] The American Embassy in Tel

> *the Embassy warned that some Jordanian army units might conclude that invading Israelis would be a greater threat than the Syrians*

Aviv similarly warned that the United States risked being faced with a "large Israeli force entrenched on Irbid Heights and perhaps reluctant to leave there."[53]

Ultimately, the king was ambivalent about airstrikes and against Israeli ground intervention. The Embassy quoted King Hussein's response, as relayed through Rafai, who said the king "prefers action from up high" (an allusion to the Israeli air option) and that "if anything is to be done low it should not be here but away" (a suggestion that he would prefer Israeli forces invade Syria, not Jordan). Rifai said the principal aim was to force Syrian withdrawal because if they stayed, it would complicate even further the "job that the government has in

President Nixon meeting with Secretary of State Kissinger, Vice President Ford, and Chief of Staff Alexander Haig in Oval Office

White House Photographic Office Collections

Amman." He concluded that, more importantly, Syrian success might "give the Iraqis the idea that they too can get away with something in Jordan."[54]

Nevertheless, Israel mobilized reserves and moved the equivalent of a division into the Beit Shin area, from where[55] they could intervene at almost any point in the Jordan Valley. The U.S. Embassy, however, also judged that the mobilization was most likely precautionary and conducted only to give Israel the option of intervening.[56] The Israeli government had not taken steps to ready Israeli public opinion for an intervention in Jordan.[57] Despite the assurances being given in Washington, the Embassy subsequently commented that the government of Israel "appeared neither to feel its security seriously threatened nor anxious to intervene in fighting."[58]

Perhaps also sensing Israeli ambivalence, the WSAG continued to orchestrate the U.S. military response to the crisis and ordered DOD to accelerate collection of target information. It also requested additional contingency plans: one to deliver equipment to Israel should it engage the Syrians, and another to address a breakdown of the Suez Canal truce while Israeli forces were engaged in Jordan. The WSAG also reviewed plans for coping with a Soviet response to an Israeli attack on Syria.[59]

With most of the planning completed, Washington promised King Hussein that the United States would promptly provide materiel assistance. By September 22, both DOD and the Central Intelligence Agency had developed plans to airlift military equipment to Jordan. U.S. European Command also prepared to send U.S. military field hospitals to Jordan within 11 hours of notification. The airborne brigade in Germany remained on alert, with one airborne battalion capable of arriving in Jordan with only 8 hours warning. Two battalions from the 82[d] Airborne Division remained on alert.[60]

The *Saratoga* and *Independence* battle groups remained south of Cyprus, along with an amphibious force with one battalion landing team embarked. The Navy had committed a cruiser and 14 destroyers to the operation.[61] *Kennedy* and *Guam* were to enter the Mediterranean on September 25 and 26, respectively. The JCS ordered another tanker and four destroyers to the Mediterranean to support the *Kennedy,* and the United States

deployed six more P–3s to deal with the Soviet problem.[62]

Aftermath
Wednesday, September 23

Syrian forces completed their withdrawal on September 23, when they started to regroup near the Syrian side of the border.[63] In the latest fighting, the Jordanians reported destroying 70 to 75 tanks,[64] but the final losses reached 135 tanks and 1,500 casualties, according to subsequent interviews with the 40th Brigade commander.[65] The Israelis ultimately assessed that Damascus had lost 120 tanks: 60 to 90 damaged by Jordanian attack and the rest due to mechanical breakdowns.[66] In contrast, Jordan reportedly lost only 16 tanks and an armored car and sustained 112 casualties.[67]

WSAG members remained concerned that Damascus might again intervene in the ongoing civil war to create a liberated zone for the Palestinians in northern Jordan.[68] Talking points prepared for a WSAG meeting stated that U.S. and Israeli plans for intervention were "in good shape."[69] WSAG recommended that the United States continue to move additional naval units into the Mediterranean, and on September 25, the National Security Council recommended that the Sixth Fleet retain all augmentees and maintain the "present state of advanced readiness."[70]

Participants in the crisis attributed the Syrian withdrawal to several factors, among them changes in Israeli and U.S. military posture (including the naval surge), Jordanian military effectiveness, the costs and risks to Syria of escalation in what was to have been a low-risk operation, and pressure Moscow might have imposed on Damascus. According to a memorandum that Kissinger forwarded to the President, King Hussein extended his thanks to the United States and the Israelis for "an effective spooking operation," which he felt was a major contribution to the Syrian withdrawal. He asked that the United States extend his thanks to Israeli Prime Minister Golda Meir while advising that he did not need Israeli assistance.[71]

Israeli and U.S. participants drew out similar explanations. Ambassador Rabin cited four reasons for the Syrian withdrawal:

■ The United States raised its regional military posture.
■ The Jordanian Arab army fought well.

■ Faced with strong Jordanian army resistance, Damascus assessed it would have had to increase its troop commitment to the campaign—a move that risked confrontation with Israel.
■ The Soviet Union pressured Damascus to withdraw.[72]

Prime Minister Meir said that U.S. "political and tactical steps" contributed to the general deescalation in the region. Moreover, Israel's readiness to intervene "did not escape the knowledge of the Syrians and their [Soviet] military and political advisers."[73] Kissinger assessed that Israel's obvious mobilization and readiness measures and Jordan's unexpectedly strong resistance played major roles in the Syrian withdrawal. He also criticized the Soviets for not playing a helpful role during the past few weeks.[74]

Finally, naval power was probably the most visible tool the United States had to pressure Syria, although it was just one of many levers Washington relied on to buttress King Hussein during the Syrian invasion. The rapid naval augmentations gave the Sixth Fleet tremendous striking power—far more than could be generated by land-based air—within days of the decision to generate forces. At a minimum, the augmented fleet might have been used to deter Soviet intervention in the crisis, but it also promised rapid destruction of the invasion force if Israel balked or the Jordanian army had not fought so well. **JFQ**

NOTES

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[2] Alexander Haig, *Inner Circles* (New York: Warner Books, 1992), 242–243.

[3] Memorandum from Henry Kissinger to Principals, "Middle East Contingencies," September 9, 1970, Washington Special Actions Group (WSAG) Meetings, box H076 (Nixon).

[4] Kissinger memorandum to the President, "Contingency Planning for Jordan," September 16, 1970, National Security Council (NSC) Files, Country Files, box 615 (Nixon); telephone conference (telcon) between Kissinger and Nixon, September 17, 1970 (Nixon).

[5] Kissinger memorandum to the President, "Contingency Planning for Jordan," September 16, 1970.

[6] Ibid.

[7] Ibid.

[8] Ibid.

9 Ibid.

10 Memorandum from Brigadier General Alexander Haig to Richard Helms forwarding "remarks attributed to the President," September 19, 1970, Haig Chronological Files, box 972 (Nixon).

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12 Elmo Zumwalt, *On Watch* (New York: Quadrangle/New York Times Books, 1976), 298.

13 Chief of Naval Operations (CNO) briefing notes, September 18, 1970, Operational Archives, Naval Historical Center.

14 Ibid.

15 Daniel Dishon, *Middle East Record 1969–1970* (Jerusalem: Israel University Press, 1977), 849.

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17 Dishon, 847.

18 Ibid., 850.

19 Memorandum from Kissinger to the President, "Situation in Jordan," September 20, 1970, NSC Files, Country Files, Middle East, box 615 (Nixon).

20 Message from British Embassy Tel Aviv, September 20, 1970, FCO 17/1065 (PRO).

21 Ibid.

22 Haig, 248; U.S. Embassy Amman 201639Z Sep 70, NSC Country Files, Middle East, box 619 (Nixon); memorandum from Kissinger to the President, "The Situation in Jordan," September 22, 1970, NSC Files, Country Files, Middle East, box 615 (Nixon).

23 Message from British Embassy Tel Aviv.

24 Ibid.

25 Memorandum from Kissinger to the President, "Situation in Jordan," September 20, 1970.

26 Telcon between Sir Denis Greenhill and member of Kissinger's staff, September 21, 1970, PREM 15/124 (PRO).

27 U.S. Embassy Amman 201745Z, "Syrian Threat," September 20, 1970, NSC Files, Country Files, Middle East, box 619 (Nixon).

28 U.S. Embassy Amman, 211005Z, September 21, 1970, NSC Files, Country Files, Middle East, box 619 (Nixon).

29 Memorandum for the record by Haig, "Kissinger's Briefing of White House Staff," September 25, 1970, Haig Chronological Files, box 972 (Nixon).

30 Telcon between Kissinger and President, September 23, 1970 (Nixon).

31 Memorandum for the record by Haig.

32 Secretary of State 211824Z, September 21, 1970, NSC Files, Country Files, box 619 (Nixon).

33 U.S. Embassy Tel Aviv 210945Z, September 21, 1970, NSC Files, Country Files, Middle East, box 619 (Nixon).

34 Secretary of State 211824Z, September 21, 1970, NSC Files, Country Files, box 619 (Nixon).

35 U.S. Embassy Amman 211310Z, September 21, 1970, NSC Files, Country Files, box 619 (Nixon).

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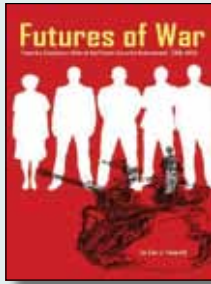
**Futures of War: Toward a
Consensus View of the Future
Security Environment,
2010–2035**
by Sam J. Tangredi
Newport, RI: Alidade Press, 2008
274 pp. $19.98
ISBN: 978–1–4363–1024–6

Reviewed by
CLARK CAPSHAW

Futures of War is a follow-on
work to Sam Tangredi's
*All Possible Wars? Toward
a Consensus View of the Future
Security Environment, 2001–2025*
(NDU Press, 2000). Like its
predecessor, *Futures of War*
aims to provide a comparative
analysis of multiple studies of the
future security environment of
2010–2035, focusing on points
of consensus and divergence in
these studies. The components of
the future security environment
under consideration include
"oncoming threats to national
security; future elements that
will or will not contribute to our
political, economic, or military
strength; trends in relations
between national governments
and between national govern-
ments and non-state actors; and
all other factors that impact the
physical security and continued
existence of the United States"
(p. 11).

Tangredi uses the same
methodology as in his earlier
work: that of a meta-study. He
surveys future security environ-
ment literature published in the
last decade by both government
and nongovernment sources.
He then classifies the position
in each study on a number of
propositions related to threats,
military technology, and oppos-
ing strategies.

The author concludes that
there is consensus throughout
the community on a number of
propositions. Concerning *threats*,
for example, "There will be
ideological rivals to democracy,
but . . . there will not be a rival
military coalition" to threaten the
United States in this timeframe
(p. 61). Under *military technology*,
"advanced military technology
will continue to become more
diffuse, [but] . . . if there is a 'tech-
nological surprise' innovation, it
is likely it will be developed by the
U.S. or [an] ally" (p. 61). The con-
sensus about *opposing strategies* is
that "the homeland of the United
States will become increasingly
vulnerable to 'asymmetric attacks'
. . . and [that] 'information
warfare' . . . will become increas-
ingly important" (p. 61). Each of
these consensus points is exam-
ined in detail, with contrary views
also identified and explained.

It is both encouraging and illu-
minating that most of the sources
agreed on so much. However,
there were some areas where the
sources present divergent views.
On the *nature of future conflict*,
Tangredi notes the contrast
between the propositions that
"globalization, transformation,
and fourth generation warfare
have fundamentally changed
the nature of war" and that "the
nature of war is immutable" (p.
123). Concerning *threats*, the view
that "a near-peer competitor is
inevitable over the long term; we
need to prepare now" is at odds
with the belief that "preparing for
a near-peer will create a military
competition (thus creating a
near-peer)" (p. 123). In the area
of *opposing strategies*, the proposi-
tion "conventional military force
will not deter terrorism or non-
state threats" conflicts with the
proposition that "U.S. military
capabilities will retain consider-
able deterrence or coercive effects
against terrorism and non-state
threats" (p. 124).

A chapter on "wild cards"
introduces the notion that certain
world events could have an
outsized effect on many of the
predictions included in the study;
one of these wild cards is the

advent of "a worldwide economic
collapse" (p. 150). Although the
state of the economy at the end
of 2008 did not meet the defini-
tion of a worldwide collapse, the
tremors were of sufficient magni-
tude to prompt one to ask if any
of the report's conclusions should
be revised on the basis of the new
situation. Since this study was
completed before those events,
the true effect is not included in
the analysis.

However, in his prediction of
the possible effect of an economic
collapse, Tangredi notes that there
are three potential implications
for U.S. defense policy. The first
is either greater engagement by
U.S. forces in conflict caused by
economic problems around the
world or the reverse: a move-
ment in the United States toward
neo-isolationism. The second is
strained relations with traditional
allies if the United States or its
allies (or both) are in the throes
of economic collapse. The third
implication is pressure for a sub-
stantial reduction of the defense
budget. It will be interesting to see
if any or all of these predictions
are realized in the current eco-
nomic crisis.

The penultimate chapter—and
the focus of the book's efforts—is
dedicated to developing a "con-
sensus scenario," one that is true
to the points of agreement and
points of divergence addressed
above. Tangredi does a creditable
job with this, noting that there
is agreement among almost all
sources that U.S. military forces
need to prepare for contingen-
cies such as "high level[s] of
information warfare," "attempts
by a regional competitor or
non-state actor to attack the U.S.
homeland using 'asymmetrical'
means," "continual diffusion of
military technology to potential
competitors and non-state actors,"
and "involvement in failed states,
SSTR [stability, security, transi-
tion, and reconstruction], and
humanitarian actions" (p. 165).
On this last point, Tangredi
argues that such "involvement
in failing states will become less
discretionary as long as there is
the potential for terrorist sanctu-

aries within such states" (p. 166).
A brief final chapter is devoted to
the challenges of defense planning
in general.

As Yogi Berra once put it, "Pre-
diction is very hard, especially
about the future." This aphorism
applies to this book. But consider-
ing the dire predictions made
during the Cold War, the reader
should be buoyed by the consen-
sus that neither strategic nuclear
war, nor global war against a
military near-peer, nor even any
significant alliance against the
United States is considered likely
during this period.

Overall, Tangredi's book is illu-
minating, but one wonders what
will come of it. Will the consensus
of opinion on many of these
issues be taken as basis for policy,
or will it disappear through the
cracks like so many of the studies
that Tangredi references? **JFQ**

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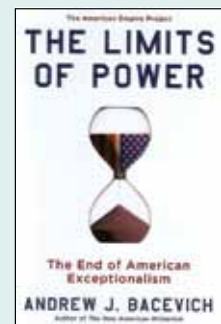
**The Limits of Power: The End of
American Exceptionalism**
by Andrew J. Bacevich
New York: Metropolitan Books,
2008
206 pp. $24.00
ISBN–13: 978–0–8050–8815–1

Reviewed by
BRYON GREENWALD

Having authored, co-
authored, or edited 10
previous books and
published nearly 40 major
articles, Andrew Bacevich is one
of the most prolific and thought-

provoking commentators on contemporary American defense and security issues. A West Point graduate, Vietnam veteran, cavalry regiment commander during the Persian Gulf War, and currently a professor of international relations at Boston University, Bacevich has long been a straight shooter when targeting the folly of military and political leadership. His first book, *The Pentomic Era* (NDU Press, 1986, 1995), took aim at the Army of the 1950s for its ill-conceived pursuit of relevance as part of President Dwight Eisenhower's nuclear-tipped, fiscally austere "New Look" strategy. As aggressive as he is eloquent, Bacevich continued his critique of American foreign and military policy in *American Empire: The Realities and Consequences of U.S. Diplomacy* (Harvard, 2002) and *The New American Militarism: How Americans Are Seduced by War* (Oxford, 2005).

In *The Limits of Power*, Bacevich examines the American cultural, economic, political, and military performance of the last 50 years and finds the Nation's citizens, political leaders, and soldiers wanting. He contends that the American reinterpretation of freedom, especially since the 1960s, "has had a transformative impact on our society and culture." The reader is asked to consider a series of seemingly simple, yet deceptively complex, questions: "What is freedom today? What is its content? What costs does the exercise of freedom impose? And who pays?" (p. 8). In his analysis, Bacevich believes American appetites for and expectations of "freedom" have grown exponentially and today far outstrip the ability of our domestic political economy to satisfy them. This situation has led a generation of self-selected "power elite" to pursue a foreign policy of exceptionalism and expansionism that in its execution looks, feels, and behaves a lot like the creation of an American empire—an empire whose maintenance, Bacevich offers, is antithetical to our tra-

ditional concept of freedom and now imperils the Nation.

Bacevich details with devastating effect the decline of American power since the end of the Cold War and the simultaneous rise of hubris governing the exercise of that power. He holds that quite paradoxically, in the early 1990s, during its self-coronation as the world's sole remaining superpower, America ended what some historians called the "Long Peace" and embarked on an incoherent series of military interventions that presaged the "Long War" to protect and preserve our self-indulgent concept of freedom. Along the way, he suggests, the Nation drank its own Kool-aid, became punch-drunk on its apparent success, and accelerated its descent toward domestic and international calamity.

Central to Bacevich's thesis are three self-induced, interlocking crises confronting America: an economic and cultural crisis (what he terms the "crisis of profligacy"), a political one, and a military one. In discussing these crises, Bacevich relies heavily on the works of theologian Reinhold Niebuhr, whom he describes as "the most clear-eyed of American prophets." As a potential model against which future historians might analyze current U.S. security policy, Bacevich offers Niebuhr's judgment that every civilization is most pretentious, cocksure, and convinced of its own immortality at the moment it begins to decline.

For Bacevich, the crisis of American profligacy is all too obvious. Be it land, wealth, or material goods, he contends that the accumulation of *more* has characterized our national identity more than most Americans understand or are willing to admit. From the Louisiana Purchase to the current war in Iraq, Bacevich argues that Presidents have adhered almost universally to the American desire for *more* while failing to demand of the people a commensurate level of sacrifice. Citing America's transition over the last 40 years from being the world's leading

producer and creditor to being its leading consumer and debtor, he indicts the American people for their undisciplined pursuit of material "happiness." For Bacevich, the current "great recession" is proof of the "instant gratification" attitude that has paupered the Nation and taught a generation of obese schoolchildren (and adults) that hard work, self-sacrifice, and even the national defense is someone else's responsibility.

Bacevich is equally critical of America's political performance since the Great Depression. He argues that the Federal republic, as established by the Constitution with limited and specific powers, no longer exists. It has been replaced by a vast centralization of power at the Federal level and specifically within the executive branch. Members of Congress, more focused on getting reelected than balancing power, abetted this centralization. Equally guilty are the unseen courtiers who derive their livelihood from this centralization—the press, pundits, and "power elite" who cover, pontificate about, and populate the Federal Government. To Bacevich, none of this would matter if the Federal Government were not grossly incompetent.

The military crisis involves injurious attempts to "reinvent" war, enlarge the size of the Armed Forces, and continue the doctrine of "preventive war." Bacevich defends the troops, attacks their civilian and military leadership, and argues effectively that the failure to articulate and implement a coherent post–Cold War grand strategy further exacerbates our problems. He offers that a generation of leaders has replaced the need for a better appreciation for war's limited effectiveness with derivative strategies based either on specious ideology or military operations completely removed from their larger geostrategic context. Bacevich correctly concludes that the proponents of "shock and awe" or "net-centricity" confuse the enduring *nature* of war with temporary, often technologically determined, changes in the *conduct* of war. Bacevich,

however, saves particular scorn for General Tommy Franks, offering withering analysis of Franks' campaigns in Afghanistan and Iraq and asking rhetorically, "Does knowing Doug Feith is stupid make Tommy Franks smart?"—a reference to Franks' now-famous characterization of the former Undersecretary of Defense as the "stupidest . . . guy on the planet."

Bacevich has written an aggressive and provocative yet eloquent book. Blogs, newspapers, and professional journals are full of opinions and judgments, but none approach *The Limits of Power* in their confident conceptualization and organization of knowledge. Military and civilian defense professionals will find much to consider in this small volume. The crises that Bacevich cites are not intractable, but they will be extremely difficult both to confront and to solve. **JFQ**

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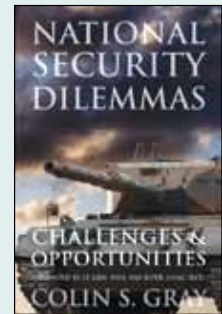
National Security Dilemmas: Challenges and Opportunities
by Colin S. Gray
Washington, DC: Potomac Books, 2009
333 pp. $29.95
ISBN: 978–1–59797–263–5

Reviewed by
DOUGLAS PEIFER

Colin Gray has analyzed a wide array of strategic challenges in the course of his distinguished career,

publishing over 20 books and dozens of articles, and serving on myriad committees, commissions, and panels addressing British and American national security issues. One constant pervades his voluminous scholarly output: Clausewitz's enduring relevance. True to form, in *National Security Dilemmas: Challenges and Opportunities*, Gray hammers home several Clausewitzean themes that he has been emphasizing for years. War is a means to a political end, and one cannot analyze warfare in isolation from policy and politics. Uncertainty, chance, and friction are inherent characteristics of war, and while technology may solve certain problems and challenges, new difficulties surely will arise. War is a duel of wills, and strategists must analyze it in its wider context, to include its social, cultural, and, above all, political dimensions.

These themes will strike Gray's admirers as familiar—indeed, even a bit stale. And as a good Clausewitzean, Gray would be the first to admit that these persistent themes offer no radically new interpretations of the fundamental relationship between warfare, politics, and strategy. Yet where Gray earns his reputation for keen, perceptive thinking is in his elaboration of how these verities continue to assist in understanding the current security environment. In eight chapters, Gray analyzes topics such as defining decisive victory, maintaining effective deterrence, understanding revolutionary change in warfare, and understanding the implications of preemptive and preventive strategies. In each essay, Gray combines general, enduring insights and analysis with specific, contemporary recommendations.

Gray's opening chapter, written in the fall of 2008, seeks to avoid assigning blame for the "arguable train wreck that is American national security" while conveying realist disappointment over the serious,

occasionally "truly gratuitous" mistakes made since 9/11. Rather than dwelling on the past, Gray provides six lessons that may be useful in the future. First, personality, individual judgment, and personal relations are vital ingredients to policy and strategy. Gray cautions that the George W. Bush administration was filled with hugely experienced individuals who nonetheless "suspended their critical intelligence" and based strategy on hopes and dreams. Second, Gray cautions that U.S. leaders must subordinate their proclivity to crusade for democracy, freedom, and open markets, and instead devise strategies that "fit" foreign cultures. Third and fourth, Gray advances the rather unremarkable insights that the U.S. military was not prepared for counterinsurgency operations and that stabilization proved more difficult than anticipated. In the future, the U.S. military must show more flexibility and adaptability, be prepared to combat irregular opponents, and train and equip for stability operations. Fifth, Gray sounds a warning that interstate conflict will not disappear so long as power and influence shape the international environment. Writing from a realist perspective, Gray believes that balance of power concerns will not fade within our lifetimes. Gray's final point is perhaps the most provocative: the shift to capabilities-led defense planning, while laudatory in the absence of a dominant threat, was profoundly astrategic, resulting in the waste of billions of dollars.

Chapters 2 through 7 are revisions of U.S. Army War College Strategic Studies Institute essays originally published from 2002 to 2007, and while the pressing debates of the day flavor a number of these essays, most have withstood the test of time, and all contain nuggets of wisdom. Among the best are Gray's chapters on "the implications of preemptive versus preventive war doctrines,"

"recognizing and understanding revolutionary changes in warfare," and "irregular warfare and the American way of war." Less tightly reasoned and fully developed are his essays on "defining and achieving decisive victory" and "transformation and strategic surprise."

Gray's essay on preemptive versus preventive war doctrines should be required reading for those who persist in using these terms interchangeably. As Gray points out, preemption is uncontroversial, sanctioned by just war theory and generally conceded under international law. Preemption is based on the knowledge that an enemy is about to strike or, as formulated by Daniel Webster in 1837, is restricted to those cases where "the necessity of self-defense is instant, overwhelming, leaving no choice of means, and no moment of deliberation." Prevention, on the other hand, pertains to military action against gathering threats or potential enemy actions. These definitions are well known, but Gray's genius is that he moves beyond the liberal-realist-neorealist debates of 2002–2003 and instead assesses preventive war on its own merits as a grand strategy. He notes that those advocating preventive war too often simply assume it is more reliable than deterrence without recognizing that it is nonetheless war, with all the uncertainty, unpredictability, and friction Clausewitz ascribed to it. As a realist, Gray refuses to rule out preventive war in all cases, but as a strategist and Clausewitzean, he asserts that "military prevention is not, and cannot be, a doctrine, let alone the dominant national security doctrine."

A good many military officers, defense analysts, and planners may be tempted to skip Gray's chapter on revolutionary changes in warfare, content to let the concepts of revolutions in military affairs (RMA) and its offspring, transformation, retire into oblivion. Yet this would be ill advised. Gray provides

a superb overview of how the concept of RMA emerged, and more importantly, situates it within its political, strategic, economic, technological, and geographical contexts. Thoughtful, engaging, and supporting his points with ample historical and contemporary examples, Gray is at his best in showing how and why context is important in assessing military revolution, transformation, and other concepts.

Even the best writers fall short at times, and the chapter on "defining and achieving decisive victory" leaves one with a nagging sense that Gray has set up a scarecrow only to soundly demolish it. He attacks the pacifist refrain that wars never accomplish anything. Wars decided whether Wilhelmine and Nazi Germany would control the European continent, whether South Vietnam would survive as an independent, noncommunist country, and whether the Taliban would continue to rule Afghanistan. Yet the more interesting question of defining decisive victory against insurgents, terrorists, and others is barely touched. Indeed, from the perspective of 2009, the decisive defeat of the Taliban in 2001 seems less definitive. Eager to refute misguided mantras that war is always useless, Gray momentarily overemphasizes war's political utility and neglects Clausewitz' insight that subordination to policy jostles with violence, hatred, and enmity on one hand, and the element of chance on the other, thereby making war both political and unpredictable.

National Security Dilemmas brings together eight thought-provoking essays by one of today's leading scholar-strategists. This eclectic collection offers a Clausewitzean, realist examination of security dilemmas from deterrence to irregular warfare, combining broad macro-analysis with specific recommendations and critiques. This collection should prove

most useful for those unfamiliar with Gray's work or in search of a convenient, single-volume collection of his contributions to the Strategic Studies Institute over the past 7 years. **JFQ**

Dr. Douglas Peifer teaches strategy at the U.S. Air War College. He is a historian by background, with his research focusing on the intersection between military strategy, politics, and culture.

The Great Gamble: The Soviet War in Afghanistan
by Gregory Feifer
New York: Harper, 2009
336 pp. $27.99
ISBN–13: 978–0061143182

Reviewed by
JAMES THOMAS SNYDER

Gregory Feifer, a National Public Radio correspondent in Moscow, returns to the Soviet trauma in Afghanistan, just as that country replaces Iraq in the public debate. Once thought won and relegated to the status of a secondary front in the war on terror, Afghanistan—"the crossroad of empires," Feifer reminds us—has again attracted the attention of the United States, the North Atlantic Treaty Organization, and the broader international community.

The problems now confronted in Afghanistan exist in large part due to events set in motion by the sudden rise of a communist government in Kabul in 1978. Moscow was unprepared for the putsch that brought Hafizullah Amin to power, and his cabal appeared to the Soviets even less prepared to exercise control.

The motives behind the Soviet invasion have long been a matter of mystery and speculation. At the time, it was seen as a naked land grab, the first step through India, Iran, or Pakistan toward the open sea. But the Soviets probably never sought so far-fetched a notion as a year-round port on the Indian Ocean. Steve Coll in *Ghost Wars* wrote that the invasion intended to shore up a friendly but weak communist regime in a country whose ethnic and religious politics the Politburo did not understand, a viewpoint that Feifer shares. Feifer also notes that mutinies by the Afghan army, plus a nascent revolt in Herat, alarmed Soviet authorities enough to warrant an increased stream of weapons, materiel, and advisors.

But at least as important in Afghanistan for the Soviet mind was American regional influence. The Islamic Revolution in Iran, if anything, increased Politburo concern. After the fall of the shah, they reasoned, the Americans would certainly search for other geopolitical points of entry in Central Asia to hem in the Soviet Union.

Intriguingly, Feifer argues that the Soviets did not intend to invade and occupy Afghanistan at all. The historical record, such as exists in the occasionally murky Soviet archives, reveals nothing resembling a direct invasion order. There is simply one page of handwritten notes from a Politburo meeting of December 12, 1979, where the critical decision took place.

The document, written by Konstantin Chernenko—who was not yet General Secretary—notes only that certain "measures" be taken. Defense Minister Dmitri Ustinov, a consummate apparatchik without military experience who was abetted by a diffuse Soviet bureaucracy, in effect executed an invasion without an invasion order.

This may be difficult to believe, given the scale of the "limited contingent" that followed: elements of the 40th Army, including the 108th Motorized Rifle Division (MRD), 5th MRD, 345th Separate Paratroop Regiment, 860th Separate Motorized Rifle Regiment, 56th Separate Air Assault Brigade, 2d Air Defense Brigade, and 34th Composite Aviation Corps. On December 27, 1979, Soviet forces assaulted Herat, Bagram, Kabul, and Kandahar.

Special forces and KGB units had set up in the capital with orders to decapitate the Amin regime and install a replacement, Mohammad Taraki. The operation was badly coordinated. The KGB's botched attempt to poison Amin was discovered when a Soviet embassy doctor in Kabul intervened. No sooner had Amin recovered than Soviet *spetsnaz* units stormed the Taj-Bek Palace outside Kabul, killing Amin in front of the doctor who had aided him and his family.

Given daily experience during the following decade, the unintended nature of the Soviet adventure becomes more comprehensible. Soldiers lived in appalling conditions, fought with substandard gear, and hunted an enemy they did not understand. Local markets were well stocked with fresh fruits and vegetables, modern electronics, and warm clothes they could not find at home. This imbalance—a bizarre inequity for young soldiers of a superpower to experience in so poor a country—quickly corrupted the occupation forces. What began as an exchange of World War II–era rations for fresh produce escalated to the sale of weapons and equipment, theft, looting, and murder. The systemic inadequacies of the Soviet political and economic system compounded the immense violence wreaked by Soviet forces as they seeded the country with land mines, carpet bombed, and destroyed whole villages. With such benefactors, it becomes clear Kabul could never survive.

If the mystery surrounding the invasion remains impenetrable, Feifer unfortunately casts little light on the fateful decision to withdraw. Mikhail Gorbachev advocated a pullout long before he ascended as General Secretary. His agenda seems clear in retrospect, of course, but Feifer only infers that Afghanistan was a distraction from his larger vision. He does not explore how Gorbachev linked Afghanistan to the larger problems he faced.

Given such treatment, it may be easy to forget the scale of the commitment: 620,000 Soviets served in Afghanistan from 1979–1989, even though no more than 150,000 were deployed at a time. The official death count was 12,833, but Feifer reports that number may be closer to 75,000. A staggering 469,685 became ill or wounded, in large measure due to entirely preventable dysentery, hepatitis, and typhus. The Soviets lost 118 jets, 333 helicopters, 147 tanks, 1,314 armored vehicles, and 11,369 trucks.

It would be interesting to explore the historical context of the commitment. The Soviet military consumed 25 percent of the gross domestic product. Soviet military personnel numbered in the millions, armed with thousands of combat aircraft, helicopters, and tanks. Given the experience of the Great Patriotic War, during which 6.3 million Soviet soldiers perished, the Soviet Union could have fought indefinitely in Afghanistan.

But Feifer only hints at such context here. Afghanistan was the Soviet Vietnam, we remember from the time, and Feifer insinuates that Iraq is America's Afghanistan. Then what is the American Afghanistan? Feifer most intriguingly evokes, on the very last page, the wreckage of European imperialism on the shoals of the 1956 Suez Canal adventure. But as with this and other historical analogies, Feifer does not provide enough depth for a proper comparison. **JFQ**

James Thomas Snyder is the U.S. Information Officer on the International Staff at North Atlantic Treaty Organization Headquarters in Brussels.
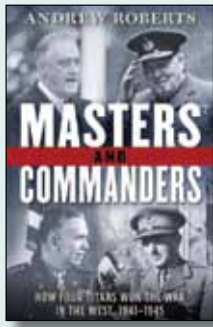
**Masters and Commanders:
How Four Titans Won the War
in the West, 1941–1945**
by Andrew Roberts
New York: HarperCollins, 2009
674 pp. $35.00
ISBN: 978–0–0612–2857–5

Reviewed by
FRANK G. HOFFMAN

This is *not* that Patrick O'Brian novel about British seapower. Rather, it is a superlative account of the management of World War II by the West's two major allies. The "Masters" are President Franklin Delano Roosevelt and his determined counterpart in London, Prime Minister Winston Churchill. The "Commanders" are the respective uniformed subordinates of these elected civilian leaders, General George Marshall and General Alan Brooke. Crafted by gifted British historian Andrew Roberts, the book is part biography, part strategic history, and part study of the "clash of cultures" that is civil-military relations.

In *The Making of Strategy*, Williamson Murray, Alvin Bernstein, and Macgregor Knox noted the important factors that influence the development of strategy: geography, history, the nature of the regime, ideology, economics, and the organization of government and military institutions. However, they neglected to consider one other contingent element: human personality and the interplay of strong-willed allies.

Masters and Commanders is a remedy with particular relevance today. It dissects the roles of personality and character in the interplay of the relationships between these four fiercely strong-willed leaders. The interaction of their biases, animosities, egos, and personalities had a huge influence on the conduct of the war and the strategy that steered the efforts of American and British forces. This, then, is a history of the relationship between "the four chief strategists of the Western Allies, the quartet of power that ultimately crafted the victories that were to come." As the principals were not timid and labored under significant stress, the story is not without emotion.

Roberts is the author of a dozen books, mostly biographies. In all his work, he has been careful with details, and *Masters and Commanders* reflects the same mastery of archival sources, including recently discovered contemporaneous notes from British officials. Robert's brief biographical sketches are delightful. Marshall was self-effacing; Brooke was cold logic on the outside and an emotional wreck on the inside. Marshall was quietly determined to influence Allied strategy, and his remote and seemingly heartless coalition partner was equally bent on preserving his nation's interests.

Churchill is covered in detail, warts and all. Roberts concludes that "he was a genius, and the madcap schemes he occasionally came up with were merely the tiny portion of inevitable detritus that floated in the wash of his greatness." The author fails to capture the elusiveness of Roosevelt as well as James McGregor Burns did in *The Lion and the Fox*, which is absent from the bibliography. However, Roberts offsets this deficiency when recognizing that of the four, "the man who most influenced the course of the war was the one who openly acknowledged that he knew the least about grand strategy: Franklin Delano Roosevelt."

No one should be surprised that Roosevelt and Churchill were continually at odds with their leading military men, and Roberts captures that inherent civil-military cultural clash. Marshall and Brooke were fearless with their masters, whose explosive tempers and extraordinary sense of duty they matched. The situation is exacerbated by what Professor Colin Gray calls the "reciprocal ignorance" of the two spheres that lacked the perspective, background, and knowledge base to appreciate the other side.

Masters and Commanders brings out the benefits of candid, even hotly debated, dialogue. The emphasis is on the "dialogue" and its product. Roosevelt and Churchill dominated the aims but did not dictate policy, and Marshall and Brooke frequently challenged them on the aims and the restraints placed upon means. The Commanders served as a crucial bridge not only to ensure that strategy was both suitable and appropriate but also to maintain the linkages between policy and military plans.

History suggests that civil-military relations are not mechanistic or about the subordination of strategy to policy. The process is a reciprocal one in which masters and commanders interact in a disciplined and comprehensive search for viable solutions. As Eliot Cohen has properly stressed in *Supreme Command*, political and military matters are not separate and distinct spheres of responsibility. The roles overlap, as suggested by Churchill's famous dictum, "At the summit strategy and policy are one." Answers to questions generated by the process should be part of a continuous dialogue, "a running conversation" at the strategic level. Other scholars such as Hew Strachan have joined with Cohen, concluding that the normative model of Samuel Huntington's *The Soldier and the State* "is proving profoundly dysfunctional to the waging of war in the twenty-first century." This is borne out during the many conferences and summits detailed by Roberts. These running conversations certainly did involve ends, ways, and means in an iterative and interactive process that impacted policy as much as strategy.

Masters and Commanders details this harmonization of ends, ways, and means. Roosevelt did not merely set policy and await his commander's proposals for implementation, nor did Marshall and his acid-tongued colleague simply accept goals that were beyond realistic attainment with the means available. The process can be one of cooperative engagement if possible, but if necessary, *collaborative confrontation* must occur. Roberts tells the history of a series of confrontations where the synergy of the collaboration was superior to the sum of the individuals.

In his book *Modern Strategy*, Colin Gray noted that "the human dimension of strategy is so basic and obvious that it often escapes notice by scholars with a theoretical bent." Kudos to Andrew Roberts for reminding us of this enduring but too often overlooked dimension of strategy, and for writing an intricate story of the interplay of politics, policy, and personality. When the stakes were high and tempers were flying, compromise and concerted action were the outcome at the end of the day. At times, the process was tedious, and it was almost always messy. But the result was victory. **JFQ**

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Designing Exercises for Teaching and Analysis
Center for Applied Strategic Learning

Exercises are designed for purposes that can generally be collapsed into two overarching goals: teaching or analysis. The goal of teaching is usually to make theoretical lessons concrete and convey some aspect of the demands that a student might face in applying them. When we use an exercise as an analytical tool, in contrast, we use it as a model that represents some real world problem or, better, class of problems and uses participant actions to generate information about how at least one of the elements of that model impacts decisionmaking. In this article, we discuss design process and examine the ways in which exercise *purpose* impacts its form, particularly its scale. Perhaps controversially, we also cast doubt on the analytical utility of large-scale exercises.

Design Choices

Games successfully used for teaching purposes appear to incorporate a number of factors. They are rich and detailed enough to excite and compel participants. They have many different functional roles for participants, giving them some representation of the experience of performing those duties, the more realistic the better. They accurately convey the complexity of the real world and require them to make responses to sudden developments, the more unexpected the better. The lessons that participants learn and are to apply to the real world have more to do with process than outcome and often simply underscore the difficulty of making choices in the thick of things.

The more specific and detailed the scenario or exercise, however, the more limited the conclusions that can be extrapolated from it to other problems or situations. If we are conducting an exercise to explore the contours of some ill-defined future problem, for instance, it is crucial that we be able to justify why we reach certain conclusions or how we generalize lessons learned from an exercise. Answering the "How do I know that I know that?" question is routine in the social sciences, including in qualitative work common in political science and sociology, but not always thoroughly discussed in the exercise design and evaluation community. Nevertheless, it is crucial to a defensible analysis.

An exercise that will be the basis of or contribute to an analytical study needs to incorporate features that allow investigators to generalize some findings and explain why their conclusions are not contingent on a random scenario detail or quirk of a particular participant. Here, then, parsimony trumps detail, and we are more interested in the smallest number of shared factors that might be causally related to outcomes and solutions to a problem. There is a variety of interesting work on the ways in which qualitatively specified games can be used analytically, ranging from being bundled together to validate formal mathematical models to serving as mechanisms for aggregating the expert knowledge of participants.

Key Differences

The elements of good exercise design for teaching and analysis can be somewhat different for the simple reason that the lessons to be learned are different. Analytically, what we learn from tabletop exercises usually has to do with whether the model of the problem described in the scenario introduces the right independent variables, whether others should be added, how they could be refined and their relative weight, and how differences in them might require different actions and result in different outcomes.

Exercises for teaching purposes are rooted in an assumption of the value of experiential learning, that giving participants a visceral feel for the exigencies of policy decisionmaking will be an effective way of making theoretical lessons they have learned concrete. For this reason, exercises are frequently used as capstones to courses, particularly at U.S. graduate military education institutes, and a single iteration of them more than suffices for teaching purposes, though problematic for an analytical exercise.

American, Australian, and British airmen work together during Global Mobility Wargame at U.S. Air Force Expeditionary Center, Fort Dix, New Jersey

U.S. Air Force (Scott T. Sturkol)

Each year the U.S. graduate military colleges collaborate to conduct a joint campaign planning exercise called the Joint Land, Aerospace, and Sea Simulation. A multiday, multimove exercise that requires a management team of some 50 faculty and professionals drawn from across the colleges and several governmental agencies, it offers over 100 students the opportunity to practice strategic level planning amid several simultaneous unfolding crises, posited to take place a decade in the future. Participants practice everything from speaking to the press to playing Cabinet-level officials. Plans are applied, revised, and critiqued at each move of the game. Observing the exercise, we see that an important lesson learned for students is the sheer amount of coordination that must occur and the extraordinary challenges of doing so, given all the important stakeholders and decisionmakers and synchronicity of events.

Large exercises encompassing a number of crises but only a single iteration are exactly the opposite of the structures necessary to doing more analytical work with them. The key to discussing conclusions is *reproducibility of findings* (observing the same thing over many iterations of an exercise) and *representativeness of sample* (how similar the participants are to the population of individuals who might be making decisions in the real world).

Tradeoffs

Most design choices make some tradeoffs. As we expand either the number of roles or the amount of scenario detail, the longer the exercise will need to be, both in terms of moves and total duration—and this is costly. Designers always make a compromise between the details that add real world fidelity to a scenario and layering so many that every choice and outcome is seen as contingent on

something internal to the scenario, preventing lessons learned. The other way to characterize this tradeoff is one of generalizability versus representativeness. We can, roughly, either design an exercise that allows us to compare the impact of a few important characteristics to try and learn something empirically valid about a real world problem. Or we can create an environment so similar to a single real world problem that participants believe they are actually making decisions specifically about it.

The former approach is important to a design that allows serious analysis, while the latter approach can be a powerful teaching tool, similar to rehearsing a routine, if more interactive and dynamic, and can teach participants important skills such as negotiation, the function and impact of different roles, and how to make decisions in the face of stress and time limits. The biggest difference between

exercises for teaching and analytical purposes is that they weigh this tradeoff in opposite directions.

There is considerable risk in taking an exercise that has worked well for teaching and assuming that will be an effective basis for analysis because these tradeoffs cannot be wished away or blindly ignored. The large-scale exercises that abound in the security policy planning community are often ill suited to the task of analysis, whether for operational planning or strategic policy. For analytical purposes, we certainly need a representative sample of participants and a valid scenario, but, perhaps most importantly, multiple iterations of the exercise. A single iteration may not allow us to conclude much of anything about a problem, let alone its ideal solution, because it generates too small a sample.

Historians seldom fail to point out that the wargames run at the Naval War College in Newport during the 1920s and 1930s successfully predicted virtually every naval move used in the Pacific during World War II. The key was the sheer number of wargames conducted—some 300 in the interwar period. In contrast, the Millennium Challenge 2002 exercise, a major wargame conducted by U.S. Joint Forces Command to validate doctrinal changes, grew quite controversial after exercise designers found that one set of actions appeared overwhelmingly effective, and adjusted the exercise to minimize those factors.

Once designers have identified the topic of their qualitatively specified exercise or policy game, they must proceed to make some design choices. The goals of the exercise, primarily whether for teaching or analytical purposes, will drive design. At this stage, however, designers will be forced to make inevitable tradeoffs that are best addressed forthrightly in the discussion of the lessons to be learned. The methodology and process of designing a game for analytical purposes is similar to that of case study research, and a great deal of flexibility is engendered by the choice to do qualitative research. This choice, however, does not eliminate entirely the need to match methodology to conclusions. A little reflection on the purpose of the exercise yields benefits in terms of identifying the appropriate form. **JFQ**

Joint Doctrine Update

Joint Chiefs of Staff J7 Joint Education and Doctrine Division

The joint doctrine development community (JDDC) recently held the 43d Joint Doctrine Planning Conference. Participants included the Joint Staff, combatant commands, Services, Air Land Sea Application Center, multiple Service schools, and many international allies. As such, it provided an ideal forum not only to synchronize the efforts of the JDDC, but also to launch some of the groundbreaking discussions affecting today's doctrine.

One such discussion centered on the recently completed Joint Doctrine Survey. Of note was the survey's focus on providing a "voice to the customer." Participation was excellent and generated nearly 2,500 responses from the combatant commands alone and another 4,500 respondents on the Joint Doctrine, Education, and Training Electronic Information System (JDEIS) Web portal. By comparison, the 2006 survey had only 750 responses total. The survey indicated a tremendous increase in both its perceived value and usage among the combatant commands and Service schools.

Another important aspect of the planning conference is that it is the preferred venue for the introduction of new doctrine proposals. As such, the Joint Staff J65 and U.S. Army Signal Center provided a decision brief on joint electromagnetic spectrum operations (JEMSO) for the purpose of gaining approval to develop a discrete JEMSO joint publication. This proposal stemmed from a concern that current joint force thinking on the subject is ad hoc. It highlighted that lessons learned from Iraq and Afghanistan have identified significant frequency interference issues, and the plethora of electronic warfare systems today have served only to exacerbate an already complex and oversaturated electromagnetic operational environment. Following the briefing, conference participants unanimously approved the development of a separate JEMSO joint publication and assigned the Army as author. Work began in the summer of 2009.

Another topic of great concern throughout the doctrine community is cyberspace. The Joint Staff J5 Cyber Division provided an information briefing to the planning conference on cyberspace strategic plans and policy fundamentals. It presented cyberspace as a national security issue, outlined the growth of the threat, and detailed some of its characteristics. Additionally, it showed how cyberspace functions converge and are executed throughout the interagency community, including Title 6 (homeland), 10 (military), 18 (crime), 44, and 50 (intelligence) responsibilities. The brief listed key cyber-security organizations within the Department of Defense, outlined a military cyber-security organizational construct, and enumerated 12 comprehensive cyber-security initiatives.

Directly linked to this discussion is the greater doctrine communities discussion surrounding cyberspace operations. Over the past several months, the Joint Staff J5 and J7 have been working closely with the JDDC to incorporate *cyberspace* and *cyberspace operations* language in joint doctrine. Thus far, both definitions appear in Joint Publication 1–02, *DOD Dictionary of Military and Associated Terms*. Recently, a proposal to modify the definition of cyberspace operations was staffed.

This joint J5 and J7 proposal seeks to properly align the definition with the doctrinal "ends, ways, and means" paradigm regarding effects. Currently, *cyberspace operations* is defined as the "employment of cyber capabilities where the primary purpose is to achieve military objectives or effects in or through cyberspace. Such operations include computer network operations and activities to operate and defend the Global Information Grid." The new proposed definition of the term is the "employment of cyber capabilities where the primary purpose is to achieve objectives in or through cyberspace. Such operations include computer network operations and activities to operate and defend the Global Information Grid."

This proposal recognizes that the November 10, 2008, definition treats "objectives" and "effects" as synonyms regarding the outcome of cyberspace operations. Doctrinally, however, *objectives* relates to "ends" whereas *effects* relates to "ways." This proposal brings the definition into alignment with broader doctrine by placing effects into proper sequence regarding objectives.

We will continue to challenge the doctrine community by ensuring that we are on the leading edge of the integration of lessons learned and identifying the best practices to be cited into joint doctrine. Doctrine development and assessment will remain the core focus areas with the implied task of identifying potential subject areas for future inclusion.

JPs Revised or Under Review

JP 1–05, *Religious Support to Joint Operations*

JP 2–01, *Joint and National Intelligence Support to Military Operations*

JP 2–01.3, *Joint Tactics, Techniques, and Procedures for Joint Intelligence Preparation of the Operational Environment*

JP 3–0, *Joint Operations*

JP 3–02, *Joint Doctrine for Amphibious Operations*

JP 3–02.1, *Joint Tactics, Techniques, and Procedures for Landing Force Operations*

JP 3–06, *Doctrine for Joint Urban Operations*

JP 3–07, *Stability Operations*

JP 3–07.2, *Joint Tactics, Techniques, and Procedures for Antiterrorism*

JP 3–08, *Interagency, Intergovernmental Organization, and Nongovernmental Organization Coordination during Joint Operations*

JP 3–09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support*

JP 3–10, *Joint Security Operations in Theater*

JP 3–13, *Information Operations*

JP 3–13.2, *Psychological Operations*

JP 3–13.3, *Operations Security*

JP 3–13.4, *Military Deception*

JP 3–14, *Space Operations*

JP 3–17, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*

JP 3–22, *Foreign Internal Defense*

JP 3–24, *Counterinsurgency*

JP 3–26, *Counterterrorism*

JP 3–29, *Foreign Humanitarian Assistance*

JP 3–30, *Command and Control for Joint Air Operations*

JP 3–31, *Command and Control for Joint Land Operations*

JP 3–40, *Joint Doctrine for Combating Weapons of Mass Destruction*

JP 3–52, *Joint Doctrine for Airspace Control in the Combat Zone*

JP 3–53, *Doctrine for Joint Psychological Operations*

JP 3–61, *Public Affairs*

JP 4–01.5, *Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations*

JP 4–03, *Joint Bulk Petroleum and Water*

JP 4–05, *Joint Mobilization Planning*

JP 4–06, *Mortuary Affairs in Joint Operations*

JP 4–08, *Joint Doctrine for Logistic Support of Multinational Operations*

JP 4–09, *Joint Doctrine for Global Distribution*

JP 5–0, *Joint Operation Planning*

JP 6–0, *Doctrine for C4 Systems Support in Joint Operations*

Looking for the latest in doctrine? Check out the JDEIS Web portal at https://jdeis.js.mil

"A campaign against extremism will not succeed with bullets or bombs alone."

—President Barack Obama March 27, 2009

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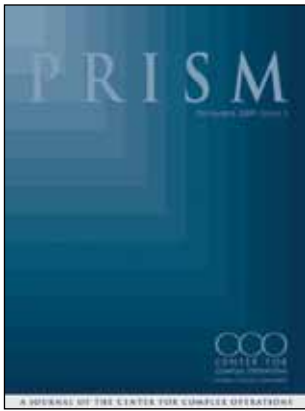
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"As President, my greatest responsibility is to protect the American people…We are in Afghanistan to confront a common enemy that threatens the United States, our friends and allies, and the people of Afghanistan and Pakistan who have suffered the most at the hands of violent extremists. So I want the American people to understand that we have a clear and focused goal: to disrupt, dismantle, and defeat al Qaeda in Pakistan and Afghanistan, and to prevent their return to either country in the future…To achieve our goals, we need a stronger, smarter and comprehensive strategy."

—President Barack Obama
March 27, 2009