JFQ

FUTURE OF DEFENSE

CYBER STRATEGY

2011 ESSAY CONTEST WINNERS

Inside

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ABOUT THE COVERS

Cover: F–15E Strike Eagle is refueled by KC–10A Extender during Operation *Odyssey Dawn* (Tyler Placie/U.S. Air Force). Table of contents (left to right): Soldiers navigate rice paddies and cornfields on combat patrol in Alingar District, Afghanistan (Ryan Crane/U.S. Air Force); Sailor mans primary flight control system during flight operations aboard USS *Ronald Reagan* in Indian Ocean (Shawn J. Stewart/U.S. Navy); Marines return Afghan boy to his village aboard V–22 Osprey after treatment at Camp Bastion medical center (Charles T. Mabry II/U.S. Marine Corps); and Airman prepares to swap engine on KC–135R Stratotanker (Ken Johnson/U.S. Air Force).

LETTERS

To the Editor— In "Who Is a Member of the Military Profession?" (*JFQ* 62, 3d Quarter 2011), Colonel Matthew Moten, USA, brings up some valuable points in his discussion of the professionalization of career enlisted Servicemembers, but it would be useful to know his data points. His final arguments are directed at the noncommissioned officer (NCO) corps (not petty officers), so I would like to know if his data are based on his experiences *across* the Services, or mainly based on his observations and study *within* his own branch.

Though observant of and an occasional researcher of other Services' use of their professional enlisted forces, I speak only about the modern U.S. Army NCO corps when addressing Colonel Moten's point that "their [the NCO corps] professionalization is incomplete in the areas of formal and theoretical education, accumulation of specialized expertise, and autonomous jurisdiction over a body of professional knowledge. The NCO corps is professionalizing, but not yet professional." I understand that this assertion is not the same as stating the "NCO corps is unprofessional," which one could easily and incorrectly conclude. I imagine a parallel could be drawn with the theory that an individual found *not* guilty of a crime is not saying he is innocent.

I would suggest that the Army began professionalizing its NCO corps in October 1975 when the Deputy Chief of Staff for Personnel started phasing in the Enlisted Professional Management System (EPMS). Before that, career programs for enlisted Soldiers were spotty at best, and most have heard the story that a Soldier's stripes resided in the regiment. If an NCO were to move, it was often at a loss of rank. Not only was EPMS a major jumpstart to professionalizing the enlisted force, but 3 years earlier, an NCO college had been created: the U.S. Army Sergeants Major Academy. I would be curious as to what length Colonel Moten went through to evaluate the current curriculum in determining the breadth and width of the sergeant major course, particularly in how it relates to his definition of "formal and theoretical education."

One would have to ask what the measure of the "attainment of specialized expertise" is, and how one would know when the Army NCO corps (or any other professional enlisted force) has achieved specialized expertise, and by whose standards. Is there an established peak or defined scale by which one measures individual or group progress, other than to say, "You are progressing"? It seems that comment would be nebulous at best considering that Colonel Moten never seems to point out anything where the Army NCO corps lacks specialized expertise. Nor does he contrast how other groups have mastered specialized expertise over the NCO corps. Army NCOs draw their skills, knowledge, and attitudes from policies that lay out their roles and responsibilities. I try to use *Army Command Policy and Procedures* (Army Regulation [AR] 600–20) as a guideline, which has been influenced by a successive group of Army leaders who have laid out the responsibilities of the NCO corps vis-à-vis the NCO Support channel. A quick look shows the current 10 functions of the NCO Support channel as:

- transmitting, instilling, and ensuring the efficacy of the professional Army ethic
- planning and conducting the day-to-day unit operations within prescribed policies and directives
- training of enlisted Soldiers in their Military Occupational Specialty as well as in the basic skills and attributes of a Soldier
- supervising unit physical fitness training and ensuring that unit Soldiers comply with the weight and appearance standards of AR 600–9 and AR 670–1
- teaching Soldiers the history of the Army, to include military customs, courtesies, and traditions
- caring for individual Soldiers and their families, both on and off duty
- teaching Soldiers the mission of the unit and developing individual training programs to support the mission
- accounting for and maintaining individual arms and equipment of enlisted Soldiers and unit equipment under their control
- administering and monitoring the NCO professional development program, and other unit training programs

- achieving and maintaining courage, candor, competence, commitment, and compassion.

If this is what is expected from the NCO corps, one would have to measure against these tasks to determine when expertise has been achieved. Of course, if the problem is that these are not the correct 10 functions of the NCO Support channel, that is an entirely different discussion, which is not addressed in Colonel Moten's article.

I believe recent developments in the Army NCO corps have mostly negated the remainder of his argument. We recently celebrated the second year of the Institute for Noncommissioned Officer Professional Development (INCOPD), which is dedicated to the advancement of professional military education for NCOs. Additionally, the Command Sergeant Major Corps was entrusted with leading the development and education of NCOs with the appointment of an enlisted Commandant of the Sergeants Major Academy. Recent efforts—such as the INCOPD program of life-long learning, structured self-development (SSD), and career tracker—bridge "the operational and institutional domains of Army training for enlisted Soldiers. From Private to Command Sergeant Major, SSD will ensure learning is continuous and enduring."

My last point is on the concern of a lack of "autonomous jurisdiction over a body of professional knowledge." I suggest the triad of the Sergeant Major of the Army, the NCO-led Sergeants Major Academy, and INCOPD, under the direction of the U.S. Army Training and Doctrine Command's Command Sergeant Major, fills the bill for the "autonomous jurisdiction," but in a hierarchical organization such as the Army, who truly self-governs or acts independently? I suggest those three positions act autonomously as a platoon leader on patrol or a company commander maneuvering his forces.

—**Daniel K. Elder**
Command Sergeant Major, USA (Ret.)

To the Editor— I applaud Colonel Matthew Moten's effort to define who is a member of the military profession ("Who Is a Member of the Military Profession?" *JFQ* 62, 3d Quarter 2011), but I am concerned that his definition is too historically based (it is probably an occupational hazard).

The future security requirements of the Nation demand a broader definition that includes civilians. For example, the intelligence field has many civilians educated at the National Defense Intelligence College who are actively participating in military operations. Is the person who identifies the target any less a part of the process than a person who pulls the trigger? Most modern enemies would not stop to differentiate as strictly as the colonel seems to want.

I remember General George Joulwan's motto for the Bosnian operations: "One Team, One Fight." Recently, civilian instructors from Fort Leavenworth demonstrated this again by deploying to U.S. Africa Command for involvement in recent contingency planning. As Colonel Moten notes, the military profession is a lifelong calling, and I would add that it is a broad-based collegial effort.

—**James Crick**
Instructor,
U.S. Army Command and
General Staff College

To the Editor— I write in response to William F. Owen's letter (*JFQ* 61, 2d Quarter 2011) regarding my article co-authored with David Kilcullen in *JFQ* 60 ("An Actor-centric Theory of War: Understanding the Difference Between COIN and Counterinsurgency").

Our analysis is indeed built upon a taxonomy of warfare rather than a new theory of warfare. However, we never purported to provide the latter, but simply to open the debate on a new theory that better reflects the realities of conflict in a decidedly post-Westphalian world. (Alas, authors rarely choose the titles for their work; that is in the purview of the all-mighty Editor, so if Mr. Owen feels hard-done-by given

the title of our article, that is a matter for him to take up directly with the editors of *JFQ* and not us!)

As for the remark that irregular warfare is solely conducted by irregular threat groups, I think SEAL Team Six, the heroes of Abbottabad, would strenuously disagree. Irregular warfare describes a type of warfare, not just a type of actor. (This is in fact recognized in the official Department of Defense Joint Operating Concept for Irregular Warfare.)

With regard to our discussion of irregular versus regular or conventional warfare, the main point was not simply to note that irregular warfare occurs three times as much as regular conflict but to illuminate what the word *regular* implies and how it distorts development of doctrine and planning for future capabilities. Surely, if history demonstrates conclusively—as the Correlates of War Database proves—that nations most often go to war with nonstate actors, then this reality should be reflected in not only how we think about war, but also how we prepare for it. This is far beyond semantics.

I am mystified by Mr. Owen's comment, "I am struggling to think of any useful description of warfare 'based on putative generational changes in warfare or the asymmetry of combatants' that is in common use." Really? A casual Google search for the terms *fourth generation warfare* and *asymmetric warfare* generates 126,000 and 656,000 hits, respectively (and that is without using quotation marks to limit the search). In fact, both the U.S. Army and Department of Defense have organic elements that use the phrase *asymmetric warfare* in their official titles.

While I too am a great admirer of the strategic master Colin Gray, he must be recognized as planted firmly in the Clausewitzian camp, a fact the good professor openly admits. All I would suggest is that since the Prussian master himself only devoted five pages of his *On War* to the topic of irregular warfare—and was not a great fan of it at all—his work is of most general application in the interstate arena of war and has decidedly limited use

in nuanced analysis of globally motivated violent nonstate actors such as al Qaeda (not to mention nonkinetic threats such as the Muslim Brotherhood). For a modest reworking of Clausewitz's "wondrous trinity" for use in the current threat environment, Mr. Owens could refer to my piece entitled "The Age of Irregular Warfare: So What?" (*JFQ* 58, 3d Quarter 2010).

Finally, General Sherman did indeed also state that "war is war." However, our analysis was not focused on civil wars (which fall under a special category all their own), but on the unique challenge posed by nonstate actors such as al Qaeda or the Taliban. That is why General Ospina's version of the phrase was chosen, given that he is recognized as dealing the death blow to the FARC of Colombia—a threat that far more resembles the numerous challenges that the United States faces today than do the forces of the Confederate South.

—**Dr. Sebastian L.v. Gorka**

General John M.D. Shalikashvili, USA

IN MEMORIAM

How General John Shalikashvili "Paid It Forward" to 500,000 Others

By ANDREW MARBLE

The world lost a great warrior-diplomat with the recent passing of General John Malchase David Shalikashvili, USA. The General will likely be most remembered for his tenures as Chairman of the U.S. Joint Chiefs of Staff (CJCS) from 1993–1997, as Supreme Allied Commander Europe (SACEUR) from 1992–1993, and as Assistant to CJCS General Colin Powell from 1991–1992. Notable as well is General Shalikashvili's distinction as the first draftee, the first immigrant, and the first graduate of Officer Candidate School to rise to the position of Chairman.

Yet among his many achievements, it was Operation *Provide Comfort*—the first major international humanitarian crisis ever tasked to the U.S. military—that was General Shalikashvili's defining moment.

At a 1992 ceremony awarding the General his fourth star prior to being promoted to SACEUR, General Powell, CJCS

at the time, told the audience that General Shalikashvili had "worked a miracle" in northern Iraq.

Indeed, a miracle was required. For it was a crisis of epic proportions that had arisen in northern Iraq in April 1991. Over 500,000 Iraqi Kurds—men, women, and children—were trapped in the inhospitable mountains along the Turkish border. They had been chased out of the Iraqi lowlands by the Iraqi military. It was payback for a failed Kurdish attempt to overthrow Saddam Hussein in the immediate aftermath of the first Gulf War. Barred from crossing the border by a fearful Turkey, and expecting that they would be shot or even gassed if they returned home, the Kurds were in dire straits. Subject to the harsh mountain elements and lacking food, water, sanitation, and shelter, the refugees were dying at a rate of about 1,000 per day.

The United States responded by launching Operation *Provide Comfort*. Then-

Lieutenant General Shalikashvili, who was serving in Germany at the time, was tapped by SACEUR General John Galvin, USA, to head this massive rescue attempt. General Shalikashvili had a reputation as an intelligent, hardworking, and low-key officer skilled in diplomacy and logistics.

The choice was even more fitting because General Shalikashvili understood what it was like to be a refugee. He was born in Warsaw, Poland, in 1936 to refugee parents who had fled the Russian Revolution. After the violent Warsaw Uprising of 1944—which the family survived by hiding in cellars and scurrying through sewer pipes—he too became a refugee. The Shalikashvilis fled westward to Germany, their train coming under Allied air attack along the way. They settled in the Bavarian village of Pappenheim,

Dr. Andrew Marble is currently writing a biography of General John Shalikashvili. A preview of the biography is available at www.shalibiography.com.

where they were supported by the kindness of relatives and assistance from the International Refugee Organization. The Shalikashvilis were able to emigrate to the United States in 1952 with the help of distant relatives who provided sponsorship, a safe ocean passage, housing, jobs, and even college scholarships. These benefactors "didn't know us from beans," General Shalikashvili would later recall.

Almost four decades later, this former World War II refugee found himself at a temporary command headquarters in Incirlik, Turkey, faced with the herculean task of rescuing these 500,000 Gulf War refugees.

What a complex operation it would be. Over 35,000 soldiers from 13 countries and volunteers from over 50 nongovernmental organizations (NGOs) would be involved. How does one coordinate so many national armies or coax mutually distrustful soldiers and NGO workers to cooperate? Just imagine overseeing the largest airdrop in history, one that exceeded even the scope of the Berlin Airlift. There was also the logistical task of quickly building temporary refugee camps and way-stations, and then undertaking the delicate diplomatic mission of convincing tribal leaders to urge the Kurds to return home. Moreover, there was the challenge of keeping the Iraqi troops at bay, requiring equal parts diplomacy and displays of raw military power. Shalikashvili adroitly directed all of this—and in the critical glare of the international media spotlight.

There was no blueprint to follow for this unprecedented operation. It could have turned out to be a nightmare, but somehow General Shalikashvili jerry-rigged a miracle, bringing an end to the suffering and death and persuading 500,000 Kurds to willingly return to their homes in Iraq in an astonishingly short 90 days. No wonder Chief of Staff of the Army General Gordon Sullivan would later liken General Shalikashvili to the great jazz improvisational artist Dave Brubeck: highly trained in the classical approach but able to operate successfully, almost magically, in new conceptual territory.

What deep motivations might have inspired General Shalikashvili to such a virtuoso performance of leadership?

At the ceremony where General Shalikashvili received his fourth star, General Powell had also lauded him for being "not only a gifted leader but a sensitive human being," one who "understood what it was to be a refugee."
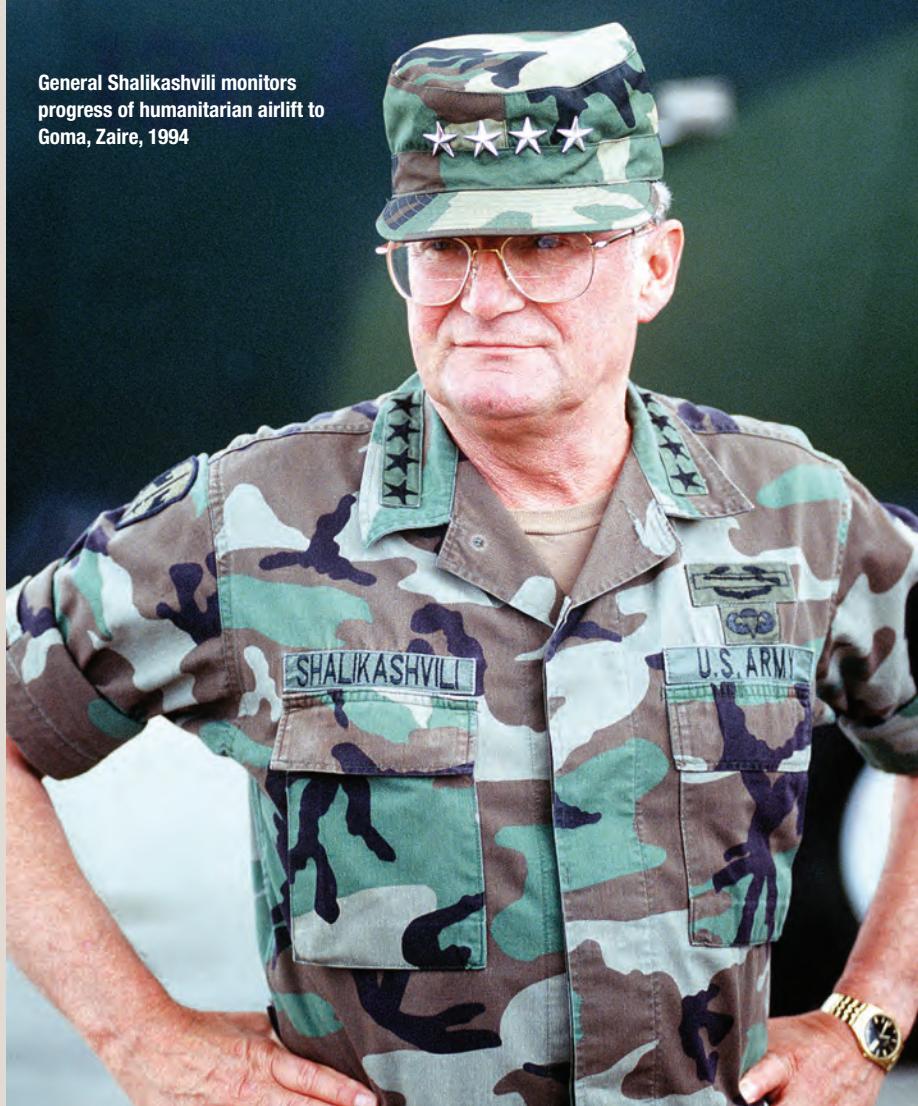
And indeed, many times during the operation, General Shalikashvili would visit the Kurdish camps. As he strolled among the makeshift tents, he would seek out the refugee children, particularly the orphans. They would chat together—and laugh. Asked once about those visits to the camps, the General replied, "When you see youngsters who are muddy and dirty and near death, and then see them a few weeks later cleaned up and playing and feeling like kids again—if you walk away from that without your heart beating fast, then you are made out of something different than I am."

General Shalikashvili jerry-rigged a miracle, bringing an end to the suffering and death

David Halberstam fittingly wrote that General Shalikashvili had "an immigrant's special appreciation for America and a belief that this country, not just in the eyes of its own citizens, but in the eyes of much of the world, was the place the least fortunate turned to as the court of last resort." When the crisis in the Iraqi mountains occurred, the General thus willingly answered the call. All his leadership gifts were called into play, but it was with a heart attuned to the refugee plight, a sense of indebtedness to past benefactors, and the desire to pay it forward to 500,000 others that General Shalikashvili "worked a miracle" in northern Iraq. **JFQ**

General Shalikashvili monitors progress of humanitarian airlift to Goma, Zaire, 1994

U.S. Air Force (Andy Dunaway)

Executive Summary

General John M. Shalikashvili greets resident in Kaposvar, Hungary, during Operation *Joint Endeavor*, January 1996

*J*oint Force Quarterly has succeeded over the years due in no small part to the mentoring of its publisher, the Chairman of the Joint Chiefs of Staff. This issue is the last produced under the leadership of Admiral Mike Mullen, who has been a constant source of support for our work and that of our contributors. *JFQ* will remain, as he and each of his predecessors intended, a forum for open and frank discussion of those issues that matter to the joint force. We wish Admiral Mullen fair winds and following seas.

We open this issue by noting the passing of the 13th Chairman of the Joint Chiefs, General John Shalikashvili, USA. His family has approved an in-depth article on his service that we will publish in a future issue. Every Chairman since General Colin Powell has championed the mission of *JFQ* and joint professional military education (JPME). General Shalikashvili supported General Powell's vision for 15 issues of *JFQ* (nos. 2–16), helping to cement the journal's place as a platform for discussion of matters of substance for the joint force. In his first column, General Shalikashvili had these thoughts:

There are no boundaries on who should be writing for this journal. Napoleon was a young and relatively unseasoned officer when his brain was forming the electrifying ideas that would revolutionize warfare and overpower nearly every army in Europe. A little over a century later, a young, medically discharged captain named Liddell-Hart was struggling to get Britain's senior military leaders to hear his controversial views on warfare. Unfortunately, his own military wouldn't listen, but its future enemy did. When it comes to good ideas, neither rank nor age confers a monopoly.

JFQ is intended to stay at the vanguard, to raise and air controversies, to tell us what we don't understand. Since World War II, we have moved a long way toward jointness. It has been a prolonged march, punctuated by occasional disagreements, but ushered by a recognition that unity is dangerous as a battlefield advantage over disunited opponents.

But jointness is not a science, it is surely not static, and the march is by no means over. We need this journal, we need it to be open-minded, and above all it must be accessible. When you think back to General Billy Mitchell's frustrating crusade to educate the Armed Forces about the dawn of airpower, General George Marshall's tireless efforts to form a unified military establishment, or the more recent efforts by our own Congress—in the face of considerable military stubbornness—to formulate and pass the Goldwater-Nichols Act, it only emphasizes why we need JFQ. There is always room for improvement and there is a ceaseless challenge to adjust to new developments.

In the past four years alone, our Armed Forces participated in 29 major joint operations. Each and every one has been different. They have ranged from a large-scale conventional war in the Gulf through the embargo pressures we are even now applying against the dictators holding Haiti in their grip. Withal there are countless new lessons and observations which impact on the future of jointness. At the same time, literally hundreds of possible reforms, criticisms, and suggestions are percolating inside the think tanks that ring Washington, within our own Congress, and between ourselves. They need to be explored, their strengths assessed, and their warts exposed. We have to distinguish between those worth embracing and those that are dysfunctional or risky.

In his last column, General Shalikashvili discussed the results of the recently published inaugural Quadrennial Defense Review Report, which was featured in that edition. The Chairman gave support to continuing to work on the issues of the day, as the report signaled the need for serious reform within the Department of Defense (DOD). His closing words in the column were just as powerful then as they are today and serve as a reminder of what *JFQ* supports as we go forward: "To achieve the goal of a trained and ready force today and tomorrow, everyone—in Congress, the Department of Defense, and the Active, Reserve, and civilian components—has a key role to play. Only by working together in a spirit of cooperation can we realize the greatness the Nation expects and deserves in the new century." As General Shali would have expected, *JFQ* will continue to support contributors who seek to explore ideas for the future of the joint force and the world in which it operates.

This issue's Forum debuts a series of interviews with the Joint Chiefs by talking with General Norton Schwartz, U.S. Air Force Chief of Staff. General Schwartz has logged more joint time than any of his fellow chiefs and has a unique perspective on the Air Force and on the joint force of today and tomorrow.

In addition, the Forum presents five articles by authors with different views on the future of national security, force structure, and defense strategy. First, RAND researchers Paul Davis and Peter Wilson discuss the near-term crisis in defense planning and stress "the need for vigorous and competitive exploration and competition of ideas." Next, Douglas Macgregor offers an insightful concept that he believes would meet most of the constraints Davis and Wilson discuss: the fielding of a force design "structured and equipped for dispersed, mobile warfare inside an integrated maneuver-strike-intelligence, surveillance, reconnaissance (ISR)-sustainment complex that combines the Nation's ground maneuver forces with strike, ISR, and sustainment capabilities from all of the Services." Built with joint command and control as a basis, this design is seen by Colonel Macgregor as best able to adapt rapidly to the range of potential engagements our joint and coalition forces will encounter across the spectrum of warfare.

Two members of the Air Staff's Studies and Analyses, Assessments, and Lessons Learned Division, Mark Gallagher and Kent Taylor, suggest a new method to evaluate alignment of the DOD budget with combatant command operational requirements. Gallagher and Taylor provide insights on how their proposal could be implemented while identifying the advantages and risks in doing so.

Next, two 2011 National War College graduates, Commander Peter Phillips, USN, and Colonel Charles Corcoran, USAF, provide a new approach to the U.S. national security structure that seeks to solve the continuing problem of achieving an efficient and effective coordinated executive branch response to a national crisis. The final Forum article, by recent Naval War College graduate Colonel Sean Larkin, USAF, takes on the issue of "tailored deterrence," arguing that this concept and our current joint doctrine are out of step with the canon of existing deterrence theory.

As always, we are pleased to present the three winning essays from the 2011 Secretary of Defense and Chairman of the Joint Chiefs of Staff Essay Contests. The Secretary of Defense Essay Contest winner, Colonel Justin Davey, USAF, provides an in-depth look at one of the strategic ingredients of our national security: permanent magnets. The winners of both categories in the Chairman's contest capitalized on a theme prevalent among this year's entrants. Steve Coonen, of the Office of the Secretary of Defense, assesses China as less of a concern to our security than many would have us believe, and Colonel Daniel Larsen, USA, tells us that we should not demonize China but keep monitoring their progress in all aspects, not just military capability, while continuing to be engaged at all levels of their society and maintain the traditional balance of power in the region.

The Commentary section has a pair of interesting works that should add to our

University students his keys to successful strategic leadership. Continuing on the strategic leadership theme, we offer three JPME-related articles and one piece that focuses on how to go forward in the area of strategic airlift. On the JPME front, Captain Doug Waters, U.S. Navy faculty member at the U.S. Army War College, presents how war colleges should develop strategic thinkers, a critical requirement that has come under some fire of late. Mark McGuire from the Industrial College of the Armed Forces provides his college's approach to the same problem. Commander Scott Carpenter suggests that DOD identify and implement a specific career management plan for joint professionals, a plan he sees as necessary to strengthen our joint organizations. The reader can be the judge of the merits of each case, and in future editions, we look forward to continuing and expanding this discussion on JPME. Finally, Lieutenant Colonel Michael Grismer, USAF, offers an article on how best to increase our airlift with more creative and cost-effective use of the Civil Reserve Air Fleet.

The Recall section is back, offering an interesting recent history article on Afghanistan by Colonel R.D. Hooker, USA (Ret.), of the North Atlantic Treaty Organization Defense College, who details his experiences in and evaluates the impact of Combined Joint Task Force–82. Rounding out this issue are four engaging book reviews along with J7's joint doctrine update and an important discussion on doctrine from Lieutenant Colonel Mark Wastila, USMCR, who presents a well-reasoned approach of how to improve joint fires support to special operations. We are planning to offer more book reviews on the NDU Press Web site to keep readers up to date on new publications in a timelier fashion than a quarterly journal can allow.

At *Joint Force Quarterly*, we continue to work hard at bringing you the best ideas for and from the joint force for your consideration and discussion. We also congratulate the 2011 Secretary of Defense and Chairman of the Joint Chiefs of Staff Essay Contest winners and hope to see great things develop from their work. Each author has readily demonstrated that we can count on your support in continuing to meet the Chairman's intent of an energetic discussion of the matters that are important to the joint force. We look forward to hearing from you. **JFQ**

—William T. Eliason, Editor

F–16s return to Aviano Air Base, Italy, after mission supporting Operation *Odyssey Dawn*

U.S. Army (Tierney P. Wilson)

The Special Feature addresses the growing number of issues associated with cyber warfare. The first of three offerings is from Häly Laasme, who provides a look into Estonia's role in the development, adequacy, and implementation of the North Atlantic Treaty Organization cyber defense policy. The next two articles tackle the Stuxnet virus attack on Iran last year. Lukas Milevski, a doctoral student under the mentorship of Professor Colin Grey, suggests the features of the Stuxnet attack mirror a special operation in cyberspace. Finally, Colonel Gary Brown, USA, assesses Iran's view of last year's cyber attack.

reflection of the impact of operations in Afghanistan and Iraq. University of Chicago doctoral student Alexs Thompson, who is currently working for the Army's Directed Studies Office, provides a good look at how to address the religious portion of relating to Afghan culture. Brent Bankus and James Kievit of the U.S Army War College have developed a useful assessment of the last 8-plus years in Iraq using the lens of the U.S. experience in Vietnam.

In the Features section, we lead off with a "keeper" from Admiral James Stavridis, a National War College class of 1992 graduate, who offered the incoming National Defense

U.S. Air Force

General Norton A. Schwartz, Chief of Staff of the U.S. Air Force

An Interview with
Norton A. Schwartz

JFQ: *When you talk to the public and Congress, how do you describe the Air Force role in implementing U.S. national security policy? What unique capabilities does the Air Force bring to the table?*

General Schwartz: I think there are essentially four things that I would describe as enduring qualities of our Air Force—things that are relevant now and will be relevant in the future.

One is what I would call domain control, and that applies both in the air and in space, and to some degree, in cyberspace as well. That is securing some part of these domains so that the other members of the joint team can accomplish their missions

without the threat of attack from above by an adversary. It is fundamental to the way we operate as a joint team, and it is clear that this will be an enduring capability for the Air Force going forward.

Second is intelligence, surveillance, and reconnaissance [ISR], and clearly that's been an ascendant capability in the last 10 years as we have transitioned from general purpose force/major force engagement scenarios to what I would characterize as the more manhunting kind of role that we currently have. We also now apply our ISR capabilities more often in direct support to small units on the battlefield, so that when these small units go around the corner, through a window, or over a wall, they're not surprised by what's on the

other side. So ISR in all of its dimensions—overhead, air-breathing, multiple sensors, et cetera—and, more importantly, the capacity to digest that data stream and turn that [intelligence] product into useful information are enduring capabilities.

The third area clearly is lift—the capacity to get shooters to the fight, and to extend the range of those platforms that do the airlift mission and the platforms that conduct strike missions as well. So the lift part of this, as well as the air refueling piece, is a key part of what we do for the joint team.

Finally, global strike is something that is almost unique to the Air Force, and it manifests itself in a number of different ways. Fundamentally, this is about being able to reach out to put targets at risk, wherever they may be on the planet. That has both deterrent effects and clearly warfighting implications as well.

Col William T. Eliason, USAF (Ret.), Ph.D., Editor of *Joint Force Quarterly,* interviewed General Schwartz at his Pentagon office.

There's also another capability important to this, and that is how we command and control those four enduring features of our Air Force. We have the capacity to command and control the tools that we have at our disposal on a scale that is something others don't approach. So that too is an important feature.

Again, I would say command and control, ISR, lift, domain control, and global strike are the features of an Air Force like ours, and which are required now in the kinds of irregular warfare fights that we've been in during the last 10 years or so, and will be required in other fights that we might see in the future.

JFQ: *For several years, the Air Force has been operating closely with its joint team-mates in Iraq and Afghanistan. However, the Air Force's role has not always been front and center. What can you tell our readers about the Service's involvement in these conflicts, and how have they influenced your thinking about future operations?*

General Schwartz: This isn't about who gets the credit, and it's clear that the campaigns that we've been in, at least in Iraq and Afghanistan, have been largely ground-focused. It shouldn't be a surprise that the Army and Marine Corps are predominantly the ones that have gained the most attention as these conflicts have unfolded—although both the Navy and Air Force have made not-inconsequential contributions to battlefield activity, to be sure.

However, the Libya scenario is a different one. Here's a case where it's a much more air-centric campaign, and we naturally gain more attention there than does the Army or Marine Corps—although we're certainly grateful that in the early days, the Marine Corps helped rescue one of our aviators. But it's a team sport. It's all about trust and confidence and keeping promises. As a team, we have come to rely upon one another to a greater degree than ever before. Regardless of Service, there is a level of confidence that, if someone promises he will be there to deliver an effect that's essential for another member of the team to accomplish his mission, it will happen or we'll die trying. That continues to be our ethic, and it certainly will continue to be so in the future.

JFQ: *You've joined forces with the Navy and Marine Corps to develop the AirSea Battle Concept. Why is this new concept so important?*

General Schwartz: The Air Force and Navy have had, over the course of time, periods of more intense collaboration than at other times. It's been what I would characterize as ad hoc—certainly positive—but not at a consistent level. So one of the things that [Admiral] Gary Roughead [Chief of Naval Operations], [General James] Conway [Commandant of the Marine Corps] at the time, [General James] Amos [Commandant of the Marine Corps] now, and I decided to do, recognizing that the Navy and Air Force are the two Services with global perspective, was to cooperate routinely in the global commons. Access to the global commons is vital to the country for both strategic and national security reasons, but also economic reasons, so we concluded we needed to collaborate at a different level.

AirSea Battle really came about in three dimensions. One is the institutional dimension to normalize this collaboration—make it not an episodic thing but something that is much more routine between Marines, Sailors, and Airmen at the headquarters level on down. The second dimension was at the operational level. Clearly, the antiaccess/area-denial environment is intensifying, and this is an issue again for the Services on which the country depends a great deal for power projection. So how do we at the operational level maximize our collective power projection capability in a more systematic way? We

General Schwartz speaks with Airmen about national defense and force management

have gone about this in a manner that I think is much more thoughtful. This is not so much about new systems as it is really about how we better employ what we have at our collective disposal for maximum effect.

While this may be a bit far-fetched, here is an example that gives you an idea of what we're thinking about. There are fundamentally two stealth platforms in the DOD [Department of Defense] portfolio. Clearly, the Air Force has one of them with the B–2. Clearly, the Navy has one of them with their fleet of submarines. It's something that I quite frankly had never thought much about and that we haven't collectively given much thought to in the past: Is there a way for those two stealth capabilities in the defense portfolio to better reinforce one another? Maybe there's not, but this kind of thinking has potential to make better use of the resources we do have at our disposal and to moderate those capabilities out there that have the potential of making power projection a higher risk proposition for our country.

Finally, the third piece of how we are approaching AirSea Battle is on the acquisition side. I would argue that a good example is Global Hawk for the Air Force and the BAMS [Broad Area Maritime Surveillance] program for the Navy. We're using essentially the same platform; the only difference really is the sensor: one for an environment largely maritime-focused, and one for us largely overland-focused. But why should the Navy and Air Force have two different depots? Why should the Navy and Air Force even have different training pipelines or base such similar systems at different locations? So part of AirSea Battle is to make sure that, in those areas where we are clearly in the same space, we are making the best use of our resources— common ground stations, common training, common basing, common logistics supply chain, et cetera, to the extent possible.

None of this is rocket science, but this is a level of institutional commitment that I don't think has existed before. It will make a difference in preserving one of America's strong suits: power projection.

JFQ: JFQ *recently featured an article that suggested the need for better integration of cyber operations into the joint force commander's command and control. What is your assessment of the way ahead for cyber operations for the joint force?*

General Schwartz is interviewed at his Pentagon office

General Schwartz: This is an immature area, and one in which there's still a great deal of uncertainty in terms of what our capacities are, what our legal authorities are, and how we operate in peacetime versus wartime. Cyberspace is another one of those areas where traditional geographic boundaries don't apply. There are probably still more questions than answers here, but it is absolutely clear that we depend on our cyber capabilities to orchestrate the tools of warfare and that cyber capabilities themselves have the potential of performing military missions. So this is why we now have a U.S. Cyber Command—to bring this nascent capability, for which we don't yet have an end-to-end understanding, to its

full potential. That is the vision for Cyber Command.

Within the Air Force, we see this in two contexts. One, naturally, is defending our network, and that's not a trivial job. We're certainly focused on that. Second, there are places for us to apply cyber in a more offensive context, but only in support of traditional Air Force missions. For example, you could take down an air defense capability kinetically. We do that with F–16 CJs. We've done that recently in Libya. However, you might instead choose, for good reasons, to disrupt an air defense capability with electrons. It will depend on the circumstances and the commander's intent, but there is a place for that. The Air Force is focusing on things that

support traditional Air Force missions, and not anything beyond that particular role.

JFQ: *Having experienced lengthy and at times difficult times with Air Force acquisition of major platforms such as the F–22 and the new tanker aircraft, what lessons have you learned that can be applied to achieve more timely fielding of capabilities in the future?*

General Schwartz: This is not something that applies just to the Air Force, although we have had significant challenges in the area. I think there are three major pieces to this. One is that we must have requirement stability. Our discipline in this area has abated over the last 10 years. When money is plentiful, discipline on requirements tends not to be as good as we'd like. One of the things we have done is to get our arms around what the drivers of capability are, and to make sure that if there are any changes, they are approved at the appropriate level. I'm the requirements officer for the Air Force. While I'm not as expert on the breadth of the requirements as some folks who focus on this every day, in the end, it is my responsibility along with the other Service chiefs. We have worked hard to discipline the requirements side of this, and the KC–46/KC–X competition is a case in point. We didn't wiggle, and we will not going forward. We have a [specification], we signed a contract, we have a contractor, and we're going to buy the airplane that we spec'd. We're not going to change requirements, at least on the initial increment, because we can't afford to.

That brings on the second piece of this. The attribute of affordability has to have higher relevance in our acquisitions. I acknowledge that there are times when it doesn't matter what it costs. The Osama bin Laden mission is a case in point. But in acquisition, we're going to increasingly be in a situation where cost-consciousness will matter a lot. The new Long-Range Strike platform is an example, where the Secretary of Defense has said that cost will be an independent variable for this acquisition program, or it won't go. I think that probably won't be a unique circumstance going forward.

Finally, I think there will be a need for stability in program funding. This is easier said than done. However, we ask a lot of program managers, and then we sometimes change their funding streams, making it difficult to hold people accountable on both sides of this, in both government and industry. So the key things are requirements stability, resource stability, and, in between, more cost-consciousness on the part of both industry and government.

JFQ: *After a long period of decline marked by a number of incidents, the Air Force took steps to restore the nuclear enterprise. Can you give us a sense of where the Service's contribution to nuclear forces stands today?*

General Schwartz: The Air Force has two of the three legs of the triad, and it is true that we went through a period when people questioned our competence in this important mission area. So we went about repairing that by standing up Air Force Global Strike Command on the operations side and establishing the Air Force Nuclear Weapons Center

General Schwartz presents Purple Heart to security forces officer at Bagram Airfield, Afghanistan

for the sustainment of the nuclear enterprise. But I think apart from the organizational pieces, which were not unimportant, this is also a human capital question. Over time, for reasons that are understandable—I'm not saying justified, but understandable—the focus on the people who did this work diminished. It is very demanding work. This is an area where zero defects—perfection—is the standard. These people are under the microscope all the time. That's what the American

people expect. So we're making sure that we have the right people—the critical mass of human capital—in order to do this job well.

We're ensuring we manage this pool as a key resource of our Air Force, and that those who work in this area know that this is a profoundly important mission involving the Nation's most lethal weapons and which requires a level of professionalism that leads the force in many respects. We're making sure these folks know that we as an institution value that commitment and that we will reward that commitment. That's why sustaining the nuclear enterprise is our number-one priority—we cannot back off of that. Again, I think this is a whole lot less about force structure. What it is really about is reassuring people who do this demanding work that it's worthy work, that it's valued, and that it's essential to the Nation's security.

JFQ: *Given the continuing pressures of the global economy and impacts of reductions in the Federal budget, can you discuss what measures you are considering in terms of reductions or restructuring of Air Force personnel, force structure, and operations, and their impact on your efforts at recapitalizing the force?*

General Schwartz: There's going to be pressure, there's going to be friction, and we're going to have to make choices. We recently worked through the DOD efficiency

process to squeeze overhead and look for excess, overlaps, duplication, and so on in order to move about $33 billion from support to mission-critical activities. Now we have additional targets. The trend lines are clear. The collective view of the Service chiefs is that we are not going to allow a return to the period when the Armed Forces actually went hollow. We're not going back there. You've heard the Secretary of Defense say that we may be a smaller force, but we're going to continue to be a superb force. That is the bottom line on this, but we will probably have to get smaller.

We will not reduce manpower first, however. We tried to do that some years ago and discovered that it really didn't save that much money. We went from about 355,000 to 320,000, and it didn't save a nickel because the cost of personnel continued to escalate. We have a ceiling right now of about 332,000, and we will squeeze force structure before we squeeze manpower. There are negotiations under way both for debt ceiling considerations and future OMB [Office of Management and Budget] numbers for the DOD, and we'll see what they turn out to be. It is clear, as the Secretary of Defense stated, that Defense is not off the table, and while we can become more efficient, there are certainly ways to save on the costs of operations. I do think that reductions will be significant and will probably require us to get a bit smaller. We're prepared to make those choices. I think the key thing is that we're going to need the help of our partners in Congress. As we make adjustments, some places will lose force structure and others may gain. One hopes that it's possible for us to reach consensus with the various delegations on how to go about this.

JFQ: *You are a graduate of two of our joint professional military education colleges and have served more joint time than any of your peers on the Joint Staff, including the Chairman. How well did your joint education and experience prepare you for these positions, including being a member of the Joint Chiefs? With such a wealth of experience to draw on, what is your assessment of where jointness is today and to go in the future?*

General Schwartz: You know, it's better to be lucky than good. I have had a range of experiences, and I think that having been a

prior combatant commander has made me a better Service chief. You understand the demand side of the equation. You are part of a network that the Service chiefs are not, given the division of labor in the Goldwater-Nichols Act. Being selected as Air Force chief of staff was unexpected, but it has proven to be very valuable to have migrated through the COCOM [combatant commander] ranks to become a Service chief.

Additionally, I was lucky enough to establish relationships and credibility with a range of teammates over the years, and that certainly has proven valuable and helpful to the Air Force in making the case that we're all in and that the Air Force will do whatever's necessary while people are dying in the current conflicts. There is a level of trust that I think started out in the captain years, with Doug Brown, Pete Schoomaker, Eric Olson, and lots of other people who are now doing important things for the country as well. We should all be proud of who we are and where we come from, but a reality is that as you become more senior, you have to be able to be bigger than where you came from. The joint experiences I've been fortunate enough to be exposed to have enabled me to be bigger than where I came from, and have hopefully allowed me to be an asset to the Air Force and to my fellow Service chiefs. Everything has its time, but I do think that having a broad base matters in a job like this. I was fortunate to have opportunities along the way, and to have people take chances with me.

We came to this job unexpectedly, of course, but having that larger network of folks has benefits, and it sure made it easier when we joined the Joint Chiefs in 2008. My wife Suzie and I have been longtime friends with George and Sheila Casey, as well as with Jim and Annette Conway. Gary Roughead and I had the opportunity in the past to work with one another. These relationships go back decades, and that is not trivial. I think it's something that strengthens our Armed Forces and is a reason for staying the course in this area. If we think back to the late 1990s, we are light years better than in those days. You can see the difference; this is roughly 30 years of joint business, and it has made a huge difference. It does not mean that the Services aren't vital—they clearly are—but it also has created a generation of military leaders who are bigger than where they came from. **JFQ**

THE LOOMING **CRISIS** IN DEFENSE PLANNING
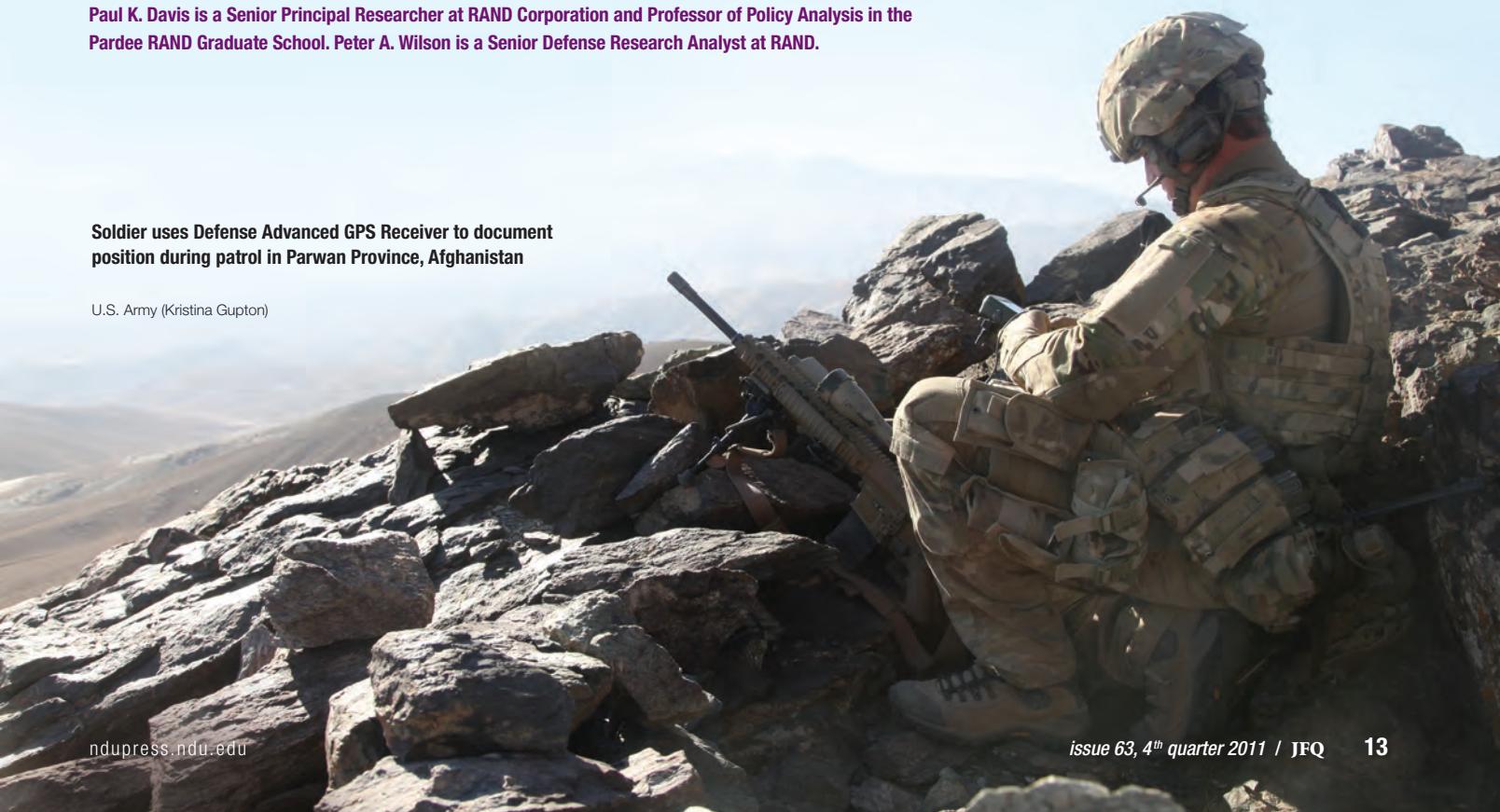
By P A U L K. D A V I S *and* P E T E R A. W I L S O N

A period of discontinuity in defense planning looms because of a "perfect storm"—that is, the confluence of technology diffusion, geostrategic changes, and the range of increasingly well-armed adversaries (states and networked nonstate actors). These are leading to the United States having to deal with a demanding mix of counterinsurgency (COIN) and counterterrorism on the one hand, and traditional challenges on the other; the likelihood of *major* difficulties in projecting forces in some important circumstances; related block obsolescence of U.S. forces and concepts of operations; and the need for a new grand strategy in the Asia-Pacific region.[1]

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Soldier uses Defense Advanced GPS Receiver to document position during patrol in Parwan Province, Afghanistan

U.S. Army (Kristina Gupton)

To make things worse, obstacles exist to taking on these challenges—notably, the demands of current wars, military complacency due to decades of military overmatch, and severe national fiscal constraints. Incremental changes will not suffice, but no consensus is yet emerging about options for the way ahead. Taken together, the problems pose a once-in-a-century challenge. All of this is summarized in figure 1. Although each of the factors we mention is recognized individually, we do not believe that either the perfect storm situation or absence of consensus on good ideas about how to move forward is yet appreciated. Currently, much of the debate within and outside of the Pentagon is over finding a new balance between investments for traditional combined arms warfare and what are now called *complex operations*—whole-of-government actions that involve combinations of irregular warfare, COIN, stabilization, and perhaps humanitarian assistance, usually with other nations or groups involved. As important as this balancing effort is, we believe that the national security issues now challenging the Nation are even more profound for reasons touched on by a few authors and in portions of the 2010 Quadrennial Defense Review.[2] By intent, this

article is about sharpening that appreciation. Finding solutions is another matter.

Technological Developments

For decades, the U.S. military has enjoyed technological overmatch in domains from sophisticated communications through precision weapons and space systems. This is changing, as indicated in table 1, which lists classes of military technology that are now or can soon be available to some U.S. adversaries—even some lesser states and nonstate

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precision mortars and other such weapons can seriously change what is feasible for ground forces

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military organizations. Some of the related items are inexpensive, such as cell phones or other devices using the Global Positioning System (GPS). Precision weapons are available today to nonstate actors, as illustrated by Hizballah's use of guided missiles and other tactics in the 2006 Lebanon War.[3] Precision mortars and other such weapons can seriously change what is feasible for ground forces.[4]

A larger country, such as Iran, can afford to buy significant numbers of advanced surface-to-air missiles. Many cyberwar capabilities are inexpensive and technically undemanding, such as denial-of-service attacks. Some antispace system capabilities are similarly inexpensive and straightforward (for example, GPS jammers).[5] In some cases, U.S. responses are already under way and will have at least some success at affordable prices. However, more broadly, the trends are quite adverse. From the viewpoint of competitive strategies, the United States is now on the wrong side of the economics: It is much cheaper for adversaries to cause great difficulties for U.S. forces and operations than it is for the United States to respond effectively. This is true for both low-end and high-end adversaries and competitors.

Collision of Revolutions

To put matters into perspective, it is useful to conceptualize changes occurring in the 21st century in terms of four 20th-century revolutions in military affairs (RMAs). The strategy of industrial warfare emerged conspicuously from 1917 onward with mass production of self-propelled vehicles of all types. It matured in World War II, and its influence

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Figure 1. Diagnosis: An Impending Crisis in Defense Planning

THE IMPENDING CRISIS IN DEFENSE PLANNING

Mix of "complex operations" and traditional challenges; fragmentation and distractions

Extreme difficulties in force projection

Block obsolescence of U.S. military strategy, force structure, and concepts of operations

Need for new grand strategy in Asia-Pacific

Obstacles
• Current wars
• Military complacency
• Fiscal constraints

Shortage of concepts and options

Inexpensive, available technology; leveling of playing fields

Fundamental changes in geostrategic landscape
• Emerging powers
• Proliferation
• New "theaters" of space and cyberspace

Wide range of adversary types, some well armed
• Nations
• Networked nonstate actors

Table 1. Illustrative Technological Sources of Concern

Technology	Examples
Inexpensive communications for coordinated, distributed operations of small groups	Internet, multimedia, cell phones, commercial encryption, inexpensive global positioning system sets
Precision weapons	Precision mortars, guided rockets, and both short- and long-range missiles threatening ground forces, ships, airfields, and mobile air defense missiles
Advanced air defenses	Advanced mobile and man-portable surface-to-air missiles
Advanced antiship weapons	Air-independent propulsion submarines, high-speed homing torpedoes, antiship ballistic and cruise missiles, smart and mobile mines
Cyberwar capabilities	Denial-of-service attacks, trojans and other advanced worms, nuclear and nonnuclear electronic pulse weapons
Anti–space system capabilities	Antisatellite systems, jammers of global positioning satellites, radio frequency weapons
Long-range missiles for delivery of nuclear weapons	North Korea, Iran, Pakistan, and others
Space-launch capability	India, Israel, and perhaps Iran, Pakistan, Brazil, South Korea, North Korea, and others, depending on inclusion criteria
Nuclear proliferation	Pakistan, North Korea, and perhaps Iran and others
Nonnuclear mass disruption or weapons of mass destruction	Radiological bombs, traditional bioweapons, new innovations from so-called do-it-yourself biology

is central in all modern combined arms military establishments. It underlies what was long called the American way of war.[6]

RMA II, the strategy of the insurgent, had roots in early partisan or guerrilla warfare, such as by colonialists in the American Revolution and by Native Americans in the settling of the West. However, it is associated specifically with the innovations of Mao Zedong in the 1930s when it became a form of total political and cultural warfare. A central feature of this type of war is often the sophisticated and sustained use of terrorism for coercion. A resurgence of this type of warfare has come from al Qaeda and its affiliates. Iran supports this type of strategy and related terrorism through Hamas and Hizballah.
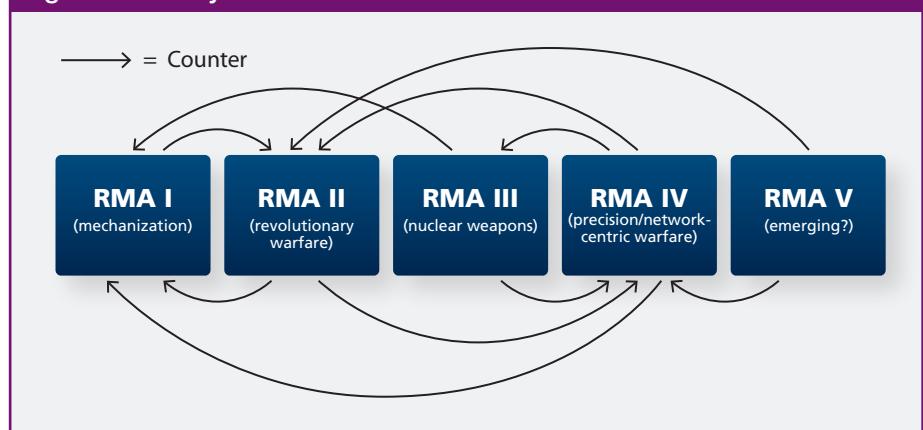
RMA III, the strategy of weapons of mass destruction (WMD) and strategic bombardment, began in World War II with nuclear weapons and long-range means of bombarding the adversary's homeland (primarily with bombers, but also with Germany's first-generation long-range ballistic and cruise missiles). Since then, nuclear weapons

have proliferated and might continue to do so, perhaps even to nonstate actors. Other forms of WMD, especially biological weapons, are also a concern.

RMA IV, the strategy of information technology, became increasingly visible in the late 1980s. It was marked by precision-guided weapons, information technology, and the use of space, as in network-centric warfare. It has been the central feature of

military transformation since the 1990s.[7] Some aspects, such as new forms of organization and operation (for example, swarming tactics) and exploitation of robotic or remotely controlled systems, have been only partially implemented.

A common impression is that a given RMA occurs within a nominal date range and is subsequently replaced by the next one. In contrast, we see RMAs as having started at nominal times but continuing thereafter in a measure-countermeasure dynamic with competition among all four of them (see figure 2).[8] Industrial warfare, for example, evolved to include aircraft carriers, tank armies, and modern air forces. Warfare will again be undergoing major change, but we do not yet know whether the result will be a hybrid of all four RMAs or something new. Wealthy countries with traditional military forces will continue to invest in tanks, aircraft, and surface ships—the fruits of industrialization and combined arms (RMA I). Many state and nonstate actors, including terrorists and criminals, will continue to adopt the insurgent strategy (RMA II). They will benefit from selective acquisition of weapons and systems associated with RMA IV. Nonetheless, some states may conclude that their only reliable defense is through deterrence enabled by WMD (RMA III). A worrisome possibility is that some states, such as a future nuclear-armed Iran, might use their nuclear force (RMA III) as a shield while pursuing or supporting aggressive operations (probably indirectly) using the methods of RMA II and RMA IV. In summary, we see the future as involving a mingling, even a collision, of continuing RMAs, as well as new developments (the first genuine RMA of the 21st century).

Figure 2. The Dynamics of Measure and Countermeasure

——→ = Counter

RMA I (mechanization) · RMA II (revolutionary warfare) · RMA III (nuclear weapons) · RMA IV (precision/network-centric warfare) · RMA V (emerging?)

Geostrategic Developments

The geostrategic changes in recent decades are many and varied. China is now a major power with impressive, high-momentum military developments[9] in addition to its economic accomplishments. China's buildup has long been anticipated and can be regarded as both natural and historically normal. It is possible and perhaps even likely that China, its neighbors, and the United States will have mostly good relations for many years into the future—strongly consistent with the interests of all concerned. Nonetheless, there are reasons to worry. Two years ago, most China experts

what might emerge is a dynamic cool war of competition, cooperation, containment, and possible conflict

in the United States would have referred only to hypothetical concerns based on geography and historical experiences and would have ended with a recitation of why the nations have interests in continuing peace and prosperity, and how they had—so far—shown restraint and, by and large, statesmanship. Unfortunately, more signs of trouble have arisen. Some of these are economic, some military, and some political within China. In 2010, China has seemingly taken an increasingly hard line regarding sovereignty over a number of small islands and waters, especially in the South China Sea. Although the issues are longstanding, Beijing has recently become much more assertive about its territorial claims along its littoral in the Yellow Sea (on the west side of the Korean Peninsula) and the South China Sea (between Vietnam and the Philippines), which it now claims as a "core interest" of sovereignty.[10]

For obvious reasons, China's assertiveness has worried such regional states as Japan, South Korea, the Philippines, Vietnam, and Indonesia. Economic tensions are now considerable as well, and will likely continue, with even the possibility of an expanding trade war emerging as importer states consider tariffs and other measures to protect jobs and improve balances of payments. Although the future *should* be one of cooperation and mostly good relations, and we are not among those who exaggerate China's current power, many potential

flashpoints can be identified that justify caution—especially given China's behavior over the last year.[11]

China, of course, is not the only rising power. India is emerging as a powerhouse in South Asia, one with its own ambitions, particularly making the Indian Ocean a sphere of influence and having significant power at chokepoints such as between the Indian and Pacific Oceans (for example, the Strait of Malacca) and between the Arabian Sea and Indian Ocean (Strait of Hormuz and Bab-el-Mandeb).[12]

It is possible and even likely that India and the various regional states of East and South Asia will, along with the United States, provide a kind of balancing of China through a combination of economic, political, and military activities over time. What might emerge is a dynamic cool war of competition, cooperation, containment, and possible conflict. This will be an era of strategic improvisation and not the rigid and nearly monochromatic strategic competition of the early phases of the Cold War.

Other geostrategic realities include, of course, the continuing struggle with violent radical extremists, notably al Qaeda and a network of loosely affiliated jihadist organizations worldwide. No end is in sight for that struggle—even if U.S. withdrawal from Iraq occurs on schedule without civil war, and even if progress continues slowly in Afghanistan, which is even more uncertain—especially given linkages to the troubles within Pakistan. Osama bin Laden's death has not changed this. Nor have the upheavals of the Arab Spring, the long-term implications of which are not yet clear.

Another new geostrategic reality is the advent of new wartime theaters of operation: space and cyberspace. The U.S. military is extremely dependent on both and experiences many serious vulnerabilities as other nations improve their own capabilities in both, and as some nations, such as China, do so zealously precisely because of the U.S. dependence.

Finally, nuclear proliferation continues, despite years of unsuccessful effort and

dubious rhetoric about preventing it. In some instances (North Korea and Iran among them), a major purpose of developing nuclear capability is to deter attacks by the United States. At some point, countries such as South Korea and Taiwan may come to doubt the credibility of U.S. extended conventional deterrence—especially if conventional force projection itself becomes substantially more dicey for the United States.

Block Obsolescence of Forces and Concepts of Operations

Against this background, we see the obsolescing of U.S. force structure and concepts of operations with respect both to a peer competitor and to lesser adversaries that combine methods of insurgency with modern technology. Problems exist across the board, but table 2 illustrates them for force projection. To be sure, our assessments are subjective, and uncertainties have less to do with technology trends, which are observable, than with whether in fact potential adversaries exploit them as we project.

Some key points underlie these conclusions relating to traditional forces and traditional operational concepts:[13]

■ Concentrated ground forces and concentrated logistics are potentially quite vulnerable to an expanding spectrum of precision weapons, including short-range guided mortar bombs, precision-guided rockets, and precision-guided short- and medium-range ballistic and cruise missiles. This has been more than hypothetical since the 2006 war in Lebanon.

■ Aircraft are potentially quite vulnerable to precision weapons if based within the countries of operations or relatively close to shore. If based at long range to improve survivability, these aircraft will be unable to maintain high sortie rates over contested areas, whether for purposes of achieving air superiority or for suppression of air defenses and support of ground operations.

■ These vulnerabilities would be exacerbated if the adversary used area munitions, such as the cluster weapons that the United States has used for decades, or fuel-air explosives, such as those developed by the United States, Russia, Great Britain, and China. Such weapons have been used recently by Libya against rebels.

■ The challenges to traditional forced entry capability will continue and

Table 2. Fading Viability of Traditional Concepts of Operations

Component	Previously	Now, and Increasingly in Near Future
Limited forward presence	Nonproblem	Restrained but not especially risky
Large-scale deployments to regional waters and bases	Nonproblem	Risky due to vulnerable bases and regional waters; risks stem from air-independent propulsion submarines and precision antiship weapons (including land-based missiles); large standoff ranges will likely be needed
Broad naval supremacy	Nonproblem	Challenges exist but are much less daunting when not in close-in regional waters
Achieving air supremacy	Nonproblem	Nonproblem in most domains, but not, for example, close to Chinese mainland
Suppressing air defenses	Destruction is difficult because of cover and deception but suppression is quite feasible.	Risky for above reasons and advanced mobile and man-portable surface-to-air missiles
Offensive air operations	Strategic strikes are possible early with stealthy aircraft; large-scale operations are a nonproblem after suppression of air defenses against fixed and known high-value targets.	Risky and difficult because of modern air defenses, the need for long-range operations, and the difficulty of finding mobile and hidden high-value targets
Entry of traditional ground forces and infrastructure	Nonproblem after gaining air supremacy	Risky because of vulnerabilities of forces during entry and of bases and other logistics. Area weapons pose special concerns.
Later ground maneuver operations with close air support and battlefield shaping	Supreme skill of U.S. forces	Moderately risky, with air support constrained due to residual surface-to-air missiles, and with vulnerabilities to residual precision weapons
Large follow-up operations (for example, stabilization in large countries)	Feasible on a small scale, or on the Iraq scale with mobilization; forces at risk due to improvised explosive devices and other asymmetric tactics; large manpower requirements	Feasible on a small scale, or on the Iraq scale with mobilization; operations are risky for adversaries having precision or area weapons and some defenses against drones. Special needs for mine-resistant vehicles, persistent surveillance, and substantial manpower.

■ = feasibility is in question   ■ = feasible but with high risk   ☐ = risky or difficult   ■ = feasible with acceptable risk

worsen. Arguably, the two premier forms of theater-wide forcible entry, the mass airborne and amphibious operation mechanisms, are already obsolete for many environments. Brigade-level airborne drops have long been more of a theoretical option than something anticipated; large-scale over-the-shore amphibious assault will be seen as both risky and potentially costly given the threat from improved coastal intelligence, surveillance, and reconnaissance, mines, and direct and indirect precision weapons. Maneuver from the sea using longer range vertical takeoff and landing aircraft, such as the V–22, will remain limited in scope because of range-payload issues and

vulnerability to air defenses. Heavy amphibious forces such as the recently canceled armored expeditionary fighting vehicle will be vulnerable to direct fire guided munitions. Even sea-bases could be vulnerable to precision missile fires at significant ranges offshore.

Perceiving the Way Ahead, Darkly

Against this background of sobering diagnosis, we have attempted to sketch the outlines of a way ahead. That outline involves new military capabilities, concepts of operation, and grand strategy.

We focused largely on issues of force projection. Since traditional concepts of

operation are losing viability, we sketched three illustrative possibilities for new ones to sharpen discussion of capability needs. They stem from asking how force projection could proceed given a lethal environment (sometimes discussed as an antiaccess environment).

Make Deliberate, Phased Entry with Defense. This concept would be, in some respects, a modernized version of the classic concept. However, significant suppression of adversary capabilities would be accomplished with long-range strike platforms (and cyberwar), after which the ground and air forces deployed into the country

F–35C, U.S. Navy Joint Strike Fighter variant, has larger wing surfaces and reinforced landing gear for greater control during carrier takeoffs and landings

(perhaps from seabasing) would have reliable defenses against missile and drone attacks from short, medium, and long ranges. The defenses would be accompanied by the ability to quickly detect and attack the launch sites of any attacks (by analogy with the Army's current counterbattery fire). Furthermore, there would be the need to support Army and Marine ground maneuver forces by long-range airlift flying from protected land- or seabases. Multibrigade ground forces could perhaps be supported by airlift with the new technology of precision airdrop, although that would be challenging for some classes of supply such as fuel and ammunition. Airlifters would overfly low-altitude air defenses and would not need to use forward airfields under threat from long-range precision fires. The concept of the defended seabase also appears attractive. Recently, the Navy has developed a new at-sea connector, the mobile land platform, that has conceptual promise to provide at-sea support to a multibrigade-size Marine and Army expeditionary force, although budget pressures might preclude related investments.

Surveil, Strike, Punish from Afar, and Insert Small, Networked Ground Forces. An alternative approach would be to eschew insertion of large ground forces and instead depend on sustainable strike capabilities guided by persistent surveillance from survivable platforms. Special forces and unconventional warfare operations pivoting around indigenous allied forces could also play a major role. Thus, the concept could include large numbers of small, dispersed, networked ground forces.[14] Given sufficient local forces, this tack might suffice, but history continues to show the need for substantial "boots on the ground" to control territory.

Make Rapid Entry. A third example would emphasize prior surveillance by survivable and possibly covert means; first strikes or preemptions in the form of sudden, decisive strikes with long-range missiles and aircraft, cyberattacks, and specialized ground forces; and followup actions by larger numbers of ground forces, both those of the country being assisted and external projection forces. Such attacks might be especially relevant to dealing with terror networks that cannot be deterred in the ordinary sense.

These possibilities are neither mutually exclusive nor exhaustive (for example, they do not include space-based weapons that could be used both for offensive purposes and to suppress or destroy enemy defenses), but they illustrate a range of different thrusts—each with its own severe shortcomings.

history continues to show the need for substantial "boots on the ground" to control territory

At this stage, it is not clear which or which combination of these concepts will be viable. This suggests priorities on certain types of capabilities if they can in fact be achieved at tolerable cost. The following list is itself less remarkable than recognizing how challenging the related technical requirements are (and by noting differences from current de facto priorities, such as modernization of current platform types):

■ high-confidence defenses at tactical and operational levels ranging from

countering precision mortars to countering long-range missiles

■ survivable and truly persistent surveillance and reconnaissance strike (episodic coverage will be insufficient)

■ comprehensive defense suppression

■ long-range sustainable strike

■ effective munitions, including munitions for deeply buried targets

■ survivable at-sea basing

■ means of accomplishing complex operations with fewer U.S. forces, even when adversaries are embedded in populations.

We see likely cross-cutting stratagems as involving dispersion, networking, and swarm tactics; major efforts to ensure network security while hedging in not-yet-identified ways against predictable network failures or penetration; and massive use of robotics and remote control systems. For each military Service, the crucial questions seem to be these:

■ What are the appropriate new-era building block units (for example, analogues to older units, such as brigades or squadrons, but often with a more joint character)?

■ What are the appropriate joint- and component-level concepts of operations? Circumstances of feasibility?

■ What is the appropriate portfolio mix of capabilities across missions (COIN versus force projection)? Circumstances of adequacy?

■ What is necessary to deal with discrete, Service-specific challenges? With joint challenges, such as network security and hedges against network failure or penetration?

■ What is the appropriate portfolio mix of Active, Reserve Component, and civilian capabilities?

Again, the generic questions are less remarkable than the specifics. Should ground force projection deemphasize large, traditional units in favor of small, networked unit (swarming) tactics? What kind of seabasing makes sense, and for what distances? What is the future role of short-range tactical air forces? How will long-distance strike capability be sustained in the event of a large and lengthy conflict? And, in the realm of complex operations, what capabilities are needed to accomplish the missions with much reduced numbers of U.S. ground forces?

Toward a New Grand Strategy

The other crucial element of the way ahead will be a new grand strategy. The most obvious need is to rethink grand strategy for the Asia-Pacific super region. We conclude:

■ Given the extent of China's developments, it is no longer appropriate to assess the adequacy of U.S. force structure by playing through simulated wars over the Taiwan Strait. The focus must change to broader conceptions of the power balance that include the arc from the Middle East through the Indian Ocean to Northeast Asia.

■ Imperatives in the new conception will include deterrence and crisis stability; deterring small and limited aggression, as well as larger scale aggression; and ensuring that, in periods of tension, the combination of the sides' lethality and vulnerability does not create perceived imperatives for preemptive action. Avoiding errors that might cause war will be crucial for the great powers and important regional powers. A major issue is how deterrence can be made stronger than it has been in the past.

■ Challenges of deterrence and, especially, extended conventional deterrence will be exacerbated by proliferation of nuclear weapons.

■ A core issue is the relative emphasis on regional cooperation and power-balancing and between formal and informal balancing. And, of course, what role should be played by both the United States and the many nations of the Asia-Pacific region?

U.S. Marine Corps (Benjamin R. Reynolds)

GT–18 surface-to-air missiles fired at incoming aircraft during nighttime warfare training, Marine Corps Air Station Yuma

U.S. Navy (Jeramy Spivey)

USS *Stout* launches Tomahawk cruise missile at radar and antiaircraft sites along Libya's Mediterranean coast in support of Operation *Odyssey Dawn*

■ The military component of strategy will seek to maintain conventional warfighting and war-winning capabilities where feasible but will include more deterrence-oriented capability, such as the ability to inflict serious pain with conventional strikes, devastate infrastructure with conventional strikes, and maintain supremacy at sea—if not in major powers' littoral waters, then certainly on a larger regional and global scale that includes the sea lines of communication to the Middle East and Africa.

■ The United States has a major decision to make regarding the degree to which

because the way ahead militarily is unclear, we see the need for vigorous and competitive exploration and competition of ideas

it should prepare for manpower-intensive operations, such as COIN and stabilization. It is not obvious that such operations should be the primary basis for force planning, despite events of the past decade. If they are, then the economic consequences will be acute because they would come in addition to the demands of evolving balance of power and force projection issues that are themselves demanding.

Although arms control should also be an element of grand strategy, it is unlikely that it will substantially alleviate the major U.S. national security challenges identified.

Necessity-driven Experimentation

Because the way ahead militarily is unclear, we see the need for vigorous and competitive exploration and competition of ideas. The past decade's experiences have not been encouraging: Visions have sometimes gotten far ahead of technology; reason, criticism, and competition have not been sufficiently valued; and joint experimentation has been neither sufficiently ambitious nor rigorous. Ironically, at a time when U.S. Joint Forces Command is arguably needed most, a decade's disappointments caused former Secretary of Defense Robert Gates to call for the command's dissolution.[15] A priority should be placed on rethinking how to do the explorations needed to inform once-in-a-century decisions.

Finally, in some respects (the primary difference being the unavoidable long struggle with international violent religious extremism that threatens the United States and its worldwide interests), the Nation is in a situation reminiscent of that of the Eisenhower administration as it considered grand strategy. It seems likely that, in broad terms, grand strategy will need to evolve with an emphasis on rejuvenating and sustaining the country's economic vitality while relying increasingly on credible forms of deterrence (rather than clear-cut superiority) in certain balance of power issues; and on alliances, improvement of allied capabilities, and use of international organizations. What is needed, arguably, is a national security strategy of comprehensive balancing rather than just a rebalancing of military capabilities. **JFQ**

NOTES

[1] This article is based on a longer and more fully referenced paper: Paul K. Davis and Peter A. Wilson, *Looming Discontinuities in U.S. Military Strategy and Defense Planning: Colliding RMAs Necessitate a New Strategy*, Occasional Paper OP–326–OSD (Santa Monica, CA: RAND, 2010).

[2] Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age," *Foreign Affairs* (January–February 2009); Department of Defense (DOD), *Quadrennial Defense Review Report* (Washington, DC: DOD, 2010); Michèle A. Flournoy and Shawn Brimley, "The Defense Inheritance: Challenges and Choices for the Next Pentagon Team," *Washington Quarterly* 31, no. 4 (Autumn 2008), 59–76; Andrew F. Krepinevich, "The Pentagon's Wasting Assets: The Eroding Foundations of American Power," *Foreign Affairs* (July–August 2009), 18–33; and John Arquilla, *Worst Enemy: The Reluctant Transformation of the American Military* (Chicago: Ivan R. Dee, 2008).

[3] See Matt Matthews, *We Were Caught Unprepared: The 2006 Hezbollah-Israeli War* (Fort Leavenworth, KS: Combat Studies Institute Press, 2008).

[4] See Dakota L. Wood, *The U.S. Marine Corps: Fleet Marine Forces for the 21st Century* (Washington, DC: Center for Strategic and Budgetary Assessments, 2008).

[5] See Defense Science Board Task Force, *The Future of the Global Positioning System* (Washington, DC: DOD, October 2005).

[6] See Russell Frank Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1977).

[7] See Paul K. Davis, "Military Transformation? Which Transformation, and What Lies Ahead?" in *The George W. Bush Defense Program: Policy, Strategy and War*, ed. Stephen J. Cimbala (Dulles, VA: Potomac Books, 2010), 11–42.

[8] As examples, the North Atlantic Treaty Organization fielded tactical nuclear weapons (RMA III) to help deter perceived RMA I superiority of the Red Army during the 1950s. Modern superheavy tanks with advanced passive and active armor are an RMA I response to the proliferation of early antitank-guided munitions (an early manifestation of RMA IV). More recently, RMA IV tools and methods used as part of the Army's Task Force Odin are a response to the methods of insurgents (RMA II).

[9] Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China* (Washington, DC: DOD, 2010).

[10] Ibid., 26.

[11] China's behavior has included aggressive use of computer network exploitation as described in William J. Lynn, "Defending a New Domain: The Pentagon's Cyberstrategy," *Foreign Affairs* (September–October 2010). One reason for China's assertiveness may be an increasing military influence on government policy; see John Lee, "The End of Smile Diplomacy," *National Interest*, September 23, 2010. Other reasons may include Chinese domestic politics, overconfidence, and a notion of U.S. decline as discussed in Joseph S. Nye, "China seems to have made wrong call on its relations with U.S.," *Scotsman*, March 17, 2010. Some within China probably exaggerate the strategic significance of the tiny islands in areas of disputed sovereignty. Official Chinese documents suggest that calmer assessments prevail within elite circles; see *China's National Defense in 2008* (Beijing: Information Office of the State Council of the People's Republic of China, January 2009).

[12] David Brewster, "An Indian Sphere of Influence in the Indian Ocean," *Security Challenges* 6, no. 3 (2010), 1–20.

[13] Most of these challenges were anticipated more than a decade ago. See Paul K. Davis et al., *Transforming U.S. Forces: Suggestions for U.S. Strategy*, Issue Paper IP–179 (Santa Monica, CA: RAND, 1998).

[14] See especially Arquilla.

[15] Thom Shanker, "Pentagon Plans Steps to Reduce Budget and Jobs," *The New York Times*, August 9, 2010. Steps in dissolution of U.S. Joint Forces Command continue; see, for example, Cheryl Pellerin, "Odierno Details Joint Forces Command Disestablishment Plans," American Forces Press Service, February 9, 2011.

Commanding general of Regional Command Southwest looks over village of Chineh in Helmand Province, near Combat Outpost Ouellette

U.S. Marine Corps (Jesse J. Johnson)

Thoughts on Force Design
in an Era of Shrinking Defense Budgets

By DOUGLAS A. MACGREGOR

Force design is an essential tool in the hands of national political and military leaders to counter uncertainty in conflict or crisis. An agile force design can both create options and reduce risk should events take unexpected turns. No force design or national military strategy can address or eliminate all uncertainties, but an agile force design that provides national and allied political and military leaders with the means to comprehensively

direct military power can dramatically reduce risk across the range of alternative future national security needs.

In recent remarks to the Corps of Cadets at West Point, former Secretary of Defense Robert Gates implied the need for fundamental change in force design when he insisted that "any future defense secretary who advises the President to again send a big American land army into Asia or into the Middle East or Africa should 'have his head examined,' as

General [Douglas] MacArthur so delicately put it."[1] When Secretary Gates's remarks are viewed in the context of reduced Federal spending on defense, they reinforce the criticality of developing the right force design to ensure policymakers avoid shortsighted solutions that sacrifice critical current and

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future capabilities on the altar of near-term economy.

Put differently, today, the greater Middle East, Africa, and Southwest Asia are at the center of U.S. and allied security concerns. Tomorrow, far more serious military challenges to U.S. and allied security may emanate from Northeast Asia, Central Asia, and Latin America. In contrast to the recent past, these crises are likely to involve interstate conflicts for regional power and influence that overlap with the competition for energy, water, food, mineral resources, and the wealth these create.[2]

This article argues that American political and military leaders have an opportunity to expand the Nation's range of strategic options while reducing costs by finally breaking with the industrial age paradigm of warfare. The United States can do this by building a 21st-century scalable "Lego-like" force design, one structured and equipped for dispersed mobile warfare inside an integrated maneuver-strike-intelligence, surveillance, reconnaissance (ISR)-sustainment complex that combines the Nation's ground maneuver forces with strike, ISR, and sustainment capabilities from all of the Services. To construct this new force design,

America's political and military leaders should take the following steps:

■ recognize that current and future strategic environments require changes in U.S. and allied force development strategies

■ devise a new operational concept for the Armed Forces appropriate to current and future strategic environments

■ within the fiscal means available, reorganize existing U.S. forces into a more efficient and integrative force design under regional unified commands to execute the new operational concept

■ use the resulting annualized savings—between $100 billion and $150 billion[3]—in manpower and resources both to pay down the national debt and to reorient our investment in military power to support the development of future military capabilities and new operational concepts.

The trendlines are unambiguous: military establishments that integrate functions and capabilities across Service lines, and, in the allied context, across national lines, while simultaneously eliminating unneeded overhead not only are less expensive to operate and maintain,[4] but they also are likely to be far

more lethal. If adopted, the recommendations outlined in this article will create the foundation for an enduring American strategic military advantage at a point in time when the United States must economize on defense—saving hundreds of billions of dollars in the years ahead.

Understanding What Is Changing

At the heart of all national military strategy is the desire to increase the state's capacity for independent action. Independent people and organizations enjoy greater latitude for action at a time and place of their choosing. The same is true for the United States and its allies. However, to craft a force development strategy to achieve this goal, America's political and military leaders must understand what is changing in military affairs.

First, military power is no longer based on the mass mobilization of the manpower and resources of the entire state. Conscript armed forces, the norm in the 19th and 20th centuries, are gradually being replaced with professional military establishments inundated with technology.

Second, precision effects (kinetic and nonkinetic) using a vast array of strike

Airmen prepare B–1B Lancer for mission in support of NATO operations over Libya

U.S. Air Force (Marc I. Lane)

forces enabled by the rapid and timely dissemination of information through networked ISR capabilities point the way to a fundamental *paradigm shift* in the character of warfare. For example, a military contest on the model of Kursk in July 1943—a battle that involved nearly 940,000 attacking German forces and 1.5 million defending Soviet forces in a geographical area the size of England—would result in catastrophic losses for the defending side. Today, any ground combat force that immobilizes itself in prepared defenses on this World War II model would be identified, targeted, and annihilated from a distance.

Third, integrative command structures and new organizations for combat are essential features of this shift. Aircraft and ships involved in strike operations, both manned and unmanned, have excellent sensors that can be linked to other elements of the fighting force to support the translation of collected information into actionable intelligence. As a result, ISR and strike are mission areas that cut across all domains (land, sea, air, and space). In addition, ISR and strike capabilities now have the capacity to influence not only tactical strike and maneuver operations, but also the operational and strategic conduct of warfighting operations.

Fourth, the conditions shaping *dispersed mobile warfare* do not eliminate the close fight in ground combat operations whether these operations involve interstate or subnational conflicts. Nor do they eliminate uncertainty, surprise, or confusion from warfare. Regardless of how well new technologies are networked, they cannot provide perfect situational awareness or perfect information. Soldiers, Sailors, and Airmen will never know everything that happens inside their battlespace, and what they do learn will often be of fleeting value. Commanders must still think and act on short notice with incomplete information within the framework of a known operational intent.

Mines, rocket-propelled grenades, machineguns, mortars, chemical agents, barbed wire, and air defense systems are still effective against ground forces, even in this era of precision strikes. Mobile armored firepower inside the ground maneuver force will be more important than ever given the speed with which information must be assimilated, synthesized, and delivered in time to be exploited. A ground force that cannot take hits and keep fighting will collapse quickly.

Networked information systems cannot replace killing power or organic survivability in the form of armored forces, especially in close combat. Ground maneuver forces (light, medium, or heavy) that cannot rapidly disperse to avoid presenting lucrative targets to the opposing force risk destruction.

Fifth, surprise in warfare is still attainable. Countermeasures in many forms including cyber warfare ensure the fog of war will persist. Many nation-states are acutely sensitive to these trends, and they are preparing to fight under these conditions in the future.[5] The more advanced scientific-industrial powers are building a large, diverse, and reliable range of conventional ballistic missiles for deep precision strikes designed to operate within terrestrial- and space-based sensor networks.[6]

Smaller powers with competent armed forces but less sophisticated technology are adapting to these changing conditions as well. For instance, the Yugoslav army adjusted with considerable success to cope with U.S. and Allied striking power during the Kosovo crisis. Thousands of small, mobile elements, skillfully concealed in rough terrain and aided by marginal weather conditions, were difficult to target from high altitudes. Overhead surveillance turned out to be more limited

U.S. Air Force (DeNoris Mickle)

10th Special Forces Group fast-rope from CV–22 Osprey during exercise Emerald Warrior 2011

Tomahawk cruise missile launches from USS *Barry* operating in Mediterranean Sea in support of Operation *Odyssey Dawn*

U.S. Navy (Jonathan Sunderman)

and more susceptible to deception than anticipated. In the absence of an attacking North Atlantic Treaty Organization ground force, the Yugoslav ground forces were never compelled to mass or concentrate.[7]

All of these points suggest an enormous strategic advantage will accrue to military establishments with an integrated military command structure and the right force design to orchestrate military capabilities across Service lines in the conduct of decisive operations. As the global experience in the private sector demonstrates, fewer but smarter people with intelligent technology can accomplish more than masses of troops with the brute force tools of the past.[8]

Defining a New Concept

Form defines warfare more than numbers or technology. The interaction of technology with organizational paradigms

creates powerful new military capabilities. Embracing new technology is important, but it should not be done indiscriminately, out of fear of being left behind. Technology should be chosen for integration on the basis of what it can do today, as well as its potential for future development. It is therefore vital to establish the form that warfare will take, then, to determine the right joint operational concept and the appropriate force design to exploit technology.

Ubiquitous strike capabilities and the proliferation of weapons of mass destruction (WMD), nuclear or nonnuclear, now make the concentration of large land, naval, or air forces dangerous. As a result, dispersed mobile warfare—a condition that elevates tactical dispersion to the operational level of war—is replacing warfare on the World War II model of defined continuous fronts as the dominant form of combat. Moreover, in dis-

persed mobile warfare, integrated "all-arms" warfare is the overarching joint operational concept for warfighting operations.

All-arms operations integrate the functional capabilities of maneuver, strike, ISR, and sustainment across Service lines inside a seamless unified command and control (C^2) operational framework. In fact, success in contemporary and future warfare on land, at sea, or in the air demands the ability to maneuver from a dispersed configuration, concentrating effects and, for brief periods, ground combat forces at decisive points in time and space when conditions demand it.

Clearly, the most favorable conditions on land exist when ground forces operate within the framework of an integrated network of maneuver-strike-ISR-sustainment functions, hereafter referred to as the *complex*. Within the complex, attacking ground forces compel opposing enemy

forces to mass in response or else risk defeat in detail.

To effectively and economically defend U.S. and allied interests in the 21st century, forces should be organized to operate inside this complex to ensure responsive and accelerated decision cycles at all levels. Precision strikes from the air and sea can incapacitate enemy command and control, but the confusion and paralysis thus engendered are always temporary. Without the experience of warfare, people (including those in uniform) forget that the enemy is a reactive system.

Future adversaries, regardless of national identity, will work hard and rapidly to restore communication connections. They will also seek other ways to communicate that are less vulnerable to strikes and discover ways to preserve operational coherence without being detected. Over time, future nation-state and nonstate opponents should be expected to recover from the initial disruption that strikes cause.

It is essential, then, to destroy the opponent before recovery, which is why ground combat forces with tactical mobility, devastating firepower, and effective armored protection must be tightly integrated within the complex. Achieving this outcome requires the establishment of an integrated military command structure designed to employ dispersed and distributed combat elements as capability-based forces from all of the Services inside the complex.

Reorganizing Forces

Because the simplest tasks in war are difficult, complex command arrangements involving fragmented authority must be avoided. How information is used during conflict or crisis reflects the structures of the information flow, as well as the thinking and mentality of the people who use the information. The two influence one another and are inextricably intertwined.

World War II battles in which the Soviet Union was involved were generally decided in favor of the Soviet Union in part because its leadership organized and employed its armed forces under a unified military command structure that compelled integration of core service capabilities under a single operational commander. But the Soviet leadership was able to maximize combat power (land, sea, and air) where it was needed and economize where it was not needed. The branches of the Soviet armed forces were thoroughly subor-

dinated to the *Stavka* (General Headquarters) and its subordinate command echelons— front and army—ensuring uncontested unity of action on the strategic and operational levels of war.[9]

It is also fair to characterize the Soviet command and control structure that triumphed in World War II as a highly centralized, top-down, ground force–dominated, attrition-based, mechanized/industrial one that squandered human life and resources on a scale beyond Western comprehension. However, regardless of the profound cultural differences that separated the United States and Europe from the Soviet Union, these are

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without the experience of warfare, people forget that the enemy is a reactive system

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virtuous military outcomes worthy of emulation by U.S. and allied forces.

In the West, neither the Germans nor Western Allies created similar arrangements. For the Americans and British, Sir Winston Churchill's complaint that the "chiefs of staff system leads to weak or faltering decisions— or rather indecision"[10] went unheeded. In the United States, the Service chiefs together with policymakers in Washington set out to institutionalize the way that the United States fought World War II in the 1947 National Security Act. Subsequent legislative attempts to reduce the excessive bureaucratic power of the separate Services to fund and equip themselves independently, as well as the influence of single-Service warfare doctrine and organizations, have been limited in terms of how operations are conducted, as well as in terms of staggering American defense costs.[11]

The point is unambiguous. For reasons of cost, as well as survivability and lethality, less overhead and more combat power at the lowest level are organizing imperatives in 21st-century dispersed mobile warfare. Part of the solution is to implement a new integrated operational military command structure designed to conduct U.S. and American-led allied operations at home and abroad.

Establishing the Construct

In the United States, Armed Forces operational decisionmaking in other-than-ground-maneuver headquarters was

generally focused on supporting operations, not on determining their course.[12] Today, this Army-centric approach with its roots in World War II is no longer relevant. The degree of capability integration required in dispersed mobile warfare cannot be achieved inside restrictive, hierarchical, single-Service Cold War command systems suffering from information overload and too many levels of command.

On land, simply breaking existing corps and divisional structures into smaller pieces will not change the industrial age warfighting paradigm, reduce or eliminate echelons of unneeded C^2, or advance integrative, seamless jointness on the operational level. Geographically dispersed land-, air-, and sea-based forces require a high level of command coherence through technologically and intellectually shared battlespace awareness. This condition dictates the requirement for integrative command structures on the operational level that magnify the larger fighting power of the integrated joint force.
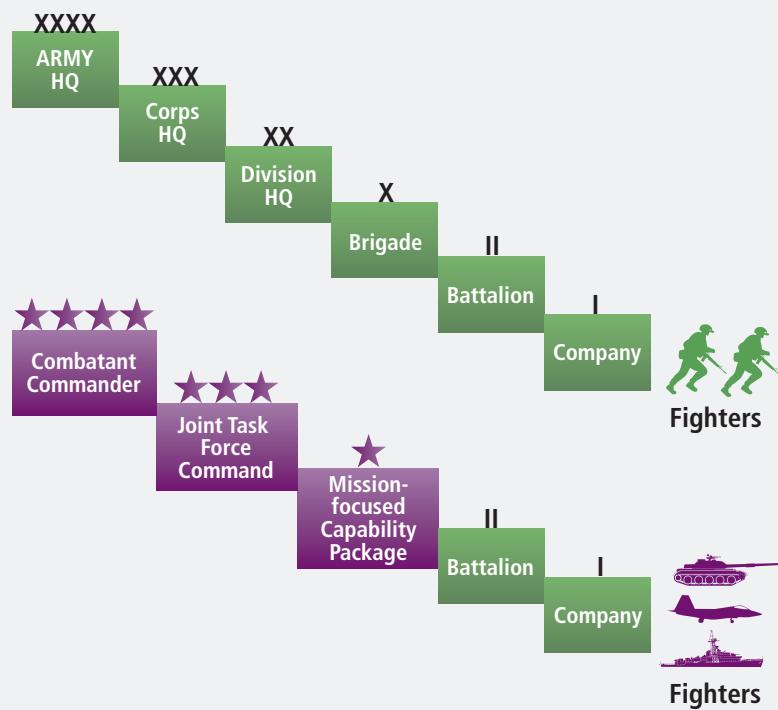
The proliferation of WMD and related strike weapons now compels the transfer and integration of capabilities once found only at the Army division and Marine Corps/Marine Expeditionary Force (MEF) levels, or only in the naval and air forces down to lower command echelons (see figure). These new command echelons must also be tightly integrated with the war-winning ISR and strike capabilities found in all of the Services. In this sense, ISR must be viewed as the key integrating function for warfighting and operational design, planning, and execution.

U.S. forces are in a position to integrate current Marine Corps/MEF and division C^2 into a joint C^2 structure such as the notional joint task force (JTF) command. This operational-level headquarters is designed to orchestrate the effects that will compel the internal collapse of an opponent through maneuver and strike without reliance on destructive time- and resource-consuming attrition warfare or mass armies.

Combining strike and maneuver into a single joint operation inside a JTF command is the core of operational art. Striking the enemy throughout the entire depth of operational deployment simultaneously and, at the same time, introducing rapid, mobile, mutually supporting air and ground forces through the disrupted force to fight a series of actions for which the enemy is not prepared is the essence of this form of warfare. These

Old Organization for Combat:
Too many single Service C² echelons
Too slow to decide
Too expensive to modernize
Too vulnerable to WMD

XXXX ARMY HQ
XXX Corps HQ
XX Division HQ
X Brigade
II Battalion
I Company
Fighters

New Organization for Combat:
Fewer integrated C² echelons
Faster decision cycle
Cheaper to modernize

★★★★ Combatant Commander
★★★ Joint Task Force Command
★ Mission-focused Capability Package
II Battalion
I Company
Fighters

conditions are no less applicable to the defeat of loosely organized guerrilla forces operating in complex or urban terrain.[13] The mission to implement this operational concept in the information age falls to the lieutenant general or vice admiral in JTF command headquarters.

Battlefields have been emptying for the last 50 years in response to new and more lethal weapons technologies. Supporting these dispersed forces will not be easy. For these reasons, a two-star flag officer focused exclusively on sustainment functions is a deputy commander for sustainment inside the JTF command structure.

With the expansion of strike and information assets, it is critical to supply the JTF commander with deputies and staffs committed to employ the full complement of ground, air, electronic, and information operations capabilities. The emergence of a deputy commander for ISR marks a shift from the World War II/Cold War mindset that treats ISR as a supporting function to a new understanding that, in the 21st century, ISR integrated with strike and maneuver operations can be both operationally and strategically decisive.[14]

One major general within the JTF leads the close combat forces deployed to the conflict area. The deputy commander for maneuver directs the operations of the ground maneuver elements in ways similar to what division or MEF commanders do today. He brings an appreciation of the critical role

battlefields have been emptying for the last 50 years in response to new and more lethal weapons technologies

that positional advantage plays in the calculus of war to the planning and execution of operations.

Another major general or rear admiral (upper half) commands strike operations. With the emergence of U.S. and allied strike complexes inside the regional unified commands, the links from deputy commander for strike to ground combat formations, as well as to the strike assets in all the Services, are pivotal.[15] With his links to strike coordination officers in every ground maneuver force and across the Services, he is simultaneously the critical connection to air and naval strike

capabilities. The evolution from deployable teams to liaison officers to permanent party experts was a key element in increasing the effectiveness of space capabilities as geographic theater commanders gained more influence over space requirements and integration.[16] Strike capabilities should be employed by similar officers with specialized expertise. In this capacity, the deputy commander for strike can exploit capabilities residing in all Service strike and maneuver forces to support maneuver and suppress or defeat enemy air defenses as well as enemy missile attacks.

In addition to these JTF "force employment" headquarters, two sets of future resource pooling or management headquarters could be formed to provide capabilities across the various theaters of operations to the combatant commanders, as well as to the JTF commands. These functionally based commands would include:

■ Theater Strike and Missile Defense Command
■ Theater ISR Command
■ Theater Maneuver Command
■ Theater Sustainment Command.

Two sets of these resource management headquarters would be capable of managing the force and asset management tasks on a global basis.

These JTF commands would exist in sufficient quantity to command and employ U.S. and allied forces on land, at sea, or in the air. All forces would be designed as mission

need is fleeting, and traditional Army and Marine command structures that cannot jump on this intelligence and exploit it have been compelled to change thinking and behavior.[17]

What emerges from the experience of the last 9 years is the growing recognition inside the Army (and, more recently, inside

The CMG combines the command element, fighting power, and support element into a stand-alone, mission-focused capability package. The CMG is commanded by a brigadier general with a robust staff, including a deputy commander and a chief of staff, both of whom are colonels.

The CMG drives the joint command, control, communications, computers, intelligence, surveillance, and reconnaissance (C[4]ISR) plugs to lower levels, compressing the tactical and operational levels to the point where maneuver and strike are integrated at a much lower level than is currently possible. Maneuver, strike, ISR and sustainment formations become clusters of joint combat power that have the capacity for operations on land reminiscent of the way ships operate at sea. Translated into terms that Soldiers and Marines understand, the new force design must offer the following features:

in land warfare, the next logical step in force design is a 5,000- to 6,000-man formation called a Combat Maneuver Group

capability packages organized for employment under one-star commanders. American air and naval forces routinely assemble forces organized around ISR, strike, sustainment, and maneuver tailored to specific missions. Sometimes these are composite wings or surface action groups. However, ground forces have only recently begun to think in terms of mission-focused capability packages. Movement toward harmonization—and away from Cold War notions of C[2] synchronization—has been critical to this outcome. Increasingly, the sort of intelligence that Soldiers and Marines

the Marines with the standup of a large, independent Marine brigade battle group in Afghanistan) that a new self-contained combat formation is needed[18]—one smaller than a division, but larger than a standard brigade, a formation capable of limited independent action that eliminates unnecessary command levels and drives jointness to a much lower level.[19]

All of these points suggest that in land warfare, the next logical step in force design is a 5,000- to 6,000-man formation called a Combat Maneuver Group (CMG).

■ ready on call, quickly deployable, and employable by joint force commanders

■ adaptable for a range of operations

■ easily integrated and networked within the joint force

MQ–1 Predator provides airborne reconnaissance, surveillance, and target acquisition for coalition forces in Iraq

U.S. Air Force (Brian Ferguson)

■ supportable despite distance and dispersion

■ survivable against any adversary

■ trained with the other Service components so that they are capable of "integrated joint warfighting" on short notice.

In the new C² organization modeled on the JTF command structure, there is a Strike Coordinator. These coordinators supplant existing fire support officers in the ground forces and become specialists in all the Services with joint training to qualify them to direct strike operations on behalf of ground combat groups or similar mission-focused capability packages from the air and sea. They are designed to be an extension of the strike structure into every land, naval, or air formation.[20]

The end result of this process is a module of combat power that can deploy in smaller configurations below 5,000 to 6,000—of 2,500, 1,100, and 500—or with augmentation from allies or other combat groups for small-scale operations. They can also deploy with other modules (ISR, strike, sustainment) for larger contingencies. However, they do not require augmentation from higher echelons to be joint interoperable. With joint C⁴ISR, these formations become building blocks that are federated to create larger forces as required.

Transforming all Service forces into mission-focused force packages that can be assembled into larger joint operational forces is essential if maneuver, strike, ISR, and sustainment capabilities are to be effectively integrated to pose more complex threats to new enemies. In practice, this scheme for military power depends on evolving integrated, joint systems and a technical architecture (a set of building codes) for successful aggregation.

There are many benefits to this approach. Eliminating some of the career gates on the Service ladder changes career patterns, allowing more time for lieutenant colonels and colonels (as well as naval equivalent ranks) to become educated and qualified for joint operations—something current Service career patterns obstruct. Reorganizing ground maneuver forces into 5,000- to 6,000-man combat formations under brigadier generals provides a larger, ready, deployable, joint combat force of Soldiers.

Another benefit is the appointment of a brigadier general to command on the tactical level. Here, the historical record is illuminating. Accompanying the first infantrymen

ashore on June 6, 1944, was Brigadier General Theodore Roosevelt, the only American general officer who arrived with the first wave of troops on D-Day. When Roosevelt realized that the initial assault force had landed 2,000 yards south of where they should have on Utah Beach, Roosevelt adjusted the plan, telling the company commanders precisely where they were and directed their movement inland along new routes. The result was rapid penetration, in a few hours, by American infantry several miles inland that Army intelligence analysts predicted would take several days.

On Omaha Beach, where there was no general officer present, the situation was far more confused and more costly in terms of American dead. The proposed model for Force Employment within the New Operational Concept will similarly improve the effectiveness of American tactical operations and their efficient integration into operations designed to support national strategic objectives.

Reorienting Modernization

The compression of reduced C² overhead while combining existing single-Service echelons into a flatter, multi-Service integrative C² structure will definitely contribute to long-term cost savings. The point is to reduce the bloated C² overhead, a legacy of the Cold War, while maximizing ready and deployable combat power. Combining the implementation of the integrative command resource management structures inside the regional maneuver-strike-ISR-sustainment complexes with the compression of today's six regional unified commands (U.S. European, Central, Pacific, Southern, Northern, and Africa Commands) into four (potentially U.S. Pacific, Atlantic, Northern, and Southern Commands) would accomplish both objectives: increasing capability while achieving annualized savings in current defense spending of at least $100 billion.

Implementing the Navy's rotational readiness model across American (and potentially allied) forces would also result in additional efficiencies, while simultaneously improving unity of effort and rationalizing the training, modernization, deployment, and reconstitution of U.S. and allied forces. Rotating U.S. forces through four readiness training, deployment, recovery, and reconstitution phases of 6 to 9 months each guarantees a larger portion of the current U.S. joint force

is ready to fight on short notice than is the case today. The importance of making routine deployments more predictable, ensuring regular periods of rest for American troops, cannot be overstated.

The cost savings involved in reducing unneeded wear and tear on equipment and people should now be self-evident, but these savings do not entirely address the probable savings in manpower and equipment. For instance, sea control is no longer a mission that demands a large surface fleet on the World War II model. America's nuclear submarine fleet augmented with fewer surface combatants employing long-range sensors, manned and unmanned aircraft, communications, and missiles can dominate the world's oceans, ensuring the United States and its allies control access to the maritime domain that supports 91 percent of the world's commerce.

Annualized savings resulting from change associated with the maneuver-strike-ISR-sustainment complexes in the various regional unified commands would also run into the tens of billions of dollars as combatant commanders and Service chiefs restructure the conduct of overseas presence missions and determine those overseas facilities they no longer deem operationally useful. The method used to identify and capture these savings is a detailed blueprint for change in a Force Design Roadmap. For every capability gap identified, selected equipment sets and supporting jobs will be identified for elimination to liberate resources for investment to close those gaps.

Closing Thoughts

To leverage uncertainty and judiciously select from the warfighting concepts and technologies of the present to field new innovative organizations and capabilities for the future within the fiscal constraints imposed by economic stringency, the United States should chart a new course into the future. As implied at the beginning of this article, change in military affairs is inevitable. Bill Gates stated it best, warning that when waves of change appear, "You can duck under the wave, stand fast against the wave or, better yet, surf the wave." Put another way, the faster you can accurately assess a situation, make "good enough" decisions on what to do about it, and act decisively to deal with it, the more competitive you become.[21]

The time has come to begin reorganizing the manpower and capabilities inside the Nation's Armed Forces within an integrated, joint operational framework to provide a larger pool of ready, deployable fighting forces

the future points toward smaller, more lethal force packages designed for missions of limited duration and scope

on rotational readiness. Building maneuver-strike-ISR-sustainment complexes inside the regional unified commands is a way to create the foundation for enduring American military power on a global level at a time when the Nation's public debt—if honestly calculated to include $7 trillion of additional deficit spending through 2015—will approach $18 trillion.[22]

Enduring strategic power is vital in a world where the proliferation of WMD makes future operations from large, expensive fixed installations like those in Iraq and Afghanistan extremely dangerous. Instead, land, naval, and air forces must mobilize organic combat power that is disproportionate to their size and numbers inside an integrated framework. The future points toward smaller but more lethal force packages designed for missions of limited duration and scope, not mass armies created for territorial conquest and occupation. In this sense, the implementation of integrated all-arms operations within the maneuver-strike-sustainment complex outlined here not only promises to save money in national defense, but also provides the basis for a coherent, unified view of warfare that is missing from today's Armed Forces. **JFQ**

NOTES

[1] Quoted by Colin Clark, "The Gates Doctrine: Avoid Big Land Wars," DoDBuzz.com, February 27, 2011.

[2] Miriam Elder, "President Dmitry Medvedev said that Russia should unilaterally claim part of the Arctic, stepping up the race for the disputed energy-rich region," Reuters, September 17, 2008.

[3] "Debt, Deficits and Defense: A Way Forward," Report of the Sustainable Defense Task Force, June 11, 2010, 16.

[4] Scott Gebicke and Samuel Magid, *Lessons from Around the World: Benchmarking Performance in Defense*, McKinsey on Government (Pittsburgh: McKinsey & Company, Spring 2010), 12–13.

[5] John Depres, Lilita Dzirkals, and Barton Whaley, "The Timely Lessons of History: The Manchurian Model for Soviet Strategy," Report Prepared for the Assistant Secretary of Defense and Director of the Office of Net Assessment, R–1825–NA (Santa Monica, CA: RAND, July 1976). Translated Soviet after action reviews identify tracked armored fighting vehicles as the only equipment capable of operating and surviving in Manchuria's diverse desert, mountain, swamp, and forested terrain. The Soviets point to tanks as having been the decisive weapon platform in all of Manchuria.

[6] For instance, the Chinese counter U.S. military strength in "asymmetric" ways. Instead of trying to match U.S. Air Force deep strike capabilities, they are building a large, diverse, and reliable range of conventional ballistic missiles for deep precision strike. Instead of trying to match the U.S. ability to develop and operate advanced aircraft, they are investing in technologies or entire aircraft and adapt them to their own needs, and complement them with similarly obtained advanced surface-to-air missiles. Instead of trying to match U.S. Navy aircraft carriers, they are building long-range conventionally armed ballistic missile systems designed to attack those carriers and are deploying a network of sensor systems to target them.

[7] Benjamin S. Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND Project Air Force, 2001), 242–248.

[8] Alvin Toffler and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the Twenty-first Century* (Boston: Little Brown, 1993), 77.

[9] Michael Deane, Ilana Kass, and Andrew Porth, "The Soviet Command Structure in Force Design," *Strategic Review* (Spring 1984), 64–65. Notice, however, that fronts (equivalent in size to American armies) were also fully joint commands. When the Soviet Union's 40th Army deployed to Afghanistan in 1979, it did so as part of a joint task force (JTF) structure that was fully joint. On the other hand, jointness stopped at the JTF level, which caused serious problems on the tactical level.

[10] Sir Winston Churchill, quoted by Steven F. Hayward, *Churchill on Leadership* (Rocklin, CA: Prima Publishing Forum, 1997), 40.

[11] Nathan Hodge, "Pentagon Looks to Save $100 Billion Over Five Years," *The Wall Street Journal*, June 3, 2010, A11.

[12] For instance, during Operation *Desert Storm*, divisions had organic military intelligence (Combat Electronic Warfare Intelligence) battalions and signal battalions, while Third Army had a military intelligence brigade and a signal brigade. An example of a parallel external headquarters is U.S. Air Forces Central (CENTAF), the Air Force component of U.S. Central Command (USCENTCOM) during Operation *Desert Storm*. CENTAF was responsible for integrating the offensive air function throughout USCENTCOM headquarters.

[13] Nancy A. Youssef, "Pentagon Rethinking Value of Major Counterinsurgencies," *McClatchy Newspapers*, May 13, 2010.

[14] David A. Deptula and R. Greg Brown, "A House Divided: The Indivisibility of Intelligence, Surveillance, and Reconnaissance," *Air Power Journal* (December 2008), 21.

[15] Richard Hart Sinnreich, "Air-Ground Integration Requires More Than Patchwork," *Lawton (OK) Constitution*, October 6, 2002, 1.

[16] Keth W. Balts, "Intell, Satellites + Remotely Piloted Aircraft," *Air and Space Power Journal* (Fall 2010), 19. Balts writes, "While this evolution occurred at the junior-officer level, a similar one occurred at the senior level, although it lagged the junior-level process by several years. Senior space officers served as liaison officers, deployed, and then eventually became permanent members of theater headquarters as *directors of space forces*, positions created to facilitate coordination, integration, and staffing activities in support of space-integration efforts for the combined force air component commander."

[17] "Deptula: ISR Surge Will Overwhelm Military's Ability to Process Intel," *Inside the Air Force*, October 23, 2009, 5.

[18] Jason Sherman, "Army Plans 'Comprehensive' Review of How to Modify Brigade Design," Inside Defense.com, October 26, 2010.

[19] Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-first Century Warfare*, (London: Brassey's, 1985), 290.

[20] Clearly, the Air Force will need to be convinced that these new strike coordinators know how aircraft, manned or unmanned, fly, how they fight, how they are at risk if misused, what aircraft can and cannot do, and how to use them with minimal fratricide/collateral damage risk. In addition, the Army will need to be convinced that the strike coordinator knows artillery, rockets, mortars, and unmanned combat aerial vehicles, what they can and cannot do, what tools are available, and how to use them with minimal fratricide/collateral damage risk.

[21] Robert L. Cantrell, *Outpacing the Competition: Patent-based Business Strategy* (New York: John Wiley & Sons, 2009), 260–261.

[22] David Stockman, "Four Deformations of the Apocalypse," *The Wall Street Journal*, July 31, 2010.

Linking

Military Service Budgets
to Commander Priorities

By MARK A. GALLAGHER *and* M. KENT TAYLOR

n May 2011, the Government Accountability Office (GAO) reported to the congressional committees on armed Services regarding the influence of the U.S. combat commanders (COCOMs) on the development of joint requirements as part of the Department of Defense (DOD) acquisition process.[1] The increased COCOM role in developing joint requirements was legislated by the Weapon Systems Acquisitions Reform Act of 2009 and the Ike Skelton National Defense Authorization Act for Fiscal Year 2011. The GAO reported mixed results regarding the implementation of the legislation—specifically, they found that the COCOMs are now enfranchised vis-à-vis the Joint Capabilities Integration and Development System (JCIDS) for the development of military requirements. However, the COCOMs are still at the mercy of the Services when it comes to actually developing the DOD budget and acquiring materiel; the COCOMs only provide "advisory guidance to the larger acquisition and budget processes."

In this article, we review the establishment of the COCOMs per the Goldwater-Nichols Department of Defense Reorganization Act of 1986, briefly discuss the current DOD resource allocation process, and then propose a construct to evaluate the extent to which the DOD budget is aligned with COCOM operational requirements. We also discuss how to implement this proposal along with advantages and potential concerns based on implementation of this proposal.

Worth noting is the scope of this proposal. Specifically, it is not our intent to create an algorithm whereby a bunch of budget numbers and COCOM priorities are smashed together and the output is declared to be *the* DOD budget. This analytical approach is intended to inform DOD decisionmakers, not

to make their decisions for them—that is, we do not intend to turn the DOD budget into an engineering problem. Furthermore, we are not proposing any changes to current authorities; we are simply proposing quantifiable and tractable measures of how well military department budgets align with COCOM priorities.

Establishment of COCOMs

On July 15, 1985, President Ronald Reagan signed Executive Order 12526 and created the President's Blue Ribbon Commission on Defense, chaired by David Packard.[2] The final report released in June 1986 quotes President Reagan's direction for the Packard Commission as:

The primary objective of the Commission shall be to study defense management policies and procedures, including the budget process, the procurement system, legislative

oversight, and the organizational and operational arrangements, both formal and informal, among the Office of the Secretary of Defense, the Organization of the Joint Chiefs of Staff, the Unified and Specified Command System, the Military Departments, and the Congress.

> *we are proposing quantifiable and tractable measures of how well military department budgets align with COCOM priorities*

The Packard Commission presented findings and recommendations organized around four topics in their interim report as submitted to the President on February 28, 1986:

- national security planning and budgeting
- military organization and command
- acquisition organization and procedures
- government-industry accountability.

Though DOD was faced with an increasing demand for joint planning and

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operations across the domains, the commission found that the Services were planning and conducting operations as independent, often competing organizations with little collaboration and cooperation. Similarly, the commission found that each Service advocated and acquired systems to accomplish their assigned roles and missions independently—as though each Service was the primary, if not sole, producer and consumer of its materiel. In rare instances when they did work together, the Services typically closed ranks as a last resort so as to frustrate attempts by the Secretary of Defense to impose top-down direction that would otherwise impede the status quo for the Services.

Packard Commission recommendations were primarily implemented in two ways. First, National Security Decision Directive 219, dated April 1, 1986, implemented virtually all of the commission recommendations that did not require legislative action. Second, the remaining recommendations were addressed via congressional legislation that was introduced on November 24, 1985, as H.R. 3622, "Joint Chiefs of Staff Reorganization Act of 1985." Congress enacted it as the Goldwater-Nichols Department of Defense Reorganization Act of 1986, and President Reagan signed the legislation into law on October 1, 1986 (Public Law 99–433).[3] Goldwater-Nichols made sweeping changes

to U.S. Code Title 10 that continue to impact the management and functions of DOD. The overall congressional intent for the Goldwater-Nichols legislation was outlined in Section 3:

- to reorganize DOD and strengthen civilian authority in the department
- to improve the military advice provided to the President, National Security Council, and Secretary of Defense
- to place clear responsibility on the commanders of the unified and specified combatant commands for the accomplishment of missions assigned to those commands
- to ensure that the authority of the commanders of the unified and specified combatant commands is fully commensurate with the responsibility of those commanders for the accomplishment of missions assigned to their commands
- to increase attention to the formulation of strategy and to contingency planning
- to provide for more efficient use of defense resources
- to improve joint officer management policies
- to otherwise enhance the effectiveness of military operations and improve the management and administration of DOD.

Section 211 of Goldwater-Nichols legislation created a new chapter in U.S. Code Title

10 regarding COCOMs, specifically subtitle A, part 1, chapter 6, "Combatant Commands." Chapter 6 was subdivided into six sections and addressed the following topics:

- §161, establishment of COCOMs
- §162, assignment of forces to COCOMs
- §163, role of the Chairman of the Joint Chiefs of Staff (CJCS) with respect to COCOMs
- §164, COCOM responsibilities and authorities
- §165, administration and support to COCOMs
- §166, COCOM budget proposals.

Though two sections and three subsections were added in subsequent legislation between 1986 and 2003, three sections of chapter 6 are of particular interest when it comes to issues related to DOD budgeting and resource allocation, notably §163, §164, and §166. Subsection (b) (2) of §163 specifies, among other things, that the CJCS "serves as the spokesman for the commanders of the combatant commands, especially on the operational requirements of their commands." It further specifies that the CJCS shall "evaluate and integrate" information related to COCOM requirements, "advise and make recommendations" to the Secretary of

Secretary Panetta meets with GEN David Petraeus and LtGen John Allen at Camp Eggers, Kabul, Afghanistan

Department of State (S.K. Vemmer)

Defense regarding COCOM requirements (individually and collectively), and "communicate" COCOM requirements "to other elements of the Department of Defense." Otherwise stated, the CJCS is the middleman between the COCOMs and the rest of DOD with respect to COCOM operational requirements.

Section 164 addresses COCOM responsibilities and authorities. Of note, §164 subsection (b) (1) specifies that the chain of command flows from the President to the Secretary of Defense to the COCOMs. It also describes COCOM authorities for establishing subordinate commands, organizing their forces, employing their forces, and so forth. Finally, §164 specifies the CJCS advisory role is established with respect to working at the behest of the Secretary of Defense to ensure the COCOMs have "sufficient authority, direction, and control over the commands and forces assigned to the command to exercise effective command over those commands and forces." The section leaves budget authority for the forces with the military departments so the COCOM may focus on the warfighting missions. The extent of COCOM authority for budgetary matters is confined to §166; specifically, COCOM budget proposals are limited to four specific COCOM activities: joint exercises, force training, contingencies, and selected operations.

While COCOMs should focus on warfighting rather than organizing and equipping units, they should be able to influence the types of units available. In an analogy to professional sports, the net effect of §164 and §166 is akin to a coach having full control of the team on the practice field and full control during actual games, but having very little say over who is *actually on the team*. Ideally, all levels of the sports franchise—ownership, coaches, players, and support staff—are working together when it comes to decisions on personnel, individual training, team practices, game tactics, and so forth.

DOD Resource Allocation Process
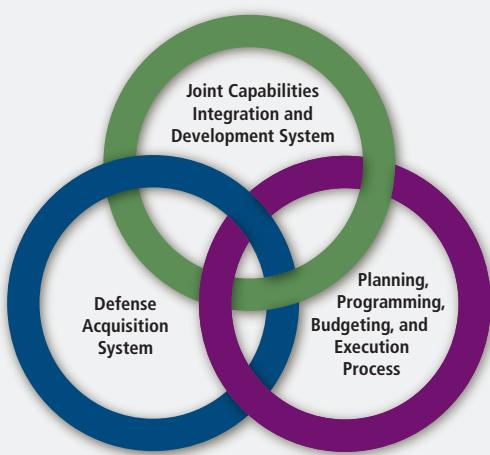
Three interrelated DOD decision support systems must be synchronized in order for COCOMs to have the general purpose forces they need to accomplish their assigned missions. The interrelationship of these three decision support systems is depicted in the accompanying figure, along with brief descriptions of each decision support system as posted on the Defense Acquisition University portal.[4]

Given the purpose of this article and the relative maturity of the COCOM role in the JCIDS process for the development of joint requirements, we focus on the DOD budgeting process and, to a lesser extent, DOD acquisition.

The Office of the Secretary of Defense (OSD) leads the annual Planning, Programming, Budgeting, and Execution (PPBE) process and builds the DOD budget. The Army, Navy (which includes the Marines), and Air Force begin the PPBE process by submitting their proposed budgets, called Program Objective Memorandums (POMs), to OSD. OSD then leads the Program and Budget Review (PBR), which adjusts the Service proposals with inputs across DOD, including the COCOMs. The PBR product, through the Office of Management and Budget, becomes the DOD portion of the President's annual budget. In turn, Congress reviews and revises the President's budget and sends approved legislation back to the President, who signs it into law. Each Service budget authorization includes funding requests to enable it to fulfill its Title 10 responsibility to organize, train, and equip forces. Consequently, the Services control the vast majority of the DOD budget.

Of the five appropriation categories in the DOD budget, three are germane to our discussion of how materiel is acquired by the

Requirements: Joint Capabilities Integration and Development System (JCIDS). The Joint Chiefs of Staff established JCIDS in 2003 to assess and resolve gaps in military joint warfighting capabilities. To effectively integrate capabilities identification and acquisition, the JCIDS guidance (CJCS Instruction 3170.01G and JCIDS Manual) was developed in close coordination with acquisition regulations (DOD 5000 series).

Budgeting: Planning, Programming, Budgeting, and Execution (PPBE). The PPBE Process is the DOD strategic planning, program development, and resource determination process. DOD uses PPBE to craft plans and programs that satisfy national security strategy demands within resource constraints.

Acquisition: Defense Acquisition System. DOD uses the Defense Acquisition System to manage the acquisition of weapons systems and automated information systems. Although based on centralized policies and principles, the system allows for decentralized and streamlined acquisition. The system is flexible and encourages innovation, while maintaining strict discipline and accountability.

Services and used by the COCOMs. In practical terms, these three categories capture what DOD is spending for future materiel, what DOD is building now, and what DOD is using now, respectively:

- research, development, testing, and evaluation (RDT&E)
- procurement (PROC)
- operations and maintenance (O&M).

The current DOD budgeting process has perceived problems of inefficiencies. A common complaint is that the Services are somewhat parochial (and arguably *myopic*) in constructing their budgets by advocating and funding new systems that are typically Service- or domain-centric as though the Services were living in a pre–Goldwater-Nichols time warp. When they advocate and fund parochial systems, they often do so at the expense of funding the acquisition and O&M for materiel that would provide the COCOMs with joint capabilities (that is, across Services). Service-centric budgeting is not a new condition; in fact, it was a problem described by General Maxwell Taylor in his 1960 book *The Uncertain Trumpet*. In this book, General Taylor describes the budget and strategy obstacles he faced in the Pentagon during the mid- and late 1950s.

Regarding the parochialism in the Services' approach to budgeting, he wrote, "We look at our forces horizontally when we think of combat functions, but we view them vertically in developing the defense budget."[5] The establishment of COCOMs has significantly modified the requirements process; however, the budget process remains essentially unchanged. The COCOMs do submit Integrated Priority Lists (IPLs) to OSD and the Joint Staff indicating challenges that the budget should address. In addition to this status quo of making marginal recommendations to the PPBE process, this proposal would give each COCOM a quantifiable prioritized input to Service budgets.

a common complaint is that the Services are somewhat parochial (and arguably myopic*) in constructing their budgets*

A COCOM Priority Rating Proposal

We propose a prioritized rating schema so that the Services' budget alignment with each COCOM's needs could be evaluated throughout the DOD budgeting process. In particular, we propose that the COCOMs score budget proposals using prioritized

ratings to quantify the relative contribution of specific budget programs to the accomplishment of each COCOM's assigned military missions. These priority ratings would serve as quantitative evaluation criteria to be included during the PPBE process and would incentivize the Services to account for COCOM priorities in the annual Service budget submissions and deliberations.

Using the President's budget submission to Congress from the previous fiscal year as a baseline, each COCOM would provide COCOM-weighted priority ratings for the Service's RDT&E, PROC, and O&M. Anyone—in a Service, OSD, the Joint Staff, or Congress—could apply COCOM prioritized

ratings to proposals in the next fiscal year's budget and assess the impact of individual or collective changes. For the sake of simplicity, RDT&E and PROC will be considered together as a composite category for acquisition (ACQ). ACQ scores are intended to give long-term preferences across years that are in

Air Force Secretary Michael Donley and Chief of Staff Gen Norton Schwartz testify on fiscal 2012 Service budget request before Senate subcommittee

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both the baseline budget and the budget being evaluated. Using ACQ as the sum of RDT&E and PROC better indicates the extent of the acquisition, and it allows the Service budget to adjust within years to account for cost, schedule, or performance issues. We contend that O&M gives a short-term evaluation, so we recommend limiting it to just the next fiscal year. We recommend using the exact same years in evaluating these measures in the baseline and new budget to avoid the impacts of production programs starting in the first year or terminating in the last year of the Future Years Development Program (FYDP). We also contend that evaluating these budget categories of acquisition (ACQ = RDT&E plus PROC) and O&M will highlight

tank programs is $2 billion, the program score for tanks by the first COCOM is 2. Similarly, the second COCOM rates tanks at 0.5, so the product with funding of $2 billion is a program score of 1. The bottom row shows the sum of the columns. In particular, the sum of the program scores, which are the weighted products of funding and ratings, indicates the level of support those Service programs (and associated program elements) provide to each COCOM. Subtotals of these scores could be used to highlight contributions from various sources, such as individual Services or major commands.

This illustrates several points. First, each COCOM has a unique military mission assigned to it. Therefore, each of the

affecting that COCOM's overall score. Funds could be transferred between tank units and plane squadrons without changing the first or second COCOM overall score. Thus, COCOM priority ratings that do not vary much across the programs have little impact on the total scores when the Service budgets are modified. The third COCOM rated funding ships twice as valuable as plane squadrons, so every additional dollar to fund ships has twice the impact on the overall score as the same additional dollar allocated to plane squadrons. The more COCOM ratings vary across the programs, the more sensitive the overall score is to adjustments in the funding.

Let us examine how these priority ratings would be useful in evaluating a proposed alternative in the next budget cycle. Continuing the previous example, consider the alternative funding depicted in table 2. In this instance, a proposal to increase the funding for tank units from $2 billion to $4 billion changes the first COCOM's corresponding product to $4 billion times the priority rating of 1 for a score of 4, which is a 100 percent increase over the baseline score of 2. The decrease in funding for airplanes from $3 billion to $2 billion, with the first COCOM priority weight of 1, causes the product to decrease from the baseline of 3 to a value of 2. This proposed measure enables anyone knowing the COCOM's priority rating to calculate the resulting scores of either funding increases or decreases. The sum of both these funding changes for the first COCOM is an increase to a total score of 6, which is a 20 percent increase over the baseline value of 5. Similarly, the combined changes result in a total score increase of 20 percent for the second COCOM and a 23 percent decrease for the third COCOM.

The relative values, rather than the absolute values, of a particular COCOM's priority ratings are what matter. If the ratings are multiplied by a factor, the sum product is also multiplied by the same factor; however, the percentage change is not affected. In the first example depicted in table 1, the priority ratings of the second COCOM are simply a factor 0.5 times the first COCOM's ratings. Hence, the percent changes are the same, so if the evaluations are not concerned with the relative differences of support to different COCOMs, the

the more COCOM ratings vary across the programs, the more sensitive the overall score is to adjustments in the funding

the linkages and disconnects between Service budgets with the programs (that is, forces or capabilities) required by the COCOMs to accomplish their assigned military missions. The other appropriation categories, including military personnel and military construction, will follow O&M and ACQ to align without requiring direct COCOM ratings.

In table 1, we show a simplified notional example to explain the scoring proposal given to four separate DOD budget programs: airplanes, ships, tanks, and education. We included education as a representative of much of the Service infrastructure that does not directly affect the warfighting capability of COCOMs. In our proposal, Programs listed in the first column represent a compilation of Service program elements related to the given program. The Baseline funding in the second column of this example could be either the sum of the acquisition over the FYDP or O&M for equipped units for the next fiscal year. For each COCOM, the Priority rating reflects COCOM reliance upon the given program in terms of meeting their assigned missions. The Program score is the product of baseline funding times the priority rating (that is, the Program score combines the level of effort and desirability of those particular programs and corresponding operational units). For the example in table 1, the first COCOM assigned a priority rating of 1 for tanks. Thus, since the baseline funding for

COCOMs will prioritize Service programs differently according to their assigned military missions and perception of the likelihood and severity of future operations. The various priority ratings reflect their COCOM commanders' subjective assessments of the relative contribution of that Service's programs in accomplishing their current and future missions in either their assigned geographic area or functional responsibilities. A priority rating of zero indicates that the given Service's program does not contribute to that COCOM's mission. Hence, Service funding of unrated programs could change or even be eliminated without changing the COCOM's overall score. In this example, ships do not contribute to the first two COCOMs, and tanks do not contribute to the third COCOM. COCOMs would not be expected to score programs that indirectly support their mission, such as professional military education.

An intended consequence of this proposal is that the Services would be incentivized to reduce their indirect costs to an extent that did not affect the quality, and hence the ratings, of their operational units. The Services could burden the operational units with some indirect costs; however, these additional costs would make their operational units appear less efficient. Priority ratings of the same value indicate that programs support that COCOM equally; hence, funding could be moved between these programs without

Table 1. Baseline Funding and COCOM Priority Rating Example, Part 1

Service program	Baseline funding (billions)	First COCOM		Second COCOM		Third COCOM	
		Priority rating	Program score	Priority rating	Program score	Priority rating	Program Score
Airplanes	$3	1	3	0.5	1.5	1	3
Ships	$5	0	0	0	0	2	10
Tanks	$2	1	2	0.5	1	0	0
Education	$1	0	0	0	0	0	0
TOTAL	$11		5		2.5		13

Table 2. Alternative Funding and COCOM Priority Rating Example, Part 2

Service program	Baseline funding (billions)	Alternative funding (billions)	First COCOM			Third COCOM		
			Priority rating	Baseline score	Alternative score	Priority rating	Baseline score	Alternative score
Airplanes	$3	$2 (–33%)	1	3	2 (–33%)	1	3	2 (–33%)
Ships	$5	$4 (–20%)	0	0	0	2	10	8 (–20%)
Tanks	$2	$4 (+100%)	1	2	4 (+100%)	0	0	0
Education	$1	$0.5 (–50%)	0	0	0	0	0	0
TOTAL	$11	$10.5 (–5%)		5	6 (+20%)		13	10 (–23%)

Table 3. Revised Funding and COCOM Priority Rating Example, Part 3

Service program	Baseline funding (billions)	Revised funding (billions)	First COCOM			Third COCOM		
			Priority rating	Baseline score	Revised score	Priority rating	Baseline score	Revised product
Airplanes	$3	$2 (–33%)	1	3	2 (–33%)	1	3	2 (–33%)
Ships	$5	$5.5 (+10%)	0	0	0	2	10	11 (+10%)
Tanks	$2	$3 (+50%)	1	2	3 (+50%)	0	0	0
Education	$1	$0.5 (–50%)	0	0	0	0	0	0
TOTAL	$11	$11 (0%)		5	5 (0%)		13	13 (0%)

total magnitude of the individual COCOM's ratings does not matter.

In a further refinement, OSD or the Joint Staff could implement this proposal to reflect specified preferences for the various COCOMs by requiring each COCOM's overall total score, the sum of the weighted funding, not to exceed an assigned limit. A lower limit would result in some combination of reduced individual ratings or reduced number of programs with an assigned weight; the result would be less assessed impact of Service budget changes. The Secretary of Defense could assign each COCOM its total prioritized dollar sum as an indication of a relative importance of that COCOM mission. For example, a geographic COCOM may be given a limit of twice the summed weighted program funding of a functional COCOM. Prescribed limits for the COCOMs' values would facilitate combining scores across COCOMs.

Decisionmakers in the PPBE process may determine that the aggregate impact to the third COCOM is too severe in the proposal in table 2. A revised funding alternative proposal is shown in table 3. This revision increases funding for tanks and ships in order to compensate for reduced airplane funding. This alternative, while adjusting various program funding, has no overall impact to any of the original COCOM's aggregate measures, shown in table 1.

Implementation

OSD or the Joint Staff could direct COCOMs to provide scores as proposed. However, the approach could also be implemented partially in at least three ways:

■ Any Service could request the COCOMs to provide scores as part of the Service's internal POM preparations.

■ A COCOM could unilaterally score the previous President's budget and announce to the Services, Joint Staff, and OSD the desire to maintain the total of weighted funding.

ISAF Joint Command Commander LTG David Rodriguez and Army Chief of Staff GEN Martin Dempsey meet in Kabul, Afghanistan, April 2011

■ A Capability Portfolio Manager (CPM) could request the COCOMs to score the Service programs under its authority.

OSD or the Joint Staff could also direct one of these partial implementations to test the value of this approach and work out the implementation details.

Advantages and Potential Concerns

This budget scoring proposal has three intended main advantages:

■ The proposal is simple, quantitative, fiscally constrained, and transparent; anyone throughout the budget process—including a Service developing its POM, OSD evaluating PBR alternatives, or Congress debating final

law—may apply the approach and use the measures to evaluate a budget decision.

■ It highlights the direct linkages (and potential disconnects) between Service budgets and COCOM priorities.

■ It maintains roles and responsibilities consistent with current Title 10 regulations.

First, this proposal is not complicated to understand, implement, or evaluate—the COCOM prioritized rating schema provides a clear, transparent, indisputable, quantitative indication of each COCOM's unique priorities over the vast range of Service programs. Since the COCOM ratings are confined to a baseline, such as the previous President's budget, the resulting measures are realistic. Given COCOM priorities, anyone may evaluate a proposed Service budget change and assess its impact to each of the COCOMs; these measures may influence decisions in the Services preparing their budget submissions, in PBR discussions among the Services, COCOMs, Joint Staff, and OSD, and in congressional debates and votes. The score may be evaluated for changes from a single program to many changes throughout the budget. These COCOM priority weightings would be useful in evaluating Service budget options throughout the PPBE and budget enactment processes.

Whereas current COCOM requirements (for example, as reflected in the COCOM IPLs) can reflect unconstrained or unrealistic demands, this proposal produces achievable indicators of demand since the COCOMs are bound within the collective Service budgets in the baseline. Funding exactly the baseline budget again would result in each COCOM achieving a 100 percent weighted score. Restricting the COCOM ratings within a DOD budget baseline, such as the President's budget submission, enforces that the rationale in the process at the expense of new and emerging joint military requirements cannot be indicated within this approach. Like the analogy to the marketplace, customers can only purchase what is for sale; however, producers are concerned about responding to customer demands to maintain future business.

Second, this budget scoring proposal would change the incentives and behavior among and within the Services. Within the Services, there are different communities (for example, major commands) that often compete for a larger portion of their Service's budget. This scoring system would likely shift the funding allocation toward programs that the various COCOMs rated as high priority. Program managers and unit commanders who want to maintain their funding would want to convince the COCOMs to rate their systems high. Presumably, the best way to advocate for COCOM support would be to deliver desired joint military capabilities. Hence, an expected benefit is increased dialogue between the Services and COCOMs regarding what the COCOMs really require and how the Services can meet these needs. Thus, the Services would be incentivized to add value *as perceived by the COCOMs*.

Moreover, this proposal would provide incentive to reduce indirect costs to the extent that they do not contribute to adding value to the COCOMs. The COCOM would not generally perceive value in indirect costs that the Services encounter to provide capabilities. Hence, a COCOM would be unlikely to give a priority rating to any indirect program. For example, we would not expect a COCOM to score professional military education or academic education. The Service would still want to continue education to the extent that it provides a perceived quality of its units to the COCOMs. The Services would have two choices: either fund these indirect costs separately, realizing that education is not going

to be scored by the COCOMs, or add the "burden" for these costs into their operational units. However, as the costs and budgets of the operational units and programs increase, the COCOMs could perceive a decrease in the benefit relative to the cost and would likely reduce the priority ratings. Thus, whether the Services leave the indirect costs separate or incorporated into their budgets for operational units, they would be incentivized to minimize indirect costs that do not reflect in the quality, and hence, in COCOM priority ratings. Like corporations, Services would be motivated to control their indirect costs.

favoring a particular group of programs with high scores does not necessarily increase those programs' funding

Third, Services, not the COCOMs, retain acquisition responsibility and authority, so the Services' Title 10 responsibilities to organize, train, and equip remain intact. The Services maintain flexibility to address issues, such as program cost, schedule, and performance tradeoffs. The COCOMs retain their focus on accomplishing their assigned missions without getting involved in detailed acquisition programmatic issues.

There are three potential concerns regarding this budget scoring proposal:

■ level of effort required for implementation
■ ability for combatant commands to game the system
■ ability of Services to game the system.

First, this proposal requires a relatively small amount of overhead for either the COCOM or Services. Unlike their roles in developing IPLs or participating in the CPM process, the COCOMs do not have to identify or evaluate programmatic challenges. With JCIDS, IPLs, and CPMs, the COCOMs are already evaluating Service programs. This proposal would provide them a means, with little additional effort, to provide quantitative assessments. The ease of application and quantitative nature would likely make these inputs have more impact on PPBE and ACQ than the IPLs.

An additional aspect of this first concern is that, from inception, the COCOMs traditionally had a short-term focus on operations. Hence, the commanders and their staffs

were not readily able to address or prioritize future acquisitions. With the increased role of COCOMs in the JCIDS requirement process, the COCOMs have created the equivalent of a J8 office to address future acquisition issues. Hence, while the COCOMs of the late 1980s would have difficulty implementing this approach, the COCOMs of today have offices that are already involved in decisions regarding future acquisition programs.

Second, COCOMs could attempt to game the program scores—for example, a COCOM commander could inject parochial bias into providing high priority weights for programs proposed by his own Service. Two aspects of transparency and impact mitigate this risk. First, these commanders would have to withstand scrutiny from OSD, the Joint Staff, and Congress. Their priority ratings should match their request for forces. After a few years of implementation, a significant departure from a predecessor's ratings would result in a call for justification. If scores lack credibility, they could be discounted with a default of returning to the current process. Second, high or low scores do not directly affect the Service programs. Favoring a particular group of programs with high scores does not necessarily increase those programs' funding. High scores from a COCOM would make the Service have to justify reduced funding; hence, the Services lose some flexibility from high scores. While low or zero scores allow programming flexibility, they would undermine any attempt to object about those programs being reduced. This double-edged sword of high ratings with operational support versus low ratings with budgeting flexibility would tend to enforce honest ratings.

Third, the Services could attempt to game this scoring system in a couple of ways. First, they could maintain acquisition scores by delaying programmatic funding to the out years of the FYDP. However, the unrealistic budget profiles for RDT&E or procurement profiles would be apparent to anyone reviewing the approach. Second, the Services could inflate their budget values; however, the COCOMs would likely reduce ratings

on programs with apparent increased costs because they would not provide proportionally more benefits for the associated resources. A limit on total COCOM scores would further inhibit high scores for programs with inflated funding. The transparency and nonbinding approach of this proposed process result in little risk of testing this scheme.

Goldwater-Nichols legislation established the roles of the Services as materiel providers and COCOMs as materiel customers. Subsequent legislation provided COCOMs with direct input to the development of operational requirements. This proposal extends those legislative actions by providing a simple approach for the combatant commands to provide priority weights and quantitative scores to Service budgets. The net result would be the creation of a "market" where programs (vis-à-vis operational units) compete to initiate and maintain funding. The Services, COCOMs, Joint Staff, OSD, and Congress could use the COCOM program scores to validate RDT&E, PROC, and O&M funding and to evaluate potential changes in the development of the next budget. The COCOMs would be fiscally limited to recommend priorities within the existing Service budgets to ensure realistic requests. The Services, including their internal fiefdoms, would be incentivized to deliver capabilities that the COCOMs highly valued through scores to maintain their funding. The approach is compatible with all existing budget processes. The approach may be implemented, at least on a partial scale, by any COCOM, Service, the Joint Staff, or OSD. **JFQ**

N O T E S

¹ Government Accountability Office, "Defense Management: Perspectives on the Involvement of the Combatant Commands in the Development of Joint Requirements," available at <www.gao.gov/products/GAO-11-527R?source=ra>.

² President's Blue Ribbon Commission on Defense, Final Report, June 30, 1986, available at <www.ndu.edu/library/pbrc/36Ex2AppC1.pdf>.

³ Public Law 99–433, section 3, October 1, 1986, available at <http://osdhistory.defense.gov/docs/Goldwater-NicholsDODReorganizationActof1986.pdf>.

⁴ "DOD Decision Support Systems," available at <https://dap.dau.mil/aphome/Pages/Default.aspx>.

⁵ Maxwell Taylor, *The Uncertain Trumpet* (New York: Harper & Brothers, 1960), 123.

HARNESSING AMERICA'S POWER

A U.S. National Security Structure for the 21st Century

By PETER C. PHILLIPS *and* CHARLES S. CORCORAN

Successfully contending with the challenges of the 21st-century environment requires an extensive overhaul of America's national security bureaucracy. In the executive branch, nearly every department has a strategy document citing the need for greater interagency cooperation, but little is being done to facilitate such efforts. Current authority, funding, and oversight structures reward independent stovepiped action rather than interdependent, whole-of-government approaches to national security issues. As a result, cooperation among executive agencies is generally a reactive phenomenon, resulting from a cobbled-together response to crisis, rather than a proactive application of all instruments of national power in a concerted effort to shape the environment in favor of U.S. interests. This article proposes a solution. Specifically, it provides a blueprint for an integrated, agile national security apparatus

with the necessary authority, resources, and oversight to shape the environment and conduct efficient and effective crisis response operations.

> *cooperation among executive agencies is generally a reactive phenomenon, resulting from a cobbled-together response to crisis*

Defining National Security

Despite some minor adjustments, the core organizations and structure of the U.S. national security bureaucracy have remained largely unchanged since their establishment with the signing of the National Security Act of 1947. The system was designed to advance America's national interests, which are gener-

ally defined as physical security, economic prosperity, value preservation at home, and value projection abroad.[1] In the bipolar world of the Cold War, national security policy primarily focused on defending the homeland and major allies from Soviet attack and communist aggression. The doctrine of the day was containment, and the goal was to suppress any problems that arose to prevent escalation. Key players in executing this strategy were the Department of State and Department of Defense (DOD), as well as various intelligence agencies.

Today, while U.S. interests have not changed, the concept of security has evolved. According to a study from the Project on National Security Reform:

Commander Peter C. Phillips, USN, is a Naval Special Warfare (SEAL) Officer. Colonel Charles S. Corcoran, USAF, is a Command Pilot with over 2,400 hours in the F–15A-D and the F–22A.

Defense Secretary Panetta conducts first Pentagon press briefing

National security is the capacity of the United States to define, defend, and advance its position in a world characterized by turbulent forces of change. The objectives of national security include—(i) security from aggression against the nation by means of a national capacity to shape the strategic environment; to anticipate and prevent threats; to respond to attacks by defeating enemies; to recover from the effects of attack; and to sustain the costs of defense; (ii) security against massive societal disruption as a result of natural forces, including pandemics, natural disasters and climate change, and serious challenges to our national economic and financial systems; and (iii) security against the failure of major national infrastructure systems by means of building robust systems, defending them, and maintaining the capacity for recovering from damage.[2]

Shifting from a "suppress and contain" to a "shape and solve" mentality is significant. Suppression is inherently reactive in nature, while the desire to manage and solve problems efficiently and effectively requires a more proactive approach. Cold War problems

could be contained with reactive engagement. Applying a similar mindset to the potential security threats of the 21st century could lead to catastrophe. While it is refreshing to hear the Nation's leaders espouse a proactive approach, the unfortunate reality is that the national security bureaucracy has not kept pace with either the rhetoric or the changing concept of security.

The 21st-century Environment

Although changes in the security landscape are often attributed to the transition from a bipolar to a multipolar world, it is perhaps more appropriate to associate today's challenges with the transition from the industrial to the information age. Stated another way, if the Soviet Union had not collapsed, America would likely still be dealing with the issues it faces as a direct result of globalization. Access to information has led to the erosion of borders and empowerment of individuals and nonstate organizations, including terrorists, organized criminals, nongovernmental organizations (NGOs), and multinational corporations. Competi-

tion in an increasingly open global market has translated directly into rivalry for scarce energy resources and worldwide reliance on a fragile and vulnerable system of currency and capital flows. Numerous countries are facing demographic challenges, whether from aging populations with long-term care issues or bulging youth populations with limited employment opportunities. In addition, many governments in the developing world struggle to provide the most basic needs, such as food and water, to their citizens. Simply stated, today's environment is exponentially more complex than it was even 10 years ago—and the trend is likely to continue. The most important actors in this complex environment are human beings. Humans make unpredictable choices and as such are the greatest variable in any system. In the bipolar, industrial age world of 1947, there were far fewer human actors operating at the strategic level than there are in today's multipolar, information age world where nearly any individual with Internet access can spur an instant global crisis with the push of a button.

Given this diverse array of challenges, it could be argued that America's "greatest vulnerability by far is linked to the legitimacy of our leadership" as we attempt to steward the international community through this new array of nontraditional security threats.[3] In other words, absent fundamental, system-wide changes to the American national security apparatus, perhaps the greatest threat to America may be America itself.

Instruments of Power

Legitimate leadership requires smart application of all elements of national power. For many years, the acronym DIME (diplomatic, informational, military, and economic) has been used to describe the instruments of power. The names of the instruments point directly to the major executive branch actors in power application: State and DOD, as well as the Department of Commerce and intelligence agencies. It is now clear that "the day is past when a single government agency or organization—even one as large as the DOD—can manage a key foreign policy issue."[4] While it would be naive to believe U.S. strategists and policymakers do not understand that there is a much wider array of agencies involved in the development and implementation of national security policy, to further legitimize U.S. leadership for the broader audience, a whole-of-government term might better define U.S. instruments of power. For example, the acronym MIDFIELD (military, informational, diplomatic, financial, intelligence, economic, law, and development) conveys a much broader array of options (a much larger tool kit) for the strategist and policymaker to use.

One of the most important additions to this new acronym is the letter *L*. Americans take great pride that their nation is governed by the rule of law: "Our past, and the past of every other nation, tells us that law and war were opposites, two means to resolve differences, one guided by commonly agreed-upon standards of justice, the other resolved by the calculus of power."[5] Reaffirming the American commitment to the rule of law by simply adding it to our national security dialogue is a step in the right direction to restoring what Joseph Nye termed *soft power*, which he defines as the "ability to get what you want through attraction rather than coercion or payments." Nye contends that soft power "arises from the attractiveness of a country's culture, political ideals, and policies. When

our policies are seen as legitimate in the eyes of others, our soft power is enhanced."[6] Ultimately, it is our policy actions and not our words that will carry the day, but we must begin by expanding our national security vocabulary.

Another important addition to this acronym is the *D* for development. The U.S. Agency for International Development has played an integral role in advancing America's soft power image since its foundation in 1961. Despite the agency's numerous contributions to furthering U.S. interests, until recently it was rarely included in U.S. foreign policy dialogue. However, in the past year, the Secretaries of State and Defense have both renewed the U.S. commitment to the role of development by making it part of their 3D (diplomacy, development, and defense) approach to foreign policy. If American leaders wish to shape today's environment, then development is, without question, a key instrument of national security power.

Geared to Respond

Despite the desire for a proactive, whole-of-government approach to U.S. national security policy, the bureaucracy continues to operate in a reactive, responsive mode. As David Rothkopf noted:

Despite the best efforts of many national security advisors, efforts to establish strategic planning sections within the NSC [National Security Council] have typically faltered. The result is that the general state of mind within this critical institution is one of constant, frenzied reaction. Planning seems not only a luxury, but almost a dereliction of duty given the pressures of the moment. This would be dangerous under any circumstances but it is worse in the absence of basic marching orders of the sort that existed during the Cold War. Leaders must make a commitment to breaking this cycle.[7]

According to the vice chair of the 9/11 Commission, "The interagency process simply does not function well. The NSC is overwhelmed and has underperformed."[8] Whole of government cannot mean everyone develops his own plan and then we come together and decide which way to go. To break free of this cycle, the incentives must change. Success in the organization should equate to finding ways to collaborate, systematically and at the management level, rather than finding ways for "my agency to win." The root causes for

this bureaucratic dysfunction can be traced directly to current authority, funding, and oversight mechanisms that are inherent in the process.

Authority. In the current system, there are two entities in the bureaucracy with the authority to direct interagency efforts: the Chief of Mission (COM) and the Assistant to the President for National Security, more commonly referred to as the National Security Advisor (NSA). Per the Foreign Service Act of 1980, the *COM* is defined as the "principal officer in charge of a diplomatic mission of the United States or of a United States office abroad which is designated by the Secretary of State as diplomatic in nature, including any individual assigned under section 502(c) to be temporarily in charge of such a mission or office."[9] As noted in the State Department Foreign Affairs Manual, "Pursuant to the

> *many challenges require regional approaches and multilateral solutions*

President's letter of instruction, the COM has authority over every executive branch employee in the host country, except those under the command of a U.S. area military commander, or those on the staff of an international organization."[10]

Meanwhile, the NSA presides over the National Security Council. According to the National Security Act of 1947, the "function of the Council shall be to advise the President with respect to the integration of domestic, foreign, and military policies relating to the national security so as to enable the military services and the other departments and agencies of the Government to cooperate more effectively in matters involving the national security."[11]

Simply stated, the COM directs tactical-level coordination of the instruments of power within a limited geographic area (except the military instrument), while the NSA directs strategic-level coordination in the meeting rooms of Washington, DC. As the Center for Strategic and International Studies Commission on Smart Power highlights, this model is ineffective: "U.S. foreign policy institutions are fractured and compartmentalized. Coordination, where there is any, happens at either a relatively low level or else at the very highest

levels of government—both typically in crisis settings that drive out long-range planning. Stove piped institutional cultures inhibit joint action."[12] The report recommends that the government "realign agency authorities and resources to match agency roles and responsibilities in mission areas ranging from homeland security and combating terrorism to stability operations and combating WMD."[13] Clearly, the current system does not promote the application of smart power to shape the environment, allow for optimal crisis response operations, or foster strategic thought.[14]

Many challenges require regional approaches and multilateral solutions. A perfect example is the effort to counter the threat posed by the narcotics trade, as well as other illicit trafficking, particularly in the Western Hemisphere. According to a senior DOD official familiar with the issue, "Although strong bilateral relationships with several countries have resulted in tactical successes, strategic victory will be impossible without a comprehensive, region-wide (multi-lateral), whole-of-government

approach to the problem."[15] Since regional and multilateral coordination is above the COM authority level, the NSC is left managing day-to-day coordination of interagency efforts to ensure smart power application in concert with national policy directives. In addition to known issues, crisis situations seldom fall within the borders of a single COM's area of responsibility. Even when they do, COMs do not generally have access to sufficient interagency resources to respond independently. Again, in a crisis situation, the NSC is left holding the bag, responsible for managing the response operation. Since the NSC is busy conducting daily policy operations and crisis response, it does not have time to focus on its main purpose of providing strategic-level advice to the President.

There is one executive department that has the all-important middle or operational level of both planning and implementation resources built into its structure: DOD. Organized around regional combatant commands, it is uniquely suited to deal with many of these issues. In U.S. Africa Command's 2010 Posture Statement, General William

Ward did an excellent job stating the case for this missing regional link in the U.S. national security bureaucracy:

Regional cooperation is critical, whether it be neighboring countries working together against mutual threats, or region-wide efforts to establish common security networks, such as the [African Union's] cooperative security architecture. Our approach focuses on mutual interests, fostering interoperability and common situational awareness, regionally-oriented capacity building, and enhancing relationships built on trust and cooperation. The more the countries of Africa work together, the greater the likelihood that the continent will achieve lasting stability.[16]

Since the military has this unique structure and accompanying resources in place, it has increasingly been called on to implement nonmilitary policy. Some combatant commanders, recognizing the interagency coordination void at the regional level, have taken steps to improve the situation. Admiral James Stavridis of U.S. European Command

Air Force Space Command Commander General William Shelton discusses budget request for national security space activities before House Armed Services subcommittee

U.S. Air Force (Scott M. Ash)

Boeing

B–52H Stratofortress carrying X–51A Waverider scramjet taxis to runway for test flight

designated his State Department advisor as his deputy, granting this civilian full authority to direct operations in his regional command. He also established new branches of his staff to coordinate interagency operations (J9) and public-private operations (J10).[17] General Douglas Fraser of U.S. Southern Command has 25 personnel from 13 separate governmental agencies working side by side at Joint Interagency Task Force–South in Miami. As a senior DOD official recently noted, "Everyone in the interagency wants to work together. The strain in the system is due to questions of both authority and funding."[18]

Unfortunately, the increasing use of the military to fill the bureaucratic gap is not lost on outside observers and does not bode well for America's image as a smart powerbroker. As Patrick Stewart noted in his keynote address to the 2009 Humanitarian Summit:

We have seen a trend toward using the DOD's Regional Combatant Commands as platforms for coordinating regional activities of not only the U.S. military but U.S. civilian agencies. This trend is most apparent in the cases of

U.S. Southern Command and the new U.S. Africa Command. Both Commands are envisioned as having a "shaping" rather than warfighting mission. Their goal is to lead U.S. government efforts in ameliorating the sources of conflict and instability in their regions.[19]

Stewart warns this increased use of the military "poses risks to the coherence of U.S. foreign policy, the image of the U.S. abroad, and the sustainability of U.S. efforts to build stable, democratic, and economically prosperous states in the developing world."[20] He states, "If not carefully managed, it could distort broader U.S. foreign policy goals by putting a military face on U.S. global engagement; undermine development objectives in target countries; and exacerbate the long-standing imbalance in resources the U.S. currently budgets to military and civilian components of state-building."[21]

Interagency coordination authority is clearly lacking at the regional level, and the military is increasingly called on to fill this void, perhaps to the long-term detriment of U.S. security interests. Simply adding an

intermediate level of interagency coordination to the bureaucracy would not completely solve this issue. To understand the entirety of the problem, one must also examine current funding and oversight practices.

Funding. Competition among various executive agencies for an increasingly limited slice of the budget pie fosters independent, rather than integrated, approaches to solving national security challenges. In "Turning Ideas into Action," the Project on National Security Reform clearly defined the problem: "In the current system, funding is distributed program by program, department by department. In theory, this is designed to produce desired mission outcomes. In practice, however, the process focuses on means rather than ends and relies on policy entrepreneurs within the interagency space to work around the bureaucratic impediments to achieve successful mission outcomes."[22]

Much like the authority issues addressed already, many of today's funding challenges are a result of the failure to update a bureaucracy put in place following World War II.[23] While this approach may have been

USCENTCOM Commander General James Mattis is briefed by Soldiers at Patriot missile site in Southwest Asia

appropriate for Cold War policies, it is not an effective way to confront 21st-century issues, and it is certainly not conducive to a whole-of-government, environment-shaping approach to national security policy.[24]

Funding challenges are exacerbated by the Office of Management and Budget (OMB). Although OMB has an exceptional reputation for responsive, accurate, and impartial work,

effective allocation of resources is the single greatest determinant of successful policy execution

it is much like other executive agencies in that its "internal culture does not always promote cross-agency perspectives and knowledge," making it difficult to "carry out true cross-agency resource planning on a systematic basis because of stove-piping."[25] While the NSC and OMB work closely together, it is on an ad hoc rather than a statutory or Presidentially directed basis.[26] So 21st-century security issues require cross-agency efforts, but in the current resource allocation scheme, "there

is no systematic cross-agency process in the White House for giving agencies guidance for applying resource planning to strategic priorities."[27]

Poor resource allocation decisions compound the authority issues addressed earlier. In fact, "Between 1990 and 2000, while international affairs budgets were shrinking and the Foreign Service was growing smaller by

the year, the budgets of the military regional commands grew rapidly. Each of the five area combat commands saw budget increases of at least 35 percent."[28] This growth has led to an increased use of the military for nonmilitary missions to fill the interagency void at the regional level.

To solve this issue, the incentives must change: "According to budgeting experts, the effective allocation of resources is the single greatest determinant of successful policy

execution."[29] The United States must adopt a resourcing construct that rewards interagency cooperation to achieve strategic ends. To do so, the branch of government charged with allocating resources and conducting oversight will have to change fundamentally its way of conducting business.

Oversight. Every executive department and agency that receives congressional funding must also answer to Congress. Unfortunately, the current committee structures in the legislative branch foster a stovepiped approach to business in the executive. Each department and agency answers to a different committee or committees, reporting on individual actions and use of allocated resources. No single committee in either the House or Senate has a holistic view of U.S. national security aims. As a result, "little deliberate and regular assessment of policy outcomes occurs, making it difficult to achieve the feedback required to alter flawed strategies, remedy resource shortfalls or build on initial successes. This situation also makes it difficult to hold people accountable for failures or to reward superior performance."[30] Current efforts in Afghanistan provide an excellent illustration of the problem:

The Afghanistan situation . . . provide[s] a daily reminder on Capitol Hill of the pronounced need for aligning and integrating strategy and resources. Members of Congress presently struggle to see the big-picture interrelationship among all elements of national power. Instead of structuring itself to catalyze interagency approaches, Congress reinforces outdated, department-centric practices. Existing committees examine the activities of individual departments and agencies, but no one committee has a whole-of-government perspective on national security. It will take aligning congressional structures to 21st-Century challenges to change this.[31]
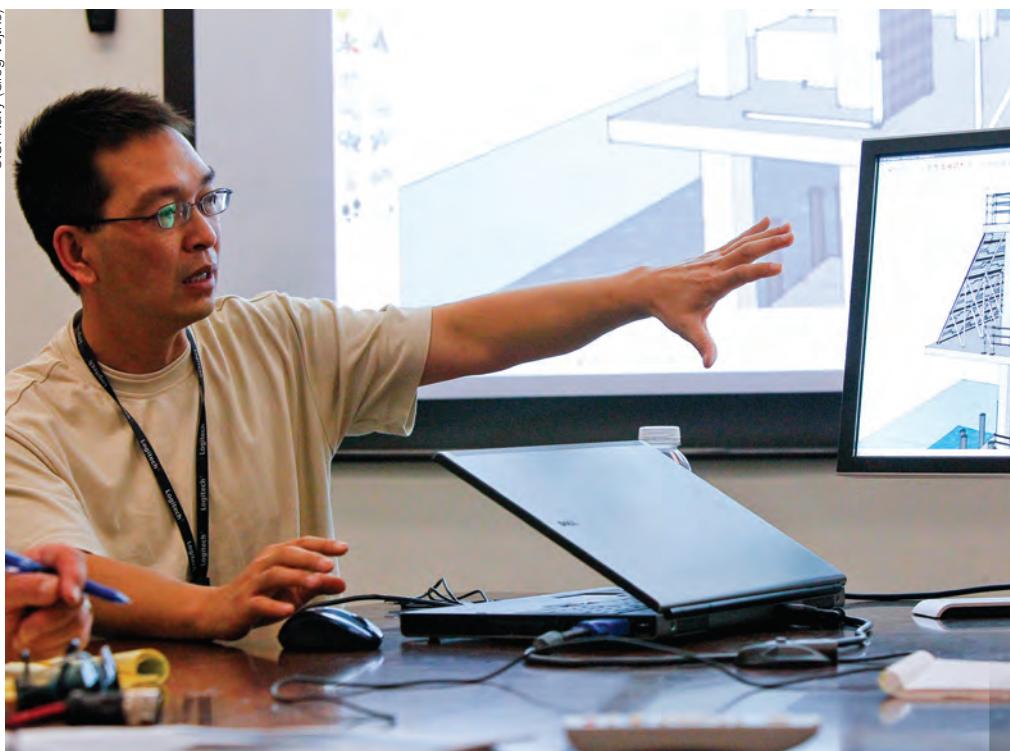
No single agency provides a clearer illustration of the dysfunctional oversight issue than the Department of Homeland Security (DHS). DHS was formed after 9/11, melding together nearly two dozen agencies in order to "better coordinate the government's resources for handling terrorism and other national emergencies."[32] While the executive branch was transforming itself to deal with new realities, Congress proved unwilling to give up any authority. As a result, "DHS gets marching orders from more than 100 committees and

U.S. Marine Corps (Jeremiah Handeland)

Marines learn to build Joint Modular Protective System developed by U.S. Army Engineer Research and Development Center

U.S. Navy (Greg Vojtko)

Engineer presents briefing on self-sustained solar power array for gunnery range microwave relay towers to be installed at Marine Corps Air Station Cherry Point

subcommittees—a number that has grown in the past seven years, despite the 9/11 Commission's recommendation to consolidate those tangled lines of authority."[33] Clearly, any meaningful national security reform proposal must include an overhaul of the congressional committee structure to improve the way Congress participates in the process.

A Proposed Solution

By examining the weaknesses and strengths in the current system, we can develop a sound model for reform. Weaknesses include the lack of an authorized interagency leader between the COM and NSA levels, and a stovepiped approach to funding and oversight that promotes individual agency successes rather than overall national security goals. Strength lies in unity of effort and command at the strategic level with the regional combatant command approach to engagement and partnership-building.

Meanwhile, today's environment demands collective regional and multilateral approaches to solve the major security challenges faced by the community of nations. The sum of this analysis lends itself to the following conclusion: the United States must develop a civilian-led interagency structure with the authority, funding, and oversight to act at the regional level.

Regional, civilian-led (Presidential appointees confirmed by the Senate), interagency bureaus charged with applying *all* U.S. instruments of power, including military, within their geographic area would solve many of the problems with the current system. First, the bureaus would free up the NSA and NSC to focus on national-level strategy. In the current system, the NSA and NSC must coordinate day-to-day interagency operations for everything above the COM level. Regional interagency bureaus could handle most if not all of these duties, including normal shaping and engagement as well as crisis response. Cross-region issues may still require arbitration at the national level, but it would be arbitration with a few high-level commanders rather than numerous agencies. Second, regional bureaus would require a new method of budgeting. Each region chief would submit a national security budget for his area of responsibility, outlining a holistic view of regional resource application to implement the overall national security strategy. This system would also provide an improved opportunity for congressional

insight on the overall execution of national security strategy.

Implementing this proposal ensures execution of NSC-level decisions through a unified interagency regional command, providing the foundation for unity of effort and a whole-of-government approach on all issues. Simply establishing such a common organizational structure familiar to all participating agencies would likely yield a more efficient process—one in which success would become more dependent on sound policy than the ability of select individuals to overcome institutional parochialism while navigating a maze of bureaucracies.

Specific proposals include that Congress should:

- mandate alignment of foreign policy actors under regional bureaus (grant regional bureaus authority to execute, as directed by the President, all foreign policy actions within geographic boundaries; and direct agencies to assume force provider functions for regional bureaus)
- streamline funding of foreign policy by moving execution funding from individual agencies under various authorities to regional bureaus under a single authority for each region
- mandate OMB–NSC collaboration to ensure continuity of resource-policy discussions from administration to administration[34]
- reorganize congressional committee structures to ensure proper funding and oversight of regional national security bureaus
- mandate professional interagency education and interagency career paths as milestones/promotion requisites for both military and civilian personnel.

Also, the President should:

- direct the NSC to develop a staffing plan for each regional bureau. Every region, with the exception of North America, should have the same organizational structure. The structure for the North American region requires unique features due to homeland legal issues.

- direct executive departments to dissolve all regional planning and implementation staffs and work with regional bureaus to integrate former department-level functions in the newly established interagency regional bureaus
- direct NSC to focus on national grand strategy and the regional bureaus to conduct day-to-day implementation of strategy and crisis response within regions
- establish permanent OMB–NSC coordination office on NSC staff responsible for oversight of funding for regional interagency commands.

Critics of such drastic reform would likely point to several areas of concern, including increased size of the bureaucracy, diluted authority for COMs, blurring of the military chain of command, and unsuitability of this model to the homeland security mission. Each of these criticisms deserves further explana-

placing regional staffs from disparate agencies in the same room and on the same team will decrease duplication of effort and free up resources

tion. First, this initiative would decrease the overall size of the bureaucracy and make it more integrated and agile. The proposal combines the regional bureaus at the Department of State, DOD, and regional combatant commands, as well as the regional staffs at the NSC. Other agencies or departments, such as some of the military Services, could shed regional staffs as well. Placing regional staffs from disparate agencies in the same room and on the same team will decrease duplication of effort and free up resources.

Critics contend this initiative would dilute the authority of the COM. On the contrary, that authority would not change. The COM would remain the President's representative on the scene and maintain the authority for all interagency activities within the appointed area. No longer will the COM need to report to a regional bureau at the State Department, coordinate interagency issues with various Washington-based agencies, or appeal to the NSC for arbitration of conflicts. Instead, the COM can handle those issues with one phone call to the respective regional interagency chief.

The potential to blur the military chain of command is another concern with this reform. The current chain of command flows

from the President to the Secretary of Defense to the regional combatant commander. This reform advocates a chain of command from the President to the regional interagency chief to the regional combatant commander, a linkage that maintains civilian control of the military and does not unnecessarily lengthen the chain of command. The Secretary of Defense would still advise the President. Additionally, this structure would likely increase the chance of success because the interagency chief in charge of U.S. strategy for the region would direct the application of military force. For example, such ownership would likely increase interagency involvement in postconflict planning and improve its quality.

Finally, some may argue this model is not adaptable to the U.S. Northern Command region and homeland security mission. This criticism fails to recognize the connection between national security and homeland security, which are, in the age of globalized terror, one and the same. Unique legal aspects and coordination issues of homeland defense must be addressed, but those cannot be impediments to implementing the overall regional interagency system proposed in this article.

This article offers a proposal to restructure the U.S. national security bureaucracy to achieve the tasks our nation has so eloquently outlined on paper but has yet to implement. In the current system, the "basic deficiency is that parochial departmental and agency interests, reinforced by Congress, paralyze the interagency cooperation even as the variety, speed, and complexity of emerging security issues prevent the White House from effectively controlling the system."[35] The failure to build a new national security structure leaves the United States with two equally unattractive options. First, continue to react to the world in 20th-century fashion, using hard power, including the use of force, to resolve problems. The likely result of such a course is a continued decline in American soft power, an increasing drain on a severely strained economy, and, in the long run, a less secure America. The second option is to withdraw from the world stage. While this approach may seem more attractive in the short term, particularly given current fiscal constraints, it is also likely to result in a drain of soft power, as well as a long-term security environment that is less favorable to U.S.

interests. The only real choice is clear: the United States must transform the national security bureaucracy to confront today's security challenges.

Change in any organization is difficult, but it is even more so in the politically charged environment of Washington, DC. Reform requires a bipartisan effort as well as congressional and executive leadership. According to the 2010 U.S. National Security Strategy, "Our long-term security will come not from our ability to instill fear in other peoples, but through our capacity to speak to their hopes."[36] Unless and until we reform our national security bureaucracy, we will be unable to achieve such noble strategic security goals. **JFQ**

NOTES

[1] Terry Deibel, *Foreign Affairs Strategy: Logic for American Statecraft* (New York: Cambridge University Press, 2007), 126.

[2] Project on National Security Reform (PNSR), *Turning Ideas into Action* (Washington, DC: PNSR, September 2009), 179.

[3] David Rothkopf, *Running the World: The Inside Story of the National Security Council and the Architects of American Power* (New York: PublicAffairs, 2005), 466.

[4] Roger Z. George and Harvey Rishikof, *The National Security Enterprise: Navigating the Labyrinth* (Washington, DC: Georgetown University Press, 2011), 332.

[5] Rothkopf, 463.

[6] Joseph Nye, *Soft Power: The Means to Success in World Politics* (New York: PublicAffairs, 2004), x.

[7] Rothkopf, 458–459.

[8] PNSR, 13.

[9] Department of State, *Foreign Affairs Manual Volume 2 Handbook 2—Post Management Organization*, September 22, 2010, 2–3, available at <www.state.gov/documents/organization/89604.pdf>.

[10] Ibid., 3–4.

[11] Rothkopf, 5.

[12] Richard L. Armitage and Joseph S. Nye, Jr., *CSIS Commission on Smart Power: A Smarter, More Secure America* (Washington, DC: CSIS Press, 2007), 7–9.

[13] Ibid., 18.

[14] *Smart power* refers to the application of both hard and soft power. Using smart power refers to making the correct choice between hard and soft power to achieve the intended strategic results.

[15] National Defense University lecture.

[16] General William Ward, USA, U.S. Africa Command Posture Statement, March 9–10, 2010, 11.

[17] Coordinating public-private operations refers to government efforts to coordinate with nongovernmental organizations.

[18] National Defense University lecture.

[19] Patrick Stewart, "Impact of the Department of Defense Initiatives on Humanitarian Assistance," keynote address to the 2009 Humanitarian Summit, Cambridge, MA, March 2009, qtd. in *Prehospital and Disaster Medicine*, vol. 24, supplement 2, s239.

[20] Ibid., s240.

[21] Ibid.

[22] PNSR, v.

[23] Ibid., 77.

[24] Ibid.

[25] Ibid., 62.

[26] Ibid., 68.

[27] Ibid., 69.

[28] Harry W. Kopp and Charles A. Gillespie, *Career Diplomacy: Life and Work in U.S. Foreign Service* (Washington, DC: Georgetown University Press, 2008), 117.

[29] Ibid., 47.

[30] PNSR, 14.

[31] Ibid., vii.

[32] Karen Tumulty and Ed O'Keefe, "History Shows Obama's Effort to Reorganize Government Could Be an Uphill Battle," *The Washington Post*, January 28, 2011.

[33] Ibid.

[34] George and Rishikof, 75.

[35] Ibid., 2.

[36] *National Security Strategy* (Washington, DC: The White House, May 2010), iii, available at <www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf>.

Marine instructs Senegalese and Malian counterterrorism team members on tactics prior to urban terrain environment training scenario

U.S. Air Force (Jeremiah Erickson)
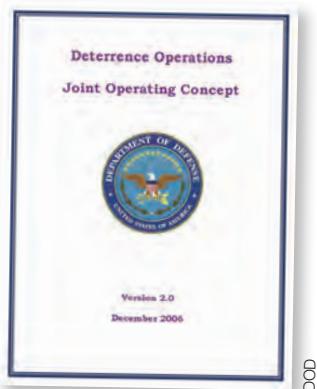
The Limits of Tailored Deterrence

By S E A N P. L A R K I N

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eterrence is back. Although the Cold War concept lost its centrality in security policy for many years, the United States embraced a modified version of it in its 2006 and 2010 National Security Strategies.[1] The original concept of deterrence—preventing an attack by credibly threatening unacceptable retaliation—has been reborn as tailored deterrence. *Tailored deterrence* seeks to customize whole-of-government deterrence strategies to specific actors and scenarios. Ideally, this approach would address the flaws in rational deterrence theory, which assumes that adversaries will make decisions exclusively on the basis of the expected costs and benefits of a contemplated course of action.

However, the U.S. approach to tailored deterrence largely ignores decades of theoretical development and criticism of rational deterrence theory. The Department of Defense (DOD) *Deterrence Operations Joint Operating Concept* (DO–JOC) describes a deterministic approach that combines rational deterrence theory with effects-based

Deterrence Operations Joint Operating Concept Version 2.0, December 2006

operations concepts. Consequently, tailored deterrence neglects some of the most important elements of contemporary deterrence theory, including the uncertainty and cognitive biases inherent both to intelligence assessments and to international relations.

While deterrence remains relevant, the U.S. objective to "decisively influence the adversary's decision-making calculus"[2] overstates tailored deterrence's potential and does not adequately acknowledge its shortfalls. The U.S. approach to tailored deterrence is flawed because of its reliance on two erroneous assumptions: that the Nation can reliably assess an adversary's decision calculus, and that it can decisively influence an adversary's choices. The United States must recognize that deterrence is a blunt instrument, not a scalpel, and modify its deterrence strategies accordingly.

Deterrence Definition and Requirements

The persistent popularity of deterrence can largely be attributed to its apparent simplicity. It is not difficult to understand the concept of intimidating or otherwise convincing an adversary not to take an action. DOD defines *deterrence* as "prevention from action by fear of the consequences. Deterrence is a state of mind brought about by the existence of a credible threat of unacceptable counteraction."[3] Theorists further subdivide deterrence into two categories: deterrence by punishment is the threat of retaliation if an adversary takes an action; deterrence by denial is the threat of successfully defeating an adversary's action.[4]

Most theorists and practitioners agree on deterrence's requirements. A deterring actor must communicate to an opponent a credible threat that is of sufficient magnitude to change the results of the opponent's cost-benefit analysis.[5] However, agreement on deterrence's broad definition and requirements has not settled the long-running dispute over its effectiveness or proper role in national security policy. More than a half-century of debate has produced a diverse, compelling, and incomplete collection of theories that cannot reliably predict or explain deterrence success or failure.

Evolution of Deterrence Theory

The advent of the nuclear age elevated the concept of deterrence to prominence in U.S. academic and governmental circles. Deterrence was particularly attractive to many American academics since it was consistent with the Realist school of international relations to which they already subscribed.[6] Although deterrence was an old concept, the incomparably destructive power of nuclear weapons and Cold War bipolarity triggered a theoretical quest for a complete understanding of the art of intimidation.

Robert Jervis adroitly categorized the development of deterrence theory into three waves.[7] The first wave of deterrence theory emerged immediately after World War II as academics struggled to understand the implications of the atomic bomb for war and international relations. Bernard Brodie and others led the wave with their 1946 book, *The Absolute Weapon*, which presciently discussed the possibility of a nuclear arms race and remarked that in "the atomic age the threat of retaliation is probably the strongest single means of determent."[8] The authors grasped the Pyrrhic nature of victory in a nuclear exchange, leading to Brodie's famous observation that the U.S. military must shift its focus from winning wars to averting them.[9]

> *the incomparably destructive power of nuclear weapons and Cold War bipolarity triggered a theoretical quest for a complete understanding of the art of intimidation*

The second wave of deterrence theory followed in the 1950s. Confronted with the nuclear-armed superpower standoff that first-wave theorists predicted, second-wave scholars sought to define how to prevent a disarming Soviet first strike. In 1958, Albert Wohlstetter warned that a small nuclear

Joint terminal attack controllers and tactical air control party Airmen conduct overwatch and close air support training

Joint U.S. European Command and U.S. Africa Command logistics workshop participants discuss Capstone Concept for Joint Operations and Joint Operating Environment

arsenal would be insufficient for deterrence, and counseled that "to deter an attack means being able to strike back in spite of it."[10] Thomas Schelling employed game theory to demonstrate that the probability of conflict between adversaries depends on their perceptions of each other's intentions and their fear of being attacked first.[11] Thus, a secure second-strike capability and clearly communicating a threat to retaliate became the bedrock of second-wave theory.

These theorists also grappled with the concept of extended deterrence. Schelling considered deterrent threats to respond to an attack on the defender's homeland inherently credible, while threats to extend deterrence to allies "must be made credible."[12] Second-wave theorists postulated several ways to make extended deterrence threats convincing, including maintaining a reputation of loyalty to one's allies, stationing forces in defended countries, and convincing the adversary that retaliation would be essentially automatic.[13] Perhaps the most powerful aspect of

second-wave extended deterrence theory was Schelling's "threat that leaves something to chance." This concept holds that ambiguous or implausible threats can still deter aggression between nuclear powers since even a conventional test of extended deterrence risks inadvertent nuclear war.[14]

Second-wave deterrence theory is also known as rational deterrence theory since it relies on specific assumptions about the actors involved. First, rational deterrence theory assumes that the actors are rational and that they will make choices that maximize their expected utility according to microeconomic theory. In other words, actors will always make decisions in order to maximize their gains and minimize their losses. Second, the theory relies on a principle explanatory assumption: the only difference between actors' behavior stems from differing opportunities, not other influences such as culture or norms. Third, consistent with its Realist origins, second-wave theory assumes that states will behave as if they are

unitary actors—the theory does not address leadership personalities or internal politics.[15]

In addition to rational deterrence theory's three formal assumptions, there are several implied requirements. The theory is limited in scope since it only deals with hostile relationships between states.[16] The theory requires that actors incorporate new information into their decisionmaking process, so they realize when a prospective gain has turned into a loss. Actors must also consider the probabilities of various possible outcomes when making a decision.[17] Finally, the theory's principle explanatory assumption implies that all actors have the same risk tolerance.[18]

Second-wave theory proved persuasive, and Washington dutifully implemented many of its prescriptions.[19] The United States developed a large nuclear second-strike capability, strove to establish the credibility of its extended deterrence commitments, and occasionally attempted to make Moscow doubt Washington's restraint.[20] Second-wave deterrence theory provided a cost-effective

U.S. Navy (Emmanuel Rios)

Army Special Forces Soldier leads Iraqi special operations soldiers in movement techniques during foreign internal defense training in Baqubah, Iraq

Sailors conduct patrol boat maneuver training for maritime security and combat operations against small tactical, waterborne, and unconventional warfare units

U.S. Navy

way for the Nation to pursue the ends of its containment strategy.

Robert Jervis identified the third wave of deterrence theory as beginning in the 1970s with the search for evidence to support or refute the second wave.[21] The third wave successfully applied both empirical analysis and psychology to question the assumptions and implications of second-wave theory.

Empirical analysis, most famously Alexander George and Robert Smoke's 1974 *Deterrence in American Foreign Policy,* found that the history of conventional deterrence failures did not support the predictions of second-wave theory. Even when the theoretical conditions for success (that is, commitment, communication, and a credible threat) were met, deterrence often failed in the real world.[22] Third-wave theory contended that the second wave failed to incorporate critical factors, including variations in the aggressors' risk-taking propensity, utility of rewards in addition to threats, and influence of domestic politics on decisionmakers.[23] The

Despite the success of the empirical and psychological approach in casting doubt on rational deterrence theory, third-wave theory did not resolve the deficiencies it identified.[28] No grand unified theory of deterrence emerged in the decades after Jervis identified the trend. Third-wave deterrence theory did not replace rational deterrence theory, but it did create an intellectual counterweight to its influential antecedent.

Deterrence theory continued to evolve in concept and application as theorists and strategists reframed their views to reflect significant world events. The end of the Cold War shifted attention from the Soviet Union to deterring rogue states; the 9/11 attacks stimulated more discussion of deterring non-state actors and their sponsors. Ultimately, the United States sought an approach that would apply to the entire spectrum of challenges.

U.S. Policy and Tailored Deterrence

President George W. Bush's administration introduced the term *tailored deterrence* into U.S. national policy documents in 2006

Such tailoring requires an in-depth understanding of the capabilities, values, intent, and decision making of potential adversaries, whether they are individuals, networks, or states. Deterrence also depends on integrating all aspects of national power."[32]

Defining Tailored Deterrence. Despite the change in administrations, the 2006 DO–JOC remains the definitive open-source description of the U.S. approach to tailored deterrence. U.S. Strategic Command (USSTRATCOM) led the creation of the document, but it reflects a DOD-wide concept that was approved by Secretary of Defense Donald Rumsfeld.[33] Since its publication, USSTRATCOM leaders have repeatedly reemphasized the DO–JOC's principles for "waging deterrence," finding them "perfectly satisfactory" as recently as 2010.[34]

The DO–JOC seeks to describe how DOD will work with the rest of the U.S. Government to "decisively influence the adversary's decision-making calculus in order to prevent hostile actions against U.S. vital interests."[35] The Nation must identify which adversaries it wishes to deter and what actions they are to be deterred from taking, then tailor operations to the characteristics of each adversary and scenario.[36]

The DO–JOC assumes that adversary decisions to act or not are based on deliberate calculations of the value and probability of the outcome of alternate courses of action. It also assumes that the United States can identify and assess at least some elements of each adversary's decision calculus.[37] Beyond these assumptions, the DO–JOC breaks the adversary decision calculus down into three elements: benefits of an action, costs of an action, and consequences of restraint (that is, what could happen if the adversary does not take the contemplated action).

The DO–JOC also assumes that the United States will be able to influence at least some adversary "values and perceptions relevant to their decision-making."[38] It states that the methods the Nation will employ to achieve its ends will be "credibly threatening to deny benefits and/or impose costs while encouraging restraint."[39] The DO–JOC envisions military deterrence operations as part of a larger national deterrence strategy that integrates all elements of national power. These interagency activities are to be conducted on a daily basis during peacetime, crisis, and war.[40]

The DO–JOC purports to offer "a new approach to understanding the ways and

psychological factors often cause decisionmakers to behave in ways that contradict rational deterrence theory's assumptions

third wave also focused more analytical effort on the aggressor's decisionmaking process as opposed to the second wave's nearly exclusive emphasis on the credibility of the defender's threats.[24]

Consequently, third-wave theorists sought to demonstrate that psychological factors often cause decisionmakers to behave in ways that contradict rational deterrence theory's assumptions. Misperception is one of the most important psychological factors—the defender may misunderstand the threat, and the aggressor may fail to appreciate the defender's resolve and/or capability to retaliate.[25] Contrary to the requirements of rational deterrence theory, third-wave theory proposes that decisionmakers are not good at estimating risks and cannot make fine adjustments to cost-benefit analysis based on anything but the most drastic change in probabilities.[26] Similarly, powerful cognitive biases affect both sides of the deterrence relationship. Since people prefer consistency to dissonant information, actors are likely to interpret new information in accordance with preexisting beliefs.[27]

with the release of the administration's second National Security Strategy (NSS) and Quadrennial Defense Review (QDR). These documents represented a major shift in national security policy, as President Bush's 2002 NSS had downplayed the effectiveness of deterrence and advocated preventive war to remove threats from rogue states.[29]

Four years and one such preventive war later, however, the Bush administration resurrected and reinvented deterrence. The 2006 QDR heralded a shift "from 'one size fits all' deterrence to tailored deterrence for rogue powers, terrorist networks and near-peer competitors."[30] The QDR offered few details on how the new brand of deterrence would operate; the 2006 DO–JOC served this purpose.

The Obama administration appears to have continued the Bush-era tailored deterrence policy unaltered. The 2010 NSS and QDR discuss tailored deterrence in much the same terms as their 2006 predecessors.[31] According to the 2010 QDR: "Credibly underwriting U.S. defense commitments will demand tailored approaches to deterrence.

B–2 Spirit stealth bomber performs flyover at air show

means necessary to achieve the ends of deterrence."[41] Despite the document's use of an effects-based operations and transformational lexicon, however, the DO–JOC describes little that is new. When compared to its theoretical roots, tailored deterrence appears to be old wine in a new jar.

What Theory Drives the Practice? The DO–JOC approach to tailored deterrence—"credibly threatening to deny benefits and/or impose costs while encouraging restraint"[42]—is an amalgam of second- and third-wave deterrence theory, heavily influenced by effects-based operations concepts. Denying benefits and imposing costs are simply alternate names for deterrence by denial and deterrence by punishment, respectively. Encouraging restraint incorporates Schelling's and third-wave theorists' ideas of offering the adversary reassurance or rewards for maintaining the status quo.[43]

The DO–JOC relies on many second-wave assumptions but rejects others in favor of third-wave considerations. Consistent with rational deterrence theory, the DO–JOC assumes that choices are based on rational calculations of the expected costs and benefits of an action. Similarly, the DO–JOC accepts second-wave theory's implied assumption that actors will continually incorporate new information into their decision calculus. However, tailored deterrence rejects second-wave theory's principle explanatory and unitary rational

actor assumptions, requiring instead that each adversary be viewed as a complex system of unique decisionmakers. The DO–JOC also uses third-wave theory by allowing for variations in adversaries' risk-taking propensities.

Nevertheless, tailored deterrence largely ignores some of the most important elements of third-wave theory. The DO–JOC pays little attention to psychological factors that undermine deterrence, including cognitive barriers to perception and decisionmaking. The DO–JOC acknowledges and discusses several areas of uncertainty, but presents these ambiguities as solvable problems rather than inescapable fog and friction. The DO–JOC's language indicates that tailored deterrence

denying benefits and imposing costs are simply alternate names for deterrence by denial and deterrence by punishment, respectively

owes more to the deterministic concepts of effects-based operations than it does to the more Clausewitzian cautions of third-wave deterrence theory.

Although effects-based operations concepts were never fully incorporated into joint doctrine, two elements that were absorbed—

effects and systems perspective—had a profound impact on tailored deterrence. First, the DO–JOC states that deterrence planning must include identifying what effects the United States desires to have on an adversary's decision calculus.[44] The doctrinal use of effects leads the DO–JOC to seek measures of effectiveness in order to assess the success or failure of deterrent actions. The document initially acknowledges the near impossibility of measuring the contribution of deterrent actions to adversary restraint. However, the DO–JOC goes on quixotically to discuss how such elusive metrics should be constructed.[45] This approach to assessment clearly emphasizes the deterministic perspective of effects-based operations over the views of both second- and third-wave deterrence theorists, who maintain that deterrence success is difficult to assess in historical retrospect, much less in real time.[46]

Second, and more revealing, is the DO–JOC's statement that "a systems approach to understanding the adversary and the operating environment underpins deterrence operations."[47] The systems perspective in joint doctrine emphasizes understanding an adversary by constructing models of interrelated systems in order to identify effects and centers of gravity.[48] As many critics have pointed out, however, the systems approach is most appropriate for understanding and predicting effects on *closed* systems, such as

electrical powergrids. Open systems, such as societies and national leadership structures, tend to defy both the systems approach to understanding them and deterministic, effects-based attempts to influence them.[49]

Assessing the Adversary Decision Calculus

Tailored deterrence requires that the United States understand each adversary's decision calculus with a high level of certainty in order to design deterrent actions that will achieve decisive influence over adversaries' choices. However, tailored deterrence's assumptions oversimplify the basis on which people make decisions. People make choices based in part on their perceptions of expected utility, but they are also influenced by other factors, including their personal perspectives and cognitive biases. Many of these factors are enigmatic even to the actors themselves, making the decision calculus exceptionally difficult to assess and leaving adversaries' choices largely unpredictable.

History provides many examples of deterrence failures in which the defender misunderstood the adversary's decision calculus and was therefore surprised by an "irrational" action. Keith Payne cites the Japanese attack on Pearl Harbor, China's entry into the Korean War, and the Soviet deployment of nuclear missiles to Cuba as examples in which U.S. estimates of the adversary decision calculus predicted the opposite outcome.[50] Janet Gross Stein uses Egypt's 1973 surprise attack against Israel

and Iraq's 1990 invasion of Kuwait as other case studies of deterrence failures.[51] In all these examples, the defenders assessed that their presumably rational adversary would refrain from action because upsetting the status quo would result in a net loss.

However, the deterrence failures listed above cannot be attributed to irrationality. As Keith Payne observed, there is an often unappreciated difference between rational and reasonable decisionmaking.[52] If actors are rational, they make decisions that logically link to their objectives. However, whether or not an actor's decisions are reasonable is a matter of perspective. If an outside observer does not share or understand the adversary's goals and values, the adversary's decisions may appear unreasonable, and will therefore be unpredictable.[53] Second-wave theory and tailored deterrence both correctly assume that irrational actors are rare, but fail to appreciate how little this assumption matters when compared to the impact of the actors' divergent perspectives on a deterrence relationship.

The Adversary's Perspective. Opposing leaders frequently see the world uniquely because of the large differences in the leaders' individual expectations and beliefs. Cognitive psychology shows that all people develop unique belief systems, or schemata, based on their experiences, to help organize and interpret information. These schemata are necessary to functioning in a complex world, but they also "constrain and condition how and what leaders perceive."[54] As a result of these

U.S. Air Force (Joe Davila)

Minuteman III ICBM launched from Vandenberg Air Force Base intercepted target over 4,000 miles away in Marshall Islands

differing contexts, leaders may interpret the same situation quite differently. For example, while the United States confidently concluded that China would stay out of the Korean War, Mao Zedong attacked the U.S. Eighth Army in North Korea because he probably believed China was being encircled by America.[55]

Leaders' perceptions are also shaped by the mental shortcuts, or heuristics, that all people use to selectively process and recall information. One of the most powerful heuristics results in the *availability bias*—the tendency for people to interpret events in terms of other events they can easily remember.[56] This results in leaders being disproportionately influenced by historical events that they or their country experienced directly.[57] Saddam Hussein's perspective on combat in the Iran-Iraq War led him to disregard U.S. airpower; he similarly concluded from the U.S. experience in Lebanon that America was casualty averse and would not be able to remove him from Kuwait.[58]

Third-wave theory also maintains that domestic political considerations are often a critical factor in adversaries' decisions. This factor is consistent with Jervis's observation that leaders often make a decision based on

U.S. Navy (Eric Tretter)

Ohio-class ballistic missile submarine USS *Maryland* transits Atlantic Intracoastal Waterway

U.S. and South Korean marines practice weapons handling during interoperability training program

one value dimension (for example, domestic politics) without fully considering its impact on other dimensions.[59] Thus, Anwar Sadat's primary concerns in 1973 were domestic politics, regaining lost honor, and the consequences of not attacking, rather than the probable military outcome.[60]

The Deterrer's Perspective. In its estimation of the adversary decision calculus, the United States is constrained by the same cognitive barriers that influence an adversary's viewpoint, as well as other biases that commonly undermine intelligence analysis and policymaking.

Intelligence estimates are prone to the bias of mirror-imaging, which is the assumption that the adversary thinks and operates like the analyst's country.[61] Mirror-imaging is closely related to the availability heuristic, since when reliable intelligence is lacking, analysts and policymakers will tend to fill in the blanks with information that is readily recalled: their nation's capabilities, plans, and intentions. For example, Israel's emphasis on airpower drove it to judge Egypt's readiness in 1973 by an Israeli standard. Due to this mirror-imaging, Israel ignored compelling evidence of an imminent Egyptian attack, believing that Sadat would be deterred at least until Egypt reconstituted its air force.[62]

Analysts also tend to be biased toward viewing the adversary's actions as the result of centralized direction and to underestimate other explanations, such as coincidences, accidents, or mistakes.[63] The centralized direction bias is particularly troublesome for the analysis of an adversary decision calculus since it causes analysts to "overestimate the extent to which other countries are pursuing coherent, rational, goal-maximizing policies" and to "overestimate the predictability of future events in other countries."[64] The power of this bias and the unpredictability of even a well-known adversary were highlighted in 1962, shortly before the United States discovered Soviet nuclear missiles in Cuba. Washington erroneously concluded in a Special National Intelligence Estimate that the Soviet Union would not put offensive weapons in Cuba because such a move would be inconsistent with the observed patterns of Soviet behavior and American estimates of Nikita Khrushchev's decision calculus.[65]

Decisionmakers may also be affected by motivated biases, which result from subconscious psychological pressure that distorts perception. Motivated biases differ from cognitive biases because the source of the error is the person's fear and needs, rather than expectations or cognitive limits.[66]

This tendency results in defensive avoidance techniques to selectively process information that supports their favored policy to reduce anxiety. In May 1967, pressure from domestic and Arab constituencies probably motivated Egypt's overestimation of its chances of winning a war with Israel. Egypt's leaders initially assessed that war would result in low benefits and high costs. However, contrary to rational deterrence theory's requirements, Egypt's leaders reversed their estimate a few weeks later and chose war.[67]

Third-wave theory and case studies demonstrate that misperception and bias are the norm, not the exception, in intelligence and international relations. Given the pervasive nature of such misperceptions, the assumption that the United States can reliably assess an adversary's decision calculus is clearly in error and represents a significant flaw in tailored deterrence.

Influencing Adversary Choices

The U.S. assumption that it can decisively influence an adversary's choices is the second flaw in tailored deterrence. This assumption is erroneous for three reasons. First, misperceptions and biases limit an actor's ability to send effective deterrent messages. Second, adversaries are similarly

constrained in their understanding of such signals. Third, tailored deterrence campaigns are limited by a lack of interagency unity of effort and inescapable friction in execution. These limitations suggest that only the most overt, overwhelming, and credible deterrent threats have utility, while attempts to deter gradually via precise messages are often misguided.

Challenge of Sending Effective Deterrent Messages. In addition to difficulties in understanding an adversary's decision calculus, a deterring actor is constrained by

North Vietnamese behavior via incremental airstrikes and carefully calibrated force deployments. Although these messages were sent from the highest levels of government in Washington, Hanoi did not notice the subtleties, nor did it receive any messages compelling enough to modify its decision calculus.[74]

Adversary Perceptions of Deterrent Messages. Deterrent messages that are clear and credible to the sender and impartial parties may still be missed, misunderstood, or discarded by the receiver.[75] Achieving decisive

deterred since such messages would seek only to reinforce an existing perception.

Since adversaries' beliefs are resistant to change, it follows that adversaries' perceptions of credibility and interests are dominant factors in deterrence outcomes. First, deterrence signals cannot create credibility that does not exist in the mind of the adversary. Unambiguous scenarios where survival interests are at stake, such as the superpowers' defense of their homelands during the Cold War, provide clarity that reduces the chance of misperception.[80] In contrast, America's ambiguous policy toward South Korea in 1950 and Kuwait in 1990 left much more room for adversary error.

Second, carefully crafted deterrence messages cannot balance an inherent asymmetry of interests. The United States and South Korea have apparently deterred a second North Korean invasion since 1953, but have been unable to deter Pyongyang from building nuclear weapons or conducting deadly attacks on South Korean forces. Despite the substantial U.S. commitment to preventing all three scenarios, North Korea clearly possessed a much greater interest in acquiring a nuclear deterrent and in manufacturing crises.

Limitations of the Whole-of-Government Approach. Even when making a clear and credible commitment, tailored deterrence requires a coherent effort that integrates all elements of national power to implement a national deterrence strategy. In 2009, then-commander of USSTRATCOM, General Kevin Chilton, called for an innovative process "to consider and include interagency deterrence courses of action, to make whole-of-government decisions on what courses of action to implement, and to coordinate their execution upon selection."[81] Yet the U.S. Government's structure and bureaucratic friction ensure that the DO–JOC's vision of day-to-day, interagency deterrence campaigns will go largely unrealized. Only the highest priority issues and crises will garner a robust interagency response.

For example, the State Department would play a vital role in any interagency deterrence effort, given its primacy in diplomacy and the DOD objective of influencing adversaries' political decisions. Yet the State Department does not appear to share the military's view of tailored deterrence. State Department officials are more likely to view deterrence as intrinsic to the broad and

to change a person's attitude, new information must overcome many layers of subconscious defenses

biases that accompany attempts to influence others. The egocentric bias leads people to overestimate their influence over others and to see cause-and-effect linkages that do not exist. This tendency can cause policymakers to perceive an adversary's behavior as targeted toward them or to presume that the adversary's behavior was caused by the policymaker's previous actions.[68] The egocentric bias may inflate the policymaker's belief that an adversary can be deterred. Additionally, the bias can result in erroneous assessments that deterrence is working when the adversary's restraint is actually explained by other factors.[69]

Another common limitation on an actor's ability to send deterrence messages is a lack of empathy for how an adversary sees the world.[70] Policymakers have powerful beliefs about their nations, and they spend so much time immersed in their own plans that they have trouble imagining that an adversary may have different views.[71] For example, the United States failed to understand Japan's perspective before Pearl Harbor. While Washington thought that Japan would view the prospect of war with America as disastrous, Japanese leaders concluded they had no other choice but to attack.[72]

A third bias, which is related to the egocentric bias and lack of empathy, is overconfidence: people tend to overestimate their capacity to make complex judgments. Overconfidence leads policymakers to overestimate their ability to influence an adversary via discrete messages.[73] There is probably no better example of such hubris than U.S. attempts to decisively influence

influence over an adversary's choices requires that deterrent signals overcome cognitive biases and persuade the decisionmaker to change core beliefs about the likely results of a contemplated course of action. However, strongly held beliefs, such as a leader's conviction that war is necessary, are the most resistant to change.[76]

To change a person's attitude, new information must overcome many layers of subconscious defenses.[77] A person's first defense is failing to see that new information contradicts existing beliefs. The information can be evaded by ignoring it or interpreting it to fit the person's views, particularly if the data are ambiguous. The second mechanism is to accept that the information is discrepant, but to reject its validity. A third defense is to reject the source of the information as unreliable. Subsequent defenses include acknowledging the contradiction but setting it aside and bolstering the belief by seeking a new justification for an old decision.[78]

The extent to which subconscious factors encourage people to cling to their beliefs makes it extremely difficult to deter an adversary gradually with discrete messages. A sufficiently motivated or confused adversary can ignore deterrent signals such as diplomatic messages or the deployment of military forces, especially if such signals are sent incrementally. Adversaries can accommodate isolated messages without changing their beliefs, but are more likely to reevaluate their convictions if a large amount of contradictory information arrives all at once.[79] By this same logic, subtle signals should have more use against an adversary who is already

continuous process of diplomatic engagement rather than as an isolated campaign. The Quadrennial Diplomacy and Development Review (QDDR) does not discuss tailored deterrence, and the State Department's other public statements on deterrence focus on narrower issues such as nuclear proliferation and arms control.[82] Despite working closely together for shared objectives worldwide, the relationship between the State Department and DOD is typical of the entire interagency system: each department fiercely defends its own perspectives and priorities.

As a result, true interagency unity of effort is the exception, not the rule. The State Department's QDDR quoted Secretary of Defense Robert Gates's description of the interagency process as "a hodgepodge of jury-rigged arrangements constrained by a dated and complex patchwork of authorities, persistent shortfalls in resources, and unwieldy processes."[83] These limitations are both structural and intentional, as the executive branch

unauthorized actions and accidents can be more persuasive than polished strategic communications

departments, National Security Council, and interagency system were organized first and foremost to advise the President's decisions. The system is intrinsically slow and deliberative unless a crisis elevates an issue to the Principals Committee or National Security Council for a decision.[84] Even the imperatives of a decade of war have not transformed the interagency into the chimerical whole-of-government, as reform efforts have consistently failed to launch.[85] Consequently, the United States will wage deterrence with the interagency it *has*—not the interagency it *might want*.

After reaching an interagency compromise on a deterrence course of action, the United States will also encounter friction in execution. Orders to perform specific deterrence actions may be misunderstood by subordinates or executed differently than expected, garbling the intended deterrence signals.[86] As demonstrated by the Abu Ghraib scandal and the Air Force's improper transport of nuclear weapons, unauthorized actions and accidents can be more persuasive than polished strategic communications. As in all types of conflict, fog, friction, and chance are irreducible factors that will

heavily influence the outcome of a tailored deterrence campaign.

Conclusion

Tailored deterrence is flawed because of its erroneous assumptions that the United States can reliably assess an adversary's decision calculus and decisively influence adversary choices. Nevertheless, deterrence remains an indispensable tool of U.S. national security policy since not all potential threats can or should be preempted. The United States should modify tailored deterrence to reflect third-wave theory in order to provide policymakers with realistic deterrence options instead of panaceas. These modifications should include accepting ambiguity, recognizing the importance of an adversary's interests, and replacing hubris with humility.

Third-wave deterrence theory and innumerable case studies demonstrate that an adversary's decision calculus will remain largely opaque regardless of the extent of the intelligence collection effort. Ubiquitous cognitive biases frequently frustrate accurate assessments and also shape adversary perceptions of their environment in idiosyncratic and often unknowable ways. Tailored deterrence should accept this irreducible uncertainty as a limitation rather than assuming that ambiguity can be removed from the equation. This intrinsic ambiguity could be tamed to a certain extent through such methods as red teaming, psychological profiling of adversary leaders, developing multiple decision calculus models, and analyzing many potential courses of adversary action. Yet the Nation should not be overly surprised when an adversary fails to follow the script.

Tailored deterrence's deterministic and effects-based foundation implies that deterrence applies in nearly all situations. However, the U.S. approach should accept that large asymmetries of interests are common in international relations and that such disparities can render deterrence irrelevant. Schelling's "threat that leaves something to chance"—the fear of nuclear escalation that overshadowed Cold War confrontations—is not credible when an adversary's actions are on the low end of the conflict spectrum and U.S. survival interests are not at stake. American attempts

to sway adversaries from pursuing their interests are only credible when the United States has a commensurate interest in the status quo and when the situation is unambiguous.

Deterrent strategies have the most utility when an adversary's pondered action is an unambiguous and attributable affront to vital U.S. interests rather than an action on the margins. In such unambiguous scenarios, threats to deny benefits and impose costs should be simple, overt, and overwhelming. Deterrence by subtlety is vulnerable to misperception and betrays an egocentric bias and overconfidence that the adversary is both able and willing to decode and respond to the faintest U.S. signals.

Finally, tailored deterrence and its practitioners require humility rather than hubris. A more realistic approach would acknowledge that adversaries cannot be imagined as inert, closed systems vulnerable to decisive influence. Instead, deterrence campaigns will be based on a vague understanding of an adversary's decisionmaking process and motives. Given these uncertainties, deterrent actions will be blunt instruments that are subject to friction and misperception, and their true influence on an adversary's choices will normally remain unknown. Such a recalibrated approach reflects the reality that the United States can influence world events, but cannot dictate them. **JFQ**

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Meeting of Cyber Defence Experts, January 2011

Estonia: Cyber Window into the Future of NATO

By **HÄLY LAASME**

For the development of the new North Atlantic Treaty Organization (NATO) Strategic Concept, a group of experts chaired by Madeleine Albright recommended that:

NATO must accelerate efforts to respond to the danger of cyber attacks by protecting its own communications and command systems, helping Allies to improve their ability to prevent and recover from attacks, and developing an array of cyber defence capabilities aimed at effective detection and deterrence.[1]

The Alliance has always adamantly protected its communications and information systems against harmful attacks and unauthorized access. Hence, until April 2007, the Atlantic Alliance had mainly concentrated on securing its own operational systems without realizing that it also should have been assisting its members in protecting theirs. As a result of the assaults on Estonian electronic infrastructure in April and May 2007, NATO changed its common security trajectory by extending the development of cyber defense capabilities also to its individual Allies.[2]

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How did such a small nation end up as the driving force of the cyber defense policy of NATO? This article examines Estonia's role in the development of the NATO cyber defense policy, the adequacy of the current cyberspace concepts for defending NATO, and the Alliance's embracing of this new challenge with the help of the cyber center in Estonia.

Attack on e-Estonia

Estonia, a small country with a population of only about 1.3 million, is considered the most wired realm on the planet. Almost everything in this tiny nation, which gave birth to Skype, is done over computer networks and by use of mobile devices. Estonia ranks second in the world after the United Arab Emirates in mobile phone subscriptions, with each person in Estonia owning at least one device on average—188.2 devices per 100 people.[3] Almost every activity in Estonia is done over the Internet: its society is inundated with e-government, e-voting, e-parking, e-banking, e-identification systems, e-taxes, and live-streaming public television, to name a few.[4] Almost the entire country is covered by a free Wi-Fi network because Internet access is considered by Estonians as a basic human right. Estonia's pervasive Internet-driven culture is the realization of the dream of one man, Veljo Haamer, who wanted to make the Internet to Estonia what electricity is to the rest of the world.[5] As impressive as this extraordinary achievement is, it will soon be eclipsed by the European Union–supported €384 million project "EstWin," which aims to provide 100 megabits per second broadband service for every Estonian by 2015.[6] In summary, Estonia as an e-experiment is a window into the future for the rest of the NATO members and the world.

Unfortunately, this ubiquitous Internet dependence has brought not only technological freedom but also various defense and security risks. The national security of Estonia was threatened in April 2007 when a near-catastrophic botnet struck almost the entire electronic infrastructure of Estonia. Never before had an entire country been a digital target and the government forced to defend its population and commerce in cyber war. All that Estonian information technology (IT) managers could do was block the international connections to the servers, which was akin to a modern blockade of a country without the concomitant deployment of any conventional weapons.

Coincidentally, during the same time, three world-renowned IT experts were visiting Estonia, and they assisted the Estonian Computer Emergency Response Team with defenses against ping attacks, botnets, and hackers.[7] The experts were Kurtis Lindqvist, CEO of Netnod Internet Exchange, which operates one of the 13 Domain Name System's root servers in the world,[8] Patrik Fältström, senior consulting engineer with Cisco and cyber security advisor to the Swedish government,[9] and Bill Woodcock, research director of Packet Clearing House and member of the board of directors of the American Registry of Internet Numbers.[10] They happened to be at the right place at the right time to utilize their years of collective

computer expertise and contacts among Internet service providers by sending out bursts of emails to the network operators around the world to block the Internet Protocol (IP) addresses that were sending harmful traffic to Estonia's international connections.[11]

Ultimately, the country's electronic infrastructure was hit by almost one million computers simultaneously, most of them hijacked from the United States by unknown elements inside Russia.[12] The Russian government has denied any involvement with the attacks and has exhibited no interest in

searching for the cyberterrorists who the evidence suggests were based in its country. What might be more troubling than the assault itself is that a group of Russian hackers has taken responsibility for it, implying that there exists a kind of private militia or stateless power[13] in Russia that can take down the commerce and government of any country in the world. Even though the Estonian case was not the first major cyber attack in the history of the Internet, it was the most publicized because it crippled an entire nation that is enormously dependent on network communications and offered empirical proof of hacking having evolved beyond the instrument of espionage.

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almost the entire country is covered by a free Wi-Fi network because Internet access is considered by Estonians as a basic human right

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Role of NATO

According to Article 5 of the NATO charter, an armed attack against any Ally is considered an attack against all. In such cases, Allies are called upon to assist each other with necessary measures, including the use of armed forces, to restore and maintain security.[14] Estonia has been a member of NATO since 2004, but in the case of the 2007 cyber attacks it could not invoke Article 5 because there was no agreed-upon enemy to retaliate against, and among Allies there existed ambiguity over what exactly constituted a weapon

NATO and Estonian representatives sign memorandum of understanding on cyber defense cooperation

under the Alliance's charter. This was a war in an absolutely different dimension; it was a virtual war that encompassed computers from all over the world.

Hitherto, NATO had not considered attacks by cyberterrorists as armed attacks. Accordingly, a collective self-defense was inapplicable, even though years earlier the Allies tested the charter with an "unfamiliar arsenal of weapons" by declaring the September 11 terrorist attacks with commercial airliners to be armed attacks and invoked Article 5.[15] But this might all change in the

> *one could not have used conventional counterinsurgency strategies or tit for tat because there was no tangible theater of operations; the battlefield was cyberspace*

near future because NATO's new Strategic Concept includes cyber attacks as a significant threat to Euro-Atlantic security[16] that might warrant consultations under Article 4[17] and even lead to collective defense measures under Article 5 if necessary.[18] Furthermore, even if retaliation would have been justifiable, in this situation one could not have used conventional counterinsurgency strategies or tit for tat because there was no tangible theater

of operations; the battlefield was cyberspace, and the identification of the enemy was quite ambiguous, not simply a defined number of computers from a certain country. In addition, this event raised another imperative ethical dilemma: if one cannot definitely prove the government of a particular country is the attacker, then should that government still be equally responsible for the hackers who attack another country? As anyone can infer, the area of "cyber defense and security" is still profoundly uncharted territory and its doctrine far from empirical realization. Neither in 2007 nor today are there any internationally accepted definitions on the subject of cyber defense and security. What one nation considers a "cyber attack" might appear more like a "cyber war" to another or even a simple "cyber crime" to a third.[19]
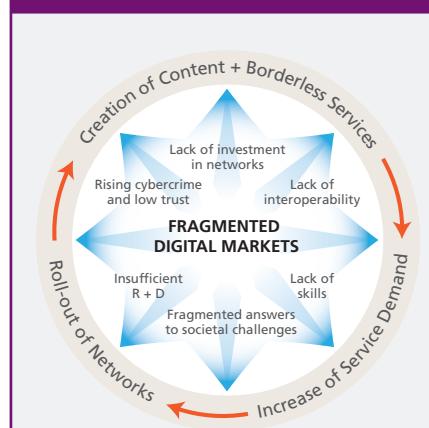
Since 2001, the Council of Europe's Convention on Cybercrime has addressed the procedural laws in the signatory countries for investigating cyber crime while promoting cooperation in law enforcement, but it does not go beyond the basic necessities for solving identity theft or protecting intellectual property.[20] In October 2005, the United Nations Institute for Training and Research published Ahmad Kamal's *The Law of Cyber-Space*. The book describes in more detail different forms of cyber risks and notes that cyber war can occur between governments and nonstate actors, but nevertheless be financed by states.[21] This might have happened in the case of Estonia had there

Assistant Secretary-General for Emerging Security Challenges delivers opening statement at meeting of Cyber Defence Experts

Why a Digital Agenda for Europe?

Europe needs a new action plan for making the best use of information and communication technologies (ICT) to speed up economic recovery and lay the foundations of a sustainable digital future. The new action plan proposes to remove current obstacles to maximizing the potential of ICTs, with long-term investments to minimize future problems.

The Digital Agenda identifies where Europe needs to focus its efforts to put this virtuous cycle in motion. What is the focus of the Digital Agenda?

The Agenda outlines seven priority areas for action:

- creating a Digital Single Market

- improving the framework conditions for interoperability between ICT products and services

- boosting Internet trust and security

- guaranteeing the provision of much faster Internet access

- encouraging investment in research and development

- enhancing digital literacy, skills, and inclusion

- applying ICT to address social challenges such as climate change, rising health care costs, and aging populations.

been solid proof of the Russian government financing the hackers. The book also defines *cyber war* as "the deliberate use of information warfare by a state, using weapons such as electro-magnetic pulse waves, viruses, worms, Trojan horses, etc., which target the electronic devices and networks of any enemy state," and *cyberterrorism* as "attacks and threats of attack against computers, networks, and the information stored therein, with the objective of intimidating or coercing a government or its people in furtherance of political or social objectives."[22] De facto, there is only one distinction between these definitions: the classification of the conspirator as state or nonstate. Hence, cyberterrorism can evolve into cyber war if the state finances the terrorists. But even if the quarreling parties have been identified, there still exists a jurisprudence dilemma because unlike the international trade disputes that can be filed with the World Trade Organization, there is no such globally recognized entity or appellate body for cyber conflicts. Every country is on its own on translating how the domestic and international laws cover the different actions in the cyber world and how to penalize the mischievous cyber-citizens. This problem has become highly relevant again because of the recent Internet publication by WikiLeaks of U.S. diplomatic cables. This action has in the short term more or less flabbergasted the U.S. Department of Justice over how exactly to discipline such deeds.

To progress with advancing technologies, in 2002 the Alliance included development of cyber defense capabilities in its agenda and established the NATO Computer Incident Response Capability (NCIRC) as part of the newly implemented Cyber Defence Programme.[23] In 2008, after 6 years of labor in bringing the NCIRC up to full operational capability, the Alliance's member states ratified the NATO Cyber Defence Policy and created the Cyber Defence Management Authority in Brussels, all prompted by what had happened almost a year earlier to Estonia. NATO finally realized that some form of common strategy had to be developed for defending the electronic infrastructures of its member states. Nevertheless, it still took 2 more years for the Alliance to make a contribution to the development of a global cyber-lexicon. On January 22, 2010, NATO finally defined in its glossary the term *computer network attack* as "Action taken to disrupt, deny, degrade or destroy information resident

Estonian president meets with Secretary-General at NATO Headquarters

in a computer and/or computer network, or the computer and/or computer network itself" and noted that "a computer network attack is a type of cyber attack."[24] However, the definition still lacks a ranking of offenses for identifying the severity of an attack: whether it should be considered as just a sophisticated and malicious hacking or as an act of war that requires retaliation by allies, and then what kind of counterinsurgency strategies would be adequate. Unfortunately, NATO's new Strategic Concept has not contributed much toward clarifying these ambiguities for the Allies. Even though it might not be NATO's mission to classify and define everything in cyberspace, it is the Alliance's role to prevent crises, manage conflicts, and defend one another against attacks, including against new threats—none of which can be conducted with vague directions and abstruse concepts. In the global context, this means that the role of NATO in defining cyberspace concepts and linking them to the applicable and tangible counterinsurgency strategies should be considered as pertinent as was the redefining of the post–Cold War security environment.

The Cooperative Cyber Defense Centre of Excellence

The cyber incident with Estonia was a wake-up call for the Alliance. After an all-inclusive evaluation of its cyber defense capabilities, in May 2008 Estonia, Italy, Spain, Slovakia, Germany, Lithuania, Latvia, and the Allied Command Transformation signed

a memorandum of understanding for the establishment of a Cooperative Cyber Defence Centre of Excellence (CCDCOE) in the Estonian capital, Tallinn.[25] This was the 10th Center of Excellence accredited by NATO, and its aim has been to enhance the Allies' capabilities and interoperability in cyber defense by emphasizing doctrine and concept development, awareness and training, research and development, analysis and lessons learned, and consultations.[26] Given that the CCDCOE does not belong to the NATO command structure, its capital and administrative costs are covered by the host country, Estonia, while the rest of the expenses and operating costs are shared by all the sponsoring states.[27] In June 2010, Hungary joined the Centre as a sponsoring state, and the United States and Turkey have both shown great interest in joining in the future.[28] Considering the increased involvement of U.S. experts in the activities of the CCDCOE, membership might not be too far off.

Since its establishment, the CCDCOE has worked vigorously to educate its members on cyber security issues and has already organized several cyber defense conferences. In June 2009, it sponsored the first international Conference on Cyber Warfare, where speakers from 13 countries delivered 29 cyber warfare presentations. During the 3-day event, besides various other subjects, participants received analysis on China's intelligence collection network, GhostNet, which had infiltrated high-level computers in more than 100 countries, including an unclassified

computer at NATO headquarters;[29] on measuring techniques of distributed denial-of-service attacks; on the concept of borders in cyberspace; and on botnet countermeasures.[30] The conference was the first clear indication of the intent of NATO and its Allies not to dawdle, but to consider every aggression in cyberspace seriously. Similar to the Russian hackers who assaulted Estonian electronic infrastructure, the Chinese government has denied any involvement with Chinese hackers who operate GhostNet. Yet this is another example of groups of sophisticated programmers who are capable of hacking into computer systems around the world becoming a more prevalent and serious security issue. NATO members have started to realize that in managing cyberspace, any kind of vulnerability can lead to dangerous consequences in defense, even when the hackers' aim might be only economic espionage to acquire cutting-edge technology or scientific know-how.

Various security problems can be solved and offensive strategies created by hiring capable and seasoned programmers. In 2007, Estonia was extremely lucky in finding three highly experienced IT talents in country who were ready to apply their efforts on Estonia's behalf, but in reality many companies and countries do not have such experts sitting around to protect their servers. Therefore, security issues have to be tackled long before they become dangerous, and explicit procedures for dealing with consequences must be defined. In brief, we need an internationally accepted body of principles and rules to govern cyber affairs and conflicts—cyberspace's very own ex ante and ex post regulations. Global policies and laws are lagging decades behind the fast-advancing technologies. As the director of the CCDCOE, Colonel Ilmar Tamm, has noted, "Even if some means to secure the cyber domain are technologically feasible, we are limited by laws and policies."[31]

Consequently, the CCDCOE progressed even more swiftly in educating the Allies by hosting a second cyber security symposium, Cyber Conflict Legal and Policy Conference, in September 2009. The event, which was organized jointly with the George Mason University Center for Infrastructure Protection, explored rules and regulations in cyber conflict management.[32] This debate is not just vital but also highly sensitive because people who use the Internet generally believe that it will be incredibly challenging to manage

and balance any policies and laws in the open environment of cyberspace without infringing on its current innate premise—client/user equality—that essentially makes the World Wide Web so powerful for its users.

For NATO, it does not matter if the theater of operations is cyberspace or conventional terrain; the success of operations still depends on the asymmetry of information. Meanwhile, preservation of international security in the nonvirtual world sometimes necessitates offensive strategies for avoiding extensive collateral damage in the long run; on the other hand, achieving security in the cyber world often entails more defense strategies because presently tracking down the dynamic IP addresses and retaliating appropriately are more complicated processes than well-prepared cyber deterrence. To

even if some means to secure the cyber domain are technologically feasible, we are limited by laws and policies

advance members' cyber defense capabilities, in May 2010, the CCDCOE, together with the NCIRC, organized the 13th NATO Cyber Defence Workshop and in October 2010, it co-hosted with Allied Command Transformation a workshop called NATO in the Cyber Commons, which was strictly aimed at identifying the Alliance's vulnerabilities and developing relevant capabilities.[33]

Dual-use Technology

The CCDCOE emphasizes the need for collaboration in research between various military and civilian entities. On November 3, 2009, the Centre signed a 3-year research cooperation agreement with one of Northern Europe's leading financial groups, SEB (Skandinaviska Enskilda Banken), to explore the best practices of information-securing in the private sector,[34] and on January 11, 2010, Symantec Corporation announced its participation in the collaborative study that is expected to address the threats that undermine online systems.[35] Although Symantec's engagement in international security issues should be highly welcomed, de facto, the sophistication of the hacking community has evolved beyond this NASDAQ–100 company's capability. According to its consumers, Symantec's capability seems to be struggling

with engineering constructive solutions for its customers whose computers have been infected with malware containing a backdoor component while being protected by Symantec security products.[36]

Information technologies are developing beyond the pace of our collective ability to provide secure defense. While computers and thousands of software applications for mobile devices make our daily lives more efficient, they also lead to more complex cyber defense issues.

Almost everything in our electronic infrastructure is a dual-use technology that has applications for military operations as well as for civilian tasks like operating systems, security software, and networking protocols. Many commercial applications and interfaces were originally developed under defense research, including the Internet. It is cost-effective and profitable to develop dual-use technologies because demand in the military market is much smaller than in the commercial market.

In cyberspace, the most imperative dual-use technologies are products based on cryptography. It has become increasingly obvious that the protection of critical infrastructures necessitates strong encryption capabilities.[37] The encryption and decryption algorithms allow secure messages to be sent between defense and security entities as well as between civilians by common interfaces like Blackberries. Therefore, developments in these kinds of dual-use technologies require high vigilance from defense and commercial consumers and inclusive collaboration among all pertinent parties.

Estonia became the driving force of NATO's cyber security policy because its citizens dependence on technology in their everyday lives was greater than the other Allies. With the 2007 cyber war, Estonia experienced firsthand how unprepared NATO was to defend its members in this new reality. Thus, calling for a NATO common cyber security policy was the only option for defending the country against future cyber attacks because, in foreign policy, intentions to do something can often work as deterrents. Since there have been no major cyber attacks on the country during the last 3 years, it does seem like this strategy has worked. Now that NATO's Strategic Concept has been developed, it is vital to comprehend the array of new challenges that cyberspace imposes on the Alliance. Estonia

can be an excellent case study for NATO, which needs to continue to learn from the Estonian example and incorporate cyber-security in its charter and mutual defense doctrines. Cooperation in advancing cyber defense capabilities is becoming more relevant and critical because it is almost impossible to defend any country's electronic infrastructure solely with its own resources, as the cyber attacks on Estonia demonstrated. The few international policies that regulate cyberspace only concentrate on commercial and civilian matters to protect minors from indecent exposure, citizens from identity theft, and corporations from loss of profits.

Meanwhile, cyber defense issues have not been effectively discussed and the actions for solving possible consequences not defined. Utilizing the Cyber Defence Centre in Estonia is a highly efficient way for NATO to begin confronting the defense challenges posed by the cyber world, but it will not be effective for the Alliance when faced with the profound combination of challenges that the prevailing trend of increased dilemmas seems to suggest the cyber future will bring. Until now, NATO members and the developed countries have dealt with isolated cyber attacks. But what if these assaults evolve into something much more serious, like purposely shutting down nuclear and hydropower plants, taking down satellites, or stealing and publishing something considerably more sensitive and classified than WikiLeaks has done? **JFQ**

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STUXNET AND STRATEGY
A Special Operation in Cyberspace?

By LUKAS MILEVSKI

Cyberpower has posed a challenge for strategists since its advent, and the questions have only grown more pressing with the revelation of the Stuxnet malware attacks on Iranian nuclear sites. Many interpretations currently abound in an attempt to provide a framework within which to think about Stuxnet and about cyberpower more generally. Stuxnet has been described as the digital equivalent of "fire and forget" missiles, and it has caused concerns that cyber war may achieve the same catastrophic results in the highly networked 21st century that superpower nuclear war would have had in the 20th.[1] Neither comparison is particularly apt. Instead, the most constructive way of thinking about Stuxnet is to conceive of it as a special operation in cyberspace. The strengths and weaknesses of Stuxnet correspond to the strengths and

Satellite image of Natanz nuclear facility in Isfahan Province, Iran

weaknesses of special operations. Although Stuxnet may be judged a tactical success but a strategic failure, it serves a pioneering purpose and holds the door open for the serious consideration of cyber attack as an instrument of strategy and policy.

Cyberpower and Stuxnet

Cyberpower has been steadily growing in prominence over the past decade, but for the most part it seemed to offer only a limited toolset to strategists. Danny Steed in a recent article suggests that it can be used as a tool or otherwise elicit effects in five different ways. First, it can be a potent tool of intelligence, affecting the scope of and speed with which information can be gathered. Second, it greatly optimizes the use of one's own hard power—the foundation of Western military prowess. Conversely, the third use of cyberpower can disrupt the network that underpins the enemy's hard power. Fourth is a greatly expanded conception of the third use: direct cyber attack on national infrastructure, as seen in Estonia in 2007 and Georgia a year later. Finally, it may have significant impact on morale, particularly on the home front, as casualties and accidents are typically made known, either by the media or the government, with a celerity that far outstrips the achievement of tactical success, let alone strategic success. However, there are two important military applications that the Steed analysis claims that cyberpower *cannot* do. First, it cannot directly cause corporeal harm, either to human beings or to their physical creations. Second, it cannot occupy actual terrain. Ultimately, the analysis concludes that "cyberpower will never coerce in the way that sheer physical force can do."[2]

This pertains to conventional cyberpower. These are the tactical limits within which the vast majority of cyberpower will fall. Strictly speaking, Stuxnet also belongs within these limits, despite purportedly resulting in the destruction of 1,000 Iranian centrifuges at the Natanz enrichment plant. This destruction was a second-order effect of the malware; it created the context within which the destruction occurred but did not directly inflict it. The first-order effect remained at the eternal limit of cyber assault:

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digital infection. However, Stuxnet is exceptional despite staying within the limits of what is tactically possible for cyberpower because through manipulation within those limits, it was able to reach beyond them. It broke previous patterns of political uses of cyberpower by spreading indiscriminately, while only activating on very particular machines. It exploited four vulnerabilities, including two zero-day vulnerabilities, in Microsoft operating systems to gain access to Siemens programmable logic controllers and control of the operation of centrifuge-operating computers, at which point it displayed decoy signals to indicate normal operation even as it followed instructions that broke those centrifuges.[3] It was the first time that such a comprehensive package—one common in the criminal cyber underworld, capable of spreading by itself,

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Stuxnet broke previous patterns of political uses of cyberpower

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hiding itself, and attacking by itself—was employed against a specific target to achieve, or at least facilitate, a particular strategic or political effect.

Its physical effect was significant: 1,000 centrifuges were destroyed, out of a total of 9,000 at Natanz, but Iran has been estimated to have only stockpiled the material to build 12,000 to 15,000 centrifuges. Nine thousand are deployed at Natanz, and 2,000 are broken either through routine operation or by Stuxnet—and with no easy chance for Iran to avoid international economic sanctions.[4] Institute of Science and International Security experts on the Iranian nuclear program argue that Stuxnet must have had significant implications for Iranian morale as well due to the uncertainty surrounding the attack. Before the discovery of the malware itself, the sudden damage to so many centrifuges must have thrown serious doubt upon the reliability of the quality assurance program necessary to run such a facility and diverted Iranian attention and effort into emergency mitigation. Even Stuxnet's discovery could only have fed Iran's sense of vulnerability, particularly given the immensely detailed specifications Stuxnet would have required to achieve the results it did: information "far beyond what the [International Atomic Energy Agency] knew." This fear could easily impact Iranian decisions

concerning secret nuclear facilities, particularly in the additional context of Western discovery of the Qom facility in 2009. Its view of the quality of goods it obtains through smuggling might also have been damaged, and it may assume the task of producing more of the requisite materials and machines domestically despite limited industrial capabilities at the necessary level. Finally, given how widely Stuxnet has proliferated, particularly in Iran, those working in the nuclear program will have to take extra care to prevent reinfection.[5]

Stuxnet as a Special Operation

Special operations expert James Kiras has explored the relationship between special operations and strategy, arguing that "the root of strategically effective special operations is an appreciation for how special operations forces perform in extended campaigns by inflicting moral and material attrition in conjunction with conventional forces." He goes on to define *special operations* as "unconventional actions against enemy vulnerabilities in a sustained campaign, undertaken by specially designated units, to enable conventional operations and/or resolve economically politico-military problems at the operational or strategic level that are difficult or impossible to accomplish with conventional forces alone." As one of his concluding thoughts, he suggests ultimately that "at the strategic level, however, special operations are less about an epic Homeric raid than they are about the combined effects of disparate unorthodox activities in the ebb and flow of a campaign or series of campaigns."[6] That is, if used properly, they are ultimately the best option available to policymakers in those particular situations where more conventional force is unwise. Does Stuxnet meet the requirements of what makes a special operation, albeit in digital form?

Kiras focuses on special operations within the context of a wider war; his examples draw almost entirely from World War II for the good reason that it offers such a wide selection of special operations. Arguably, however, one of the great advantages of special operations is that they are suitable not just to war but also to the murky zone between war and peace. Cyberpower by its very character also occupies this niche area, and anonymity online is one of the Internet's defining features. Additionally, the very construction of Stuxnet was designed to preclude attribution. It has been suggested that "Stuxnet's

core capabilities and tradecraft, including the use of multiple zero-day exploits, render it more of a Frankenstein patchwork of existing tradecraft, code, and best practices drawn from the global cyber-crime community than the likely product of a dedicated, autonomous, advanced research programme or 'skunk works.'"[7] Whether due to deliberate design or simply the casual practices of veteran cyber criminals, deniability of responsibility for the attack is a byproduct of Stuxnet's design.
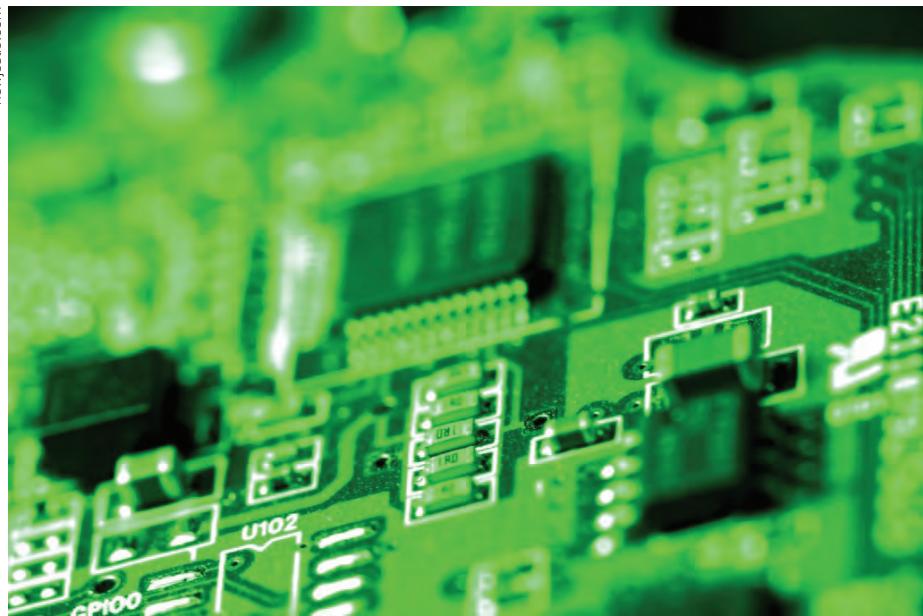
The essential requirement of special operations, however, is that they augment other, more conventional efforts. Special operations acting entirely on their own rarely achieve a significant level of effect if their target can devote all his resources to countering and mitigating the results of any given special operation. However, working alongside conventional military operations is not the only context in which special operations could have considerable effect; conditions suitable for special operations can be manufactured. Writing about the Arab Revolt of World War I, T.E. Lawrence suggested that "the death of a Turkish bridge or train, machine or gun or charge of high explosive, was more profitable to us than the death of a Turk."[8] What the Turks in Arabia lacked was hardware, not manpower. Special operations can be usefully employed to attrite resources that the other side is short of or reliant upon, whether hardware or manpower. A state of affairs in which materiel is worth more than manpower due to its relative scarcity may sometimes exist

of its own accord, or be a product of political neglect, innate lack of resources or industrial capacity, or still other internal factors. It may also be imposed by an outside party, both in war and in peace, through a variety of actions, including the attritional effects of successive military engagements and operations in war. The United States has a method of achieving such material shortage in selected states during times of peace, particularly if it can act in a multilateral context, which multiplies its effectiveness if properly implemented by all involved parties—sanctions.
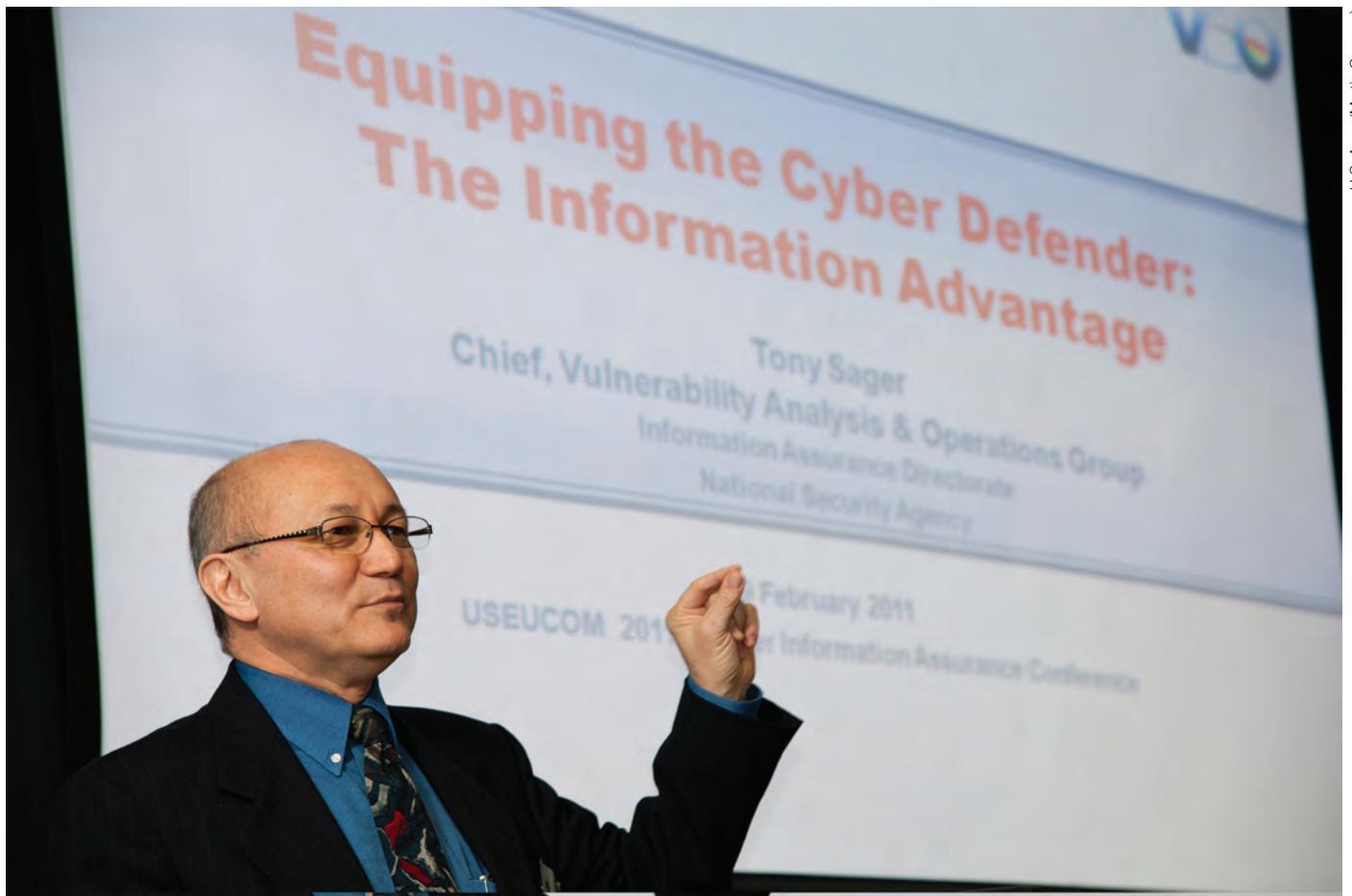
In June 2010, the United Nations Security Council passed Resolution 1929 to adopt a fourth round of sanctions against Iran and the toughest multilateral sanctions yet designed to inhibit the development of the Iranian nuclear program. Beyond this, the United States and the European Union have also imposed further unilateral sanctions. Despite the nay-saying of the Russians, the sanctions are slowly having an effect, both on the Iranian nuclear program and Iranian society at large, although neither is at the breaking point. Resolution 1929 represents the culmination of a long-term sanctioning campaign against Iran, a campaign that has steadily decreased Iran's options for the procurement of necessary materials for its nuclear program and that has also, to varying extents, cut into Iran's ability to function economically, both internally and externally, with other states. For example, IranAir is losing gasoline contracts and finding itself unable to refuel in certain

countries, and ships belonging to the Islamic Republic of Iran Shipping Lines are unwelcome in many ports. It is difficult for Iran to acquire either more uranium or more materials required for its current generation of centrifuges. The major hub of Iranian smuggling is currently Asia, but many of Asia's major ports belong to American allies, adding to Iranian difficulties. As already noted, the Iranians are estimated to have the materials for only about 12,000–15,000 of their IR–1 centrifuges. Eleven thousand have been deployed, of which 2,000 have been broken through routine use or by Stuxnet. Iran's cushion against accident or hostile action is becoming increasingly thin as a result of its inability to procure materials for more IR–1 centrifuges. It is currently developing next-generation centrifuges, the IR–2 and IR–4, the latter of which requires additional material, but these have yet to be deployed beyond limited testing. These new generations are expected to increase enrichment efficiency significantly, allowing for fewer centrifuges to achieve the same enrichment rates as the many thousands Iran currently has deployed. For any actor concerned with delaying the Iranian nuclear program and feeling that sanctions were not taking effect quickly enough, the time to strike covertly had to be before the new centrifuges were introduced en masse.

Conventional means are clearly inadequate against the Iranian nuclear program. The dispersal of existing plants, their locations within mountains and other difficult terrain, and secrecy surrounding planned facilities all prevent an easy military response such as the Israeli attacks on Osirak and the alleged Syrian reactor in 2007. Sanctions have not yet had sufficient effect to dissuade the Iranians, and quite plausibly will not, as long as the Iranian political calculus remains steadfast and finds sufficient attraction to and utility in its chosen course. The Iranians view diplomacy as a method of keeping the international community at bay rather than a way to resolve the situation in an agreeably Western manner. A special operations strike of some sort was clearly necessary if one's goal was the delay of the nuclear program, but the very character of that program also precludes easy destruction by a limited number of operatives. A cyberstrike must have been much more compelling as an option. Stuxnet's abilities to self-replicate, quickly proliferate across systems, and disguise its presence until activated all indicate that it was specifically

Computer circuit board

National Security Agency official discusses cyber ecosystem at U.S. European Command's Cyber Defense/Information Assurance Conference, Stuttgart, Germany

designed to counter the security measures put in place to prevent a conventional or unconventional attack on the Iranian nuclear program. All three characteristics were necessary to approach and infect the relevant computers and damage a portion of the centrifuges at Natanz. There could have been no

cyber war is ultimately about confidence, particularly confidence in the systems being attacked

other sure way for Stuxnet to have jumped the air gap between the wider Internet and computers at Iranian nuclear facilities without self-replicating and proliferating wildly across computers and onto USB sticks and other portable data transfer devices, and hiding its presence until it reached precisely the computers it had been coded to infect and control.

Martin Libicki, an expert on cyberpower, argues that cyber war is ultimately about confidence, particularly confidence

in the systems being attacked. He suggests that any cyber attack must of necessity have two fundamental bases: "(1) the exposure of target systems to the rest of the world, coupled with (2) flaws in such systems which are then exploited."[9] By jumping the air gap, Stuxnet surprised the Iranians and weakened their

confidence in their ability to preclude cyber attack altogether through disconnection. Even severing a direct connection to the wider Internet does not remove exposure. The further infection of computers in Natanz after the penetration of the air gap only increased the Iranians' realization of their own insecurity despite the measures they had taken. Although the Iranians have now most likely removed all traces of Stuxnet from their systems and may have addressed the software

and operating system vulnerabilities that the previous iterations of the malware attacked, they are also assuredly now particularly sensitive to a potential similar attack that would take advantage of different weaknesses.

The vulnerabilities that attacks like Stuxnet exploit are one of the major factors that distinguish them from more conventional cyber attacks such as the sustained distributed denial-of-service assault on Estonian cyber infrastructure in 2007. Kiras warns that special operations forces "conduct missions of strategic importance, yet exist in finite quantities, and must therefore be used wisely."[10] Similarly, Libicki has noted that, although cyber vulnerabilities are by their very character unknown until exploited (or discovered and fixed), "cyber attacks are self-depleting."[11] That is, there are only so many vulnerabilities that can be exploited, and to some extent the character of the vulnerability may also define the limits of what the cyber attack may achieve. One would think that this would lead to very selective use of cyber attacks that

rely on exploiting system flaws, in the same way as special operations forces are only used selectively because there are relatively so few of them and they are difficult to replace. This is not necessarily the case, however, as there are other pressures involved.

First, the available vulnerabilities, whether known or unknown, are finite in number, as Libicki implied—to use them is to deplete them, as they will inevitably be corrected. More important, the available vulnerabilities are largely *collective*. That is, whereas any one nation's special operations forces are purely that nation's to use as, when, and how it wishes, this is not the case with cyber vulnerabilities. Such flaws, being a collective pool, are open to anyone and everyone

cyber vulnerabilities are by their very character unknown until exploited

seeking to use or fix them. If one country's hackers discover a new flaw, it is probable that any other country's hackers may already have, or will in the future. Furthermore, while such hackers, depending on their motives, may desire to hold the potential exploit secret for personal, commercial, or national use, there are also firms whose duty is to discover and patch such vulnerabilities out of existence. Stuxnet may no longer find it possible to use the same avenues of exploitation to break

into computer systems because Symantec has updated its malware definitions and because Microsoft and other relevant companies may have patched those particular vulnerabilities in their own software. This inherent dynamic in cyberspace concerning system flaws is such that an operator's first instinct is to try immediately to exploit any discovered weaknesses for fear that otherwise someone else will, and that ultimately however the vulnerability is, or is not, used, it will be patched and that avenue of attack will be closed off. For those concerned with national security, this instinct must be balanced by the need to achieve beneficial effect in service of strategy or policy. Is there sense in using a recently discovered, powerful cyber vulnerability on a target of low importance solely to make sure it is not used against oneself or fixed before it can be used?

Ultimately, the question of when to exploit a cyber vulnerability is answered by human judgment. Judgment is also required concerning when to protect against a known flaw. Other cyber actors may detect one while fixing a previously unknown flaw and decide quickly to exploit the defect before the patch proliferates and destroys their chances of capitalizing on it. A defender may be so confident in his defenses—such as an air gap—that he neglects basic security on the machines behind that gap, with the result that already known and fixed vulnerabilities may yet be available for exploitation. Software firms may also be lazy or duplicitous about addressing vulnerabilities in their own software.

An inability to find the flaw allowing cyber attacks or to perceive that a cyber attack is actually under way—as with Stuxnet, which took control of the feedback systems to inform those monitoring the centrifuges that everything was normal even as it was tearing 1,000 of them apart—also allows vulnerabilities to last longer than in ideal theoretical conditions. Some known vulnerabilities have persisted for years, across multiple generations of software, without being addressed. Others are exterminated immediately upon discovery. The individual organizational or communal culture frequently determines the alacrity with which flaws are fixed.

One of the major fears that has yet to be borne out from the Stuxnet attack is the possibility that it could serve as a blueprint for others for their own cyber attacks, potentially including those hostile to the West. This seems unlikely if Stuxnet really is the digital equivalent of a special operation, for special operations are immensely context-dependent. As Colin Gray notes, "Findings on the conditions for the success or failure of special operations cannot sensibly be presented as a formula, a kind of strategist's cookbook."[12] Stuxnet was designed to take advantage of particular flaws of specific operating systems and programmable logic controllers of select nuclear facilities to overwhelm the physical limits of particular centrifuges. This points to an extended period of gestation for Stuxnet simply to discover such a succession of vulnerabilities, flaws, and the breaking point of

Left: President George W. Bush visits Estonia, 2006

Right: Secretary of State Condoleezza Rice arrives for meeting with Georgian Minister of Foreign Affairs, August 2008

Left: National Cybersecurity and Communications Integration Center director speaks to press at Department of Homeland Security, 2010

IR–1 centrifuges. Stuxnet would seem to have little to offer in terms of concrete ability actually to reproduce such an attack against a different facility: vulnerabilities and flaws would necessarily be different and the purpose and aims of the attack would differ as well. What can be extrapolated from Stuxnet is a design philosophy, and perhaps inspiration for further innovation in the creation of serious cyber attacks. Due to the character of Stuxnet alluded to above—the Frankenstein of best practices—all the tools already existed, for the most part. It was just a matter of using them in concert in the specific way in which they were used.

Conclusion

Special forces are "military assets designed and trained to conduct tactical actions delivering strategic outcome out of proportion with their size and that if conducted by conventional units may have disproportionate negative impact on policy."[13] The West, fearing such a disproportionate negative effect, has been shy of the prospect of armed conflict with Iran. The preferred method has been a mixture of sanctions and diplomacy. Given the slow effect of sanctions thus far, employment of Stuxnet to attrite the physical capacity of Iranian nuclear plants, even if the attacks to date have not had a sufficient effect necessary to overwhelm the Iranian ability to replace broken machinery, fits in well with overall policy. Strategically, it makes sense: first, one prevents the importation of necessary materials, and then one takes covert action that forces one's opponent to expend his limited stocks without being able to renew them, as stock limitation on its own is hardly potent without a context that makes those limits meaningfully damaging.

The disproportionate effect is simultaneously both confirmed and doubtful. Stuxnet destroyed 1,000 centrifuges, but it could not remove from operation the remaining 8,000 at the Natanz facility. For a program, however malicious, ultimately to achieve that level of physical destruction of infrastructure, even if only as a second-order effect, is disproportionate considering how inexpensive such an attack is compared to other, less attractive policy options. Importantly, however, Iranian production of lightly enriched uranium did not drop; it actually increased somewhat during the period it was affected by Stuxnet as the Iranian nuclear facilities improved their efficiency—although clearly it did not increase as much as it could have, had the damage not been done. Furthermore, Iran was able to replace the lost centrifuges, and it still maintains a buffer of materials remaining to build additional IR–1 centrifuges as necessary. This remainder may be sufficient for only 1,000 more, or possibly up to 4,000 more, and Iranian smuggling efforts may increase these numbers. It is unknown whether those responsible for Stuxnet are heartened by their success, or are frustrated by having failed to destroy more, but either reaction may motivate further attacks. Regardless of motive, further attacks would be necessary to affect the Iranian nuclear program significantly; as long as they can replace centrifuges, lost centrifuges only represent relatively minor time lost to the Iranians. Another cyber attack, however, will undoubtedly be expected, and the Iranians are on guard. Surprise, the best ally of special operations, is now missing.

The Stuxnet malware, in the context of international sanctions, ultimately has not affected Iranian political will to a sovereign nuclear program or Iranian capabilities sufficiently that their goal cannot be pursued regardless of intent. What would a strategically successful Stuxnet look like? That sort of attack would have to be destructive enough to at least leave a permanent mark on Iranian capabilities by overwhelming the material redundancy available to their nuclear programs. It would also have to be able to overcome increased Iranian nuclear efficiencies.

Such success may be possible, since malware such as Stuxnet has one significant advantage over physical special operations: unlike actual people, a program can be in multiple places at once—hundreds of thousands, millions, or more—if necessary. It should be possible to attack multiple specified targets with a single virus exploiting a set of vulnerabilities common to all targets—that is, compress a special operations campaign in time to orchestrate a massive attack in parallel, rather than a sequence of missions. Stuxnet may even have been designed to achieve this, too. Iran has admitted that Stuxnet found its way into their Bushehr nuclear power plant and, in early 2011, nearly 170 fuel rods had to be removed from the reactor soon after inserting them—an occurrence not unheard of elsewhere in the world, but hardly frequent. Some have speculated on the existence of a link between Stuxnet's infiltration of the Bushehr facility and its recent troubles. Whether or not Stuxnet had an effect on Bushehr is irrelevant: the potential for attacks in parallel has already been noted.

Yet not having achieved the necessary level of success at Natanz is not surprising. Any sort of friction could have intruded upon Stuxnet's infection and control of Natanz enrichment facilities, and solitary special operations rarely have such decisive effect on their own, although "solitary" may not gel well in possible future cases of a massively parallel assault on multiple facilities. Nonetheless, as the first special operation in the cyber dimension of war, and with the purpose of causing physical damage, Stuxnet was operating entirely in unknown territory. Now, the right lessons need to be learned. **JFQ**

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Why Iran Didn't Admit Stuxnet Was an Attack

By G A R Y D . B R O W N

n July 2010, news broke that a new computer virus had been discovered. To casual observers, it probably elicited little more than a yawn. After all, there seems to be a new "cyber threat" reported every day. The detection of new computer viruses is announced routinely. In most cases, by the time the event is publicized, the major antivirus manufacturers have already developed a patch to address whatever software flaw the malware was designed to exploit.

To more experienced cyber players, however, this July 2010 event was far from routine. "Stuxnet," as the virus came to be known, was far more complex than run-of-the-mill hacker tools. The complicated and powerful code was a self-replicating worm that targeted programmable logic controllers (PLCs), the simple computers used to perform

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automated tasks in many industrial processes. PLCs are part of industrial control systems, most commonly referred to as Supervisory Control and Data Acquisition (SCADA) systems. SCADA systems are critical to the modern industrial world, controlling such things as water plants, auto manufacturing, and electrical powergrids.

Stuxnet could not spread directly through SCADA systems. It propagated over computers running the Windows operating system. From there, it searched for a certain computer-to-SCADA interface system. If the interface was present, Stuxnet was programmed to determine if it could target a PLC—but not just any PLC. Stuxnet singled out PLCs made by Siemens.[1]

The Stuxnet code showed up on computer systems around the world, where it parked on hard drives, remaining inert if it did not find what it was seeking. The numbers indicate it was aimed at Iran; nearly 60 percent of reported Stuxnet infections

occurred on systems in Iran.[2] In fact, at least one system Stuxnet was programmed to target controlled centrifuges critical to the production of nuclear material. It appears that Iran's uranium enrichment facility at Natanz was the specific target.[3] After Stuxnet became public, Iranian officials issued a statement that the delay in the Bushehr nuclear power plant being operational was based on "technical reasons," but did not assert it was because of Stuxnet.[4] At a news conference, President Mahmoud Ahmadinejad stated that malicious software damaged the centrifuge facilities, although he did not specifically mention Stuxnet or Natanz.[5] The passive posture it took on Stuxnet indicates Iran concluded that a public statement that it had been the victim of a cyber attack would not have been in its best interest. This article examines some of the possible reasons why Iran may have drawn this conclusion.

Before Stuxnet, the most notable actions in cyber were probably the events in the

Republic of Georgia and in Estonia. Neither rose to the level of a cyber attack. In Georgia, distributed denial-of-service (DDoS) assaults on government Web pages began in about mid-July 2008. Three weeks later, the assaults significantly increased and were accompanied by the Russian military crossing the border into South Ossetia, a Georgian province.[6] Ultimately, the conflict resulted in over 1,000 casualties and tens of thousands of displaced civilians. The cyber portion of the armed conflict in Georgia did not meet the common definition of an attack and, in any event, paled beside the destruction and death resulting from the invasion.

The situation in Estonia in 2007 was different in that it was not accompanied by a kinetic event. After the Estonian government relocated a World War II–era Soviet statue from the center of Tallinn to a military cemetery, Russian "hacktivists" (hackers motivated by patriotism or ideology) began to launch denial-of-service and DDoS actions against Estonian Web sites. Ultimately, the activity resulted in making government, banking, and many other commercial Web sites unavailable to Estonians.[7] Estonia contacted the North Atlantic Treaty Organization (NATO) to ask for support, but was rebuffed. There was agreement that, as serious as the cyber action was, it did not qualify as a cyber attack.

The Estonian experience led to the conclusion that NATO simply does not consider cyber action worthy of being called an attack. For NATO, an attack would trigger a potential self-defense response by the Alliance. "Not a single NATO defence minister would define cyber-attack as a clear military action at present."[8] However, NATO's position on aggressive cyber activities may be changing.[9]

There were initial indications after the discovery of Stuxnet that Iran might state the obvious. In the immediate aftermath of the Stuxnet event, an Iranian official indicated Iran had come under "cyber attack," but he was quickly silenced. Since then, there has been no further indication of how the event would be characterized in Iran.

Although there is no formally agreed-upon definition of cyber attack, most scholars would define it in a manner similar to a more traditional, physical attack. A common definition of cyber attack is "a cyber operation which is reasonably expected to cause death or injury to persons or damage or destruction to objects."

The Stuxnet event was as clearly a cyber attack as any publicly announced event to date. Intentionally designed malware directed against a nation-state resulted in the physical destruction of state-owned equipment.[10] The centrifuges were destroyed as effectively as if someone had taken a hammer to them,[11] and these were not just random bits of equipment. The destroyed centrifuges were a critical component of Iran's nuclear ambitions.[12] Whether the rest of the world likes it or not, Iran is working toward an independent nuclear capability. Another nation interfering with that clearly infringes on Iranian sovereignty. That means that not only was Iran attacked, but also the attack resulted in injury to a significant aspect of government policy.

Iran's "non-position" on the Stuxnet event has been frustrating to practitioners in the field of cyberspace operations. Finally, there was a well-documented, unambiguous cyber attack to dissect! And yet there was little official discussion of the issue because Iran passed up its opportunity to complain of an unjustified attack.

It is unusual that a nation would be attacked and not be willing to state as much. The community of nations (for example, the United Nations, the Arab League, or some other international organization) may be reluctant to tell a nation it has been attacked when it apparently feels otherwise. After all, if a nation does not feel it has been wronged, it is not really within the purview of the international community to try and convince it otherwise. This unusual situation is perhaps unique to cyber. It is difficult to interpret artillery bombardments or invasions by troops as anything other than attacks. However, in the cyber arena, there is a danger to the international community in this benign neglect.

The problem with turning a blind eye to the event is that, not only was Stuxnet an attack, it also was quite possibly an illegal attack under international law. In addition to violating the general prohibition against a use of force against another nation, this event arguably violated the law of war. The law of war requires that attacks be discriminatory, meaning they must be directed against military objectives only. Stuxnet was a self-replicating worm. It contained certain controls, but demonstrably not enough to prevent it from inserting itself into civilian systems around the world.

Iranian Motivations

What would motivate Iran not to just admit it was attacked? As the victim of an attack, it could possibly have gained support from the international community. At a minimum, it might have hoped for statements of condemnation to dissuade future similar attacks against it.

Discussed below are several reasons Iran might have chosen not to declare Stuxnet an attack. Although I have no insight into why Iran chose this course of action, I discuss the possibilities basically in order of probability, starting with the most probable.

Embarrassment. It is possible Tehran is simply ashamed that it lost a significant portion of its hard-obtained ability to create nuclear weapons material to a computer bug, especially when it portrays itself as having a significant cyber capability of its own.[13] Furthermore, to make things worse, the most commonly suggested perpetrator of the event was Iran's archenemy, Israel.

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whether the rest of the world likes it or not, Iran is working toward an independent nuclear capability

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A video screened at the retirement party for the head of the Israel Defense Forces indicated at least some level of involvement by Israel in the cyber attack on Iran's nuclear program: "The video of Lieutenant General Gabi Ashkenazi's operational successes included references to Stuxnet, a computer virus that disrupted the Natanz nuclear enrichment site [in 2010]."[14]

Irrelevance. Iran may have felt that its complaints would not be taken seriously since it is already on the outs with the international community over its nuclear program: "The United Kingdom and many other countries have serious concerns about the Iranian Government's policies: its failure to address serious international concerns about its nuclear programme; its support for terrorism and promotion of instability in its region;

and its continued denial of the human rights to which its own people aspire and which Iran has made international commitments to protect."[15]

According to an article in the *New York Times*, "The United Nations Security Council leveled its fourth round of sanctions against Iran's nuclear program on Wednesday, but the measures did little to overcome widespread doubts that they—or even the additional steps pledged by American and European officials—would accomplish the Council's longstanding goal: halting Iran's production of nuclear fuel."[16]

> *this event arguably violated the law of war*

Besides, even if Iran had been able to convince the United Nations it ought to take action, the chances are slim that any action against, or even condemnation of, Israel would survive a journey through the Security Council.

Preserving Future Options. Iran cannot hope to compete in the traditional military sphere with the West, so it is apparently attempting to level the playing field by developing a nuclear capacity. Similarly, it may be hoping to develop an asymmetric cyber attack ability for the same reason. There are reports this is the case.

General Ali Fazli, acting commander of the Basij, was quoted by Iran's state-owned newspaper as saying Iran's cyber army is made up of university teachers, students, and clerics. He said its attacks were retaliation for similar attacks on Iran, according to the semi-official Mehr news agency. There were no further details about the possible targets or the time of the attacks:

Iranian hackers working for the powerful Revolutionary Guard's paramilitary Basij group have launched attacks on websites of the "enemies," a state-owned newspaper reported Monday in a rare acknowledgment from Iran that it's involved in cyber warfare. . . . "As there are cyber attacks on us, so is our cyber army of the Basij, which includes university instructors and students, as well as clerics, attacking websites of the enemy," Fazli said. "Without resorting to the power of the Basij, we would not have been able to monitor and confront our enemies."[17]

A similar consideration might just be called "unclean hands." If a country is up to anything it should not be doing, its government might not feel it prudent to complain when the cookie jar lid pinches its fingers. For example, an alleged Soviet pipeline explosion reported in the early 1980s may have qualified as a cyber attack—but one that was possible only because the Soviets had stolen infected pipeline management software from Canada.[18] As a result, even if the Soviet Union

Agência Brasil

Iranian President Mahmoud Ahmadinejad claimed Stuxnet virus did not affect nuclear operations

realized it had been "victimized," it may not have been inclined to complain.

Belief the Action Was Legal. Although most legal experts would conclude that an offensive cyber action resulting in the physical destruction of property is an attack, there is no definitive evidence on the topic. We have little insight into what Iran believes is the state of play on cyber legality. From the inaction of the community of nations, we can infer there are no international restrictions on purely cyber activities. Moreover, other than the legally unchallenged Stuxnet, there is no indication that it is lawful to actually destroy things in another country—even if the destruction is caused by a purely cyber event.

Difficulty of Attribution. It is the nature of cyberspace and the Internet that makes it challenging to find out who is responsible for any given action. Appropriated computers, intermediate hop points, and many other

techniques make it tough to know the origin of an activity, much less the originating actor.

In this case, although Iran may feel there are some obvious suspects, they may not be able to prove who was behind Stuxnet. One example of how the Internet has created new challenges in attribution is the rise of independent actors on many levels. Cyber techniques now allow anonymous coordination between actors, so action can be more effective and devastating, but the risk of discovery is smaller.

Of particular note are the hacktivists, who began to garner notice in 2007 with events in Estonia, followed by other significant activity in Lithuania and Georgia the following year. In a wonderful example of blurring the line between state policy and independent criminal actors, a group known as StopGeorgia facilitated the cyber assault on Georgia. This group of nationalistic hackers provided DDoS kits to novice hackers, along with lists of Georgian targets. They also offered more sophisticated malware, complete with instructions on how to employ it. These services were available to anyone who went to the group's Web site.[19]

Not all hacktivists are Russian, however. The Web site WikiLeaks accepts and publishes sensitive information "leaked" to it by members of the public. After the site published classified documents that had been stolen from the U.S. Government, many private companies in the United States took steps in an attempt to make WikiLeaks less effective. Most of the actions were taken by financial companies that refused to process payments for WikiLeaks.[20] As a result of the financial companies' actions, the loosely affiliated hacker group Anonymous responded by freely distributing downloadable malware with instructions on how to use it to harm the targeted companies.

The activity reported to have been taken by Anonymous hacktivists did not result in physical damage to computers. Even if it had, however, it may not have made sense to treat the action as a cyber "attack" because the perpetrators were individual civilians, acting only under suggestion from a higher organization. Because it is often impossible to know the individuals behind a nefarious cyber action, at least in real time, some countries are more comfortable treating all cyber events as criminal cases rather than potential acts of war. This may be how Estonia viewed the action against it in 2007: "It was clear to the Estonian

authorities that the cyber attacks could—and should—be treated as cyber crime."[21] On the other hand, even Estonia might see things differently if the "cyber attack" were destructive—like Stuxnet—rather than a denial-of-service attack or something similar.

As a subset of this rationale, in the bizarre world of international intrigue, it is possible (although it has not been widely suggested) that Iran itself concocted the Stuxnet scheme to make it appear a victim of Western powers, while at the same time providing an excuse for delays in its nuclear program. This theory is purely speculative, and no evidence is offered to support it.

In addition to the rationales discussed above, there are several that do not seem to apply to Iran's motivation in this case. Even if they are not relevant in the case of Stuxnet, however, they are interesting in the larger sense of cyber operations.

Fear. In theory, a country could be afraid of the reaction of the adversary to being called out. A cyber adversary might suddenly decide more aggressive options were in order if they were caught in the act. However, the circumstances here make it unlikely that fear played a role in Iran's decision.

Deception. It is possible the victim of a cyber attack may want to keep its detection of the attack a secret. The offended nation may want to gather intelligence on adversary tactics, for example. This constraint would probably disappear once the attack becomes public, however.

Overcome by Events. If a cyber attack occurs in the context of kinetic activities, it may not merit mention. This is similar to the situation that occurred in Georgia. With bombs falling and tanks rolling, cyber disruption did not merit much attention—although that case did not rise to the level of cyber attack. This is also what happened when Israel reportedly used cyber techniques to take down air defenses in Syria before an air raid that destroyed a military construction site in 2007.[22] The cyber event may have been an "attack," but when it is done in conjunction with falling bombs, it gets lost in the cognitive debris.

In the end, it probably does not matter in this specific case that Iran did not officially declare it had been attacked. Although there are reasons as detailed above to conclude that Israel was behind Stuxnet, it is doubtful the international community would have found enough evidence to establish conclusively that Israel was responsible. Even if it had, no effective action was likely to survive contact with the United Nations Security Council.

It is unfortunate that the clearest example of cyber attack appears to have passed by without a conclusive determination, which could have been driven by a statement from the victim country. Stuxnet may now fade into the sunset like so many other offensive actions that were famous in their day—Titan Rain, Moonlight Maze, Operation Aurora.[23] It looks to become just another uncategorized cyber action, and we may have missed our best opportunity to begin setting out boundaries for illegal behavior in cyberspace.

So far, the customary practice of nations in cyberspace seems to be, "Do unto others whatever you can get away with." Sadly, until a major player like the United States suffers a catastrophic cyber event, it appears likely to stay that way. **JFQ**

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"The Age of Irregular Warfare: So What?"

Best Feature Article
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Not Shown: Dr. Joseph Collins, National War College; Dr. James Lacey, Marine Corps War College

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Enduring
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America's Dependence On and Need to Secure Its Supply of Permanent Magnets

By J U S T I N   C .   D A V E Y

The United States is the world's preeminent military power, due in large part to its technological superiority. This lead in innovative technology supporting national security also includes advances in new and "green" energy applications. A common ingredient enabling the production of many of these applications is a group of minerals known as rare earth elements (REEs). Two REEs in particular, the refined metals neodymium and samarium, are key components in the manufacture of miniature high-temperature-resistant permanent magnets. These magnets are essential to wind turbines, hybrid car engines, and computer hard drives. Moreover, they are critical for military applications including precision-guided munitions, tank navigation systems, and electronic countermeasures equipment.

The demand for REEs is steadily increasing in the world. Simultaneously, the supply of REEs is shrinking—or rather China, which annually produces 97 percent of the rare earth minerals on the world market and controls some 37 percent of the planet's known reserves,[1] is steadily reducing its exports. China dramatically restricted its exports by 72 percent in the last 6 months of 2010 to satisfy its rapidly expanding national appetite for REEs.[2] China is also progressively acquiring the industrial base to manufacture permanent magnets and their end products at the expense of American businesses, which China systematically purchases and relocates within its borders. The entire supply chain of REE permanent magnets is now in China.[3]

As the American military and industrial sectors continue their move toward increased reliance on miniaturized high-performance electronics and strive to adopt more energy-efficient technologies, there are concerns that the United States may trade its reliance on Middle East oil for dependence on REEs from China. This article illustrates how REEs have become a deeply ingrained need throughout the American economy and, in particular, how rare earth magnets are now indispensable to the defense industry. It also explores how the United States should react to a threat to its lead in the technological innovation of military applications that use permanent magnets.

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Rare earth oxides such as neodymium and samarium are vital to manufacture of permanent magnets used in military applications

U.S. Department of Agriculture

In order to break the pattern of dependence on China, the United States should reconfigure its National Defense Stockpile (NDS) to provide a buffer supply of REEs to meet defense needs for 5 years, while providing government incentives such as tax breaks or loan guarantees to aid resurgent domestic REE mining and refining firms. It is critical

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the government also be on guard against further sale and export of such U.S. companies to China. Simultaneously, the United States should continue funding research into permanent magnets using alternative materials that could balance the demand for REEs.

Rare Earth Elements

REEs have been described as "vitamins of modern industry" because of their necessity and wide application across the fields of energy, defense, and computer technology.[4] However, they are scarcely familiar to the general public. There are 17 minerals in the family of REEs: 15 from the chemical group known as lanthanides, plus scandium and yttrium.[5] These elements share similar geochemical characteristics and are qualitatively comparable to the chemistry of aluminum.[6] However, the slight variances in atomic structure between the REEs yield diverse optical, electrical, metallurgical, and magnetic properties that lend themselves to

a vast and growing number of uses. Since there are only minor differences in their chemical properties, REEs are commonly found clustered in mineral deposits, but in widely varying concentrations.

The term *rare* in REEs is not accurate. It persists due to a combination of misunderstanding and indifference that characterizes public perception. REEs are actually relatively abundant throughout the Earth's crust, about the same as some major industrial metals (copper, zinc, and chrome) and even greater than several precious metals (gold, silver, and platinum).[7] Nevertheless, these deposits are not concentrated, at most ranging up to a few hundred parts per million by weight. Although REEs are present in most massive rock formations and sources exist around the world, such low concentrations make the mining and recovery processes difficult and expensive. Nor can the industrial base required for production be created quickly. From the time a deposit is discovered, it takes 10 to 15 years of development and construction of the infrastructure needed to establish a full-scale REE recovery operation.[8] Consequently, it will require long-term vision and immediate action to wean the United States from its almost total dependence on foreign sources as world competition for REEs escalates.

Map shows locations of rare earth deposits in United States

U.S. Geological Survey

Applications

Rare earth elements are vital to an ever-increasing number of industries. According to the U.S. Geological Survey (USGS), "These uses range from mundane (lighter flints, glass polishing) to high-tech (phosphors, lasers, magnets, batteries, magnetic refrigeration) to futuristic (high-temperature superconductivity, safe storage and transport of hydrogen for a post-hydrocarbon economy)."[9] Two of the most common uses for REEs in the United States are metallurgical applications and as catalysts in the petroleum refining and auto industries.[10] Other widely recognized products include lasers, fiber optics, superconductors, rechargeable batteries, and fluorescent bulbs, as well as REE-enhanced phosphors in LCD television screens, cell phones, and laptop computers.[11] Like a golden thread in a tapestry, these unique and indispensable minerals are woven through the fabric of American society and businesses. Their contribution to the quality of life and security of this country is considerably greater than expected considering their relative obscurity and decreasing availability. Exceptionally notable is how REE alloys revolutionized the magnet trade and subsequently enhanced the products of all other businesses relying on that industry, namely consumer electronics that are now considered commonplace and

defense applications that are indispensable. Consequently, rare earth permanent magnets comprise the widest use of REEs.[12]

Neodymium and Samarium

Neodymium and samarium make up only a portion of the REE market, which is an even smaller part of the global metals market, but these two metals have a disproportionate influence on all high-tech businesses, especially the defense industry. They combine with other elements (specifically iron, boron, and cobalt) to make exceptional permanent magnets. Samarium-cobalt (SmCo) magnets have the

highest known resistance to demagnetization.[13] This capability, meaning the magnet has higher coercivity, allows them to function in high-temperature environments without losing magnetic strength—an essential attribute for most military applications. Similarly, neodymium-iron-boron (NdFeB) magnets are incredibly strong—the most powerful commercial magnets available. Compared to an equal mass of traditional ferrite magnets, NdFeB magnets

have over 10 times the magnetic energy product.[14] Accordingly, a much smaller amount of magnet is required for any particular application. This attribute makes them ideal for miniaturization of motors, electronics, and electrical components, including possible nanotechnologies.[15] The advent of these tiny, powerful magnets ushered in the era of the Sony Walkman, personal laptop computer, and more.

Permanent Magnets

NdFeB and SmCo magnets are ingrained in the commercial high-tech, automotive, and energy markets of the United States. For instance, miniaturized multi-gigabyte disk and DVD drives, a mainstay in portable computers, are not possible without such magnets.[16] Those electronics are also used in automobiles for pollution-controlling catalytic converters and hybrid car engines—high-temperature environments where regular magnets would rapidly fail. Moreover, the use of REE magnets reduces the overall weight of a vehicle, making it more energy efficient. A typical Toyota Prius uses 2.2 pounds of neodymium, one-tenth the mass of corresponding iron magnets.[17] Americans will buy approximately 180,000 Priuses this year, resulting in the consumption of 198 tons of neodymium in the United States for this one model of vehicle. NdFeB magnets are also in demand in the renewable energy market as more wind turbines come on line. The generators used in newer wind turbines require up to 2 tons of these magnets. However, neodymium magnets lack the extreme temperature resistance qualities of their SmCo counterparts and

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initially presented challenges in the larger turbine applications. The answer: more REEs. Scientists discovered that the addition of other REEs (terbium or dysprosium) to the NdFeB alloy helped to increase its coercivity. This makes for a better product, but is indicative of increasing U.S. dependence on the availability of rare earth metals, especially from foreign sources. Nowhere is this trend more unsettling than in the field of national security.

Miniature high-temperature-resistant permanent magnets are a key factor in developing state-of-the-art military technology. They pervade the equipment and function of all Service branches, starting with commercial computer hard drives containing NdFeB magnets that sit on nearly every Department of Defense (DOD) employee's desk. Precision-guided munitions depend on SmCo magnets as part of the motors that manipulate their flight control surfaces. Without these advanced tiny magnets, the motors in "smart bombs" like the Joint Direct Attack Munition (JDAM) would require a hydraulic system that is more expensive and three times as large. The generators that produce power for aircraft electrical systems also rely on samarium-cobalt magnets, as does the stealth technology used to mask the sound of helicopter rotor blades by generating white-noise concealment.

Other permanent magnet applications include "jet engines and other aircraft components, electronic countermeasures, underwater mine detection, antimissile defense, range finding, and space-based satellite power and communications systems," according to USGS.[18] The Army relies on REE magnets for the navigation systems in its M1A2 Abrams main battle tank, and the Navy is developing a similarly dependent electric drive to conserve fuel for its *Arleigh Burke*–class destroyers. The Air Force's F–22 fighter uses miniaturized permanent magnet motors to run its tail fins and rudder. While REE applications, especially products dependent on NdFeB and SmCo permanent magnets, have given the United States a tremendous technological advantage, the increased reliance on these metals coupled with dramatically decreased domestic mining and the international export of American refining and manufacturing capability puts the United States in a precarious position.

Market Forces

The global economy currently consumes an estimated 134,000 tons of REEs each year. However, worldwide annual mining production is only 124,000 tons. For the time being, the delta is bridged using materials stockpiled at various commercial mines around the world. This will not suffice for long. In 1998, by comparison, total annual consumption was about 50,000 tons, and there was no future availability

U.S. Navy

Navy officer prepares to test drive new conventional hybrid vehicle, which uses permanent magnets in engine

concern.[19] The explosive growth of the electronics and energy industries changed all of that. World demand is anticipated to rise to 180,000 tons per year by 2012 and surpass 200,000 tons annually in 2014.[20] Although China's production is expected to increase each year, it will not likely keep pace with demand. A shortfall of up to 40,000 tons per year may come about over the next 5 years.

China is the world's principal provider of REEs. Its propensity to use this position as a diplomatic "stick" and element of economic power, combined with a growing domestic appetite for these elements, threatens to exacerbate the anticipated global shortage. In early 2010, following the disclosure of a multibillion-dollar arms deal with Taiwan, several Chinese military news sources and Web sites urged the government to completely ban the sale of REEs to U.S. companies as a means of retaliation.[21] This is not a hollow threat, as Japan, the world's largest REE importer, discovered in September 2010. Following a diplomatic clash with Tokyo over the detention of a Chinese fishing boat captain (who rammed his boat into two Japanese coast guard vessels in a disputed area of the South China Sea), China ceased nearly all REE exports to that country.[22] Japan was left scrambling to patch relations with China and simultaneously began searching for alternative sources in

order to restore the lifeblood that enables Japanese companies to manufacture products that are the cornerstone of its electronic and automotive industries. The embargo finally ended in late November, but the threat of future restrictions still looms.[23] The United States does not want to suddenly find itself in a similar predicament.

U.S. Challenges

Neodymium and samarium are critical to the strength of the U.S. national defense industry, but the current supply of these metals is entirely external to the country. Moreover, demand for permanent magnets is expected to increase 10 to 16 percent per year through 2012.[24] Nonetheless, the United States has never included REEs in its NDS requirements as a hedge against a future shortfall.[25] Some industry experts are becoming more vocal about what they see as growing risks posed by the scarcity of domestic suppliers. For instance, the United States Magnet Materials Association (USMMA), an alliance of firms from the aerospace, electronics, and medical materials fields, published a plan in February 2010 listing actions Washington can take to address what they see as the impending rare earth crisis.[26] This group insists that the current situation portends a serious threat to the economic well-being and national security of the United States.

China is credited with holding 37 to 43 percent of the world's known REE reserves, but the United States is not without its own REEs. America is estimated to have 13 percent of known rare earth reserves. However, American mining operations essentially ceased in 2002 with the closure of California's Mountain Pass mine because of environmental concerns and declining profitability as a result of low Chinese prices in the previous decade.[27] Gareth P. Hatch, a REEs specialist with Technology Metals Research, commented, "I'm not sure I believe that there is a high probability of the U.S. losing access to the raw materials, semi-finished and finished rare-earth products that its defense contractors need. . . . On the other hand, should such a scenario occur, the effects would very likely be devastating, and I would argue that this is an unacceptable risk."[28]

China has slowly reduced its REE exports since 2006, cutting them by 5 to 10 percent each year.[29] This is due to increased internal development (China constitutes about 75 percent of global REE consumption), but is also part of a persistent strategy to entice, if not force, foreign investment and manufacturing industry onto Chinese soil.[30] This was dramatically illustrated in July 2010 by the Chinese Ministry of Commerce's sudden announcement of a decision to reduce export quotas by nearly three-fourths. That drastic 72 percent cut imposed on the last half of 2010 should serve as a wake-up call, highlighting how dependent the United States has become; import source data for 2005–2008 reveals that 91 percent of America's REE imports came from China.[31]

> *America is estimated to have 13 percent of known rare earth reserves*

China's announcement led some companies to increase the price of their permanent magnet products by an average of 20 percent.[32] Continued restrictions will lead to a greater shortage of supplies, which has industry leaders closely watching the situation. The price of neodymium is more than 2.5 times what it was in the summer of 2009, and the stock values of non-Chinese mining companies have jumped dramatically more recently. Most notably, the closing price for

shares of the Western Hemisphere's sole rare earth oxide producer, Molycorp Minerals, is up over 400 percent since July 2010.[33] Although the Molycorp Mountain Pass processing facility produces about 3,000 pounds of REE oxides per year, including neodymium, it does so from a residual stockpile of ore mined over 8 years ago.[34] Those oxides must still be sent to China for final processing because the United States lacks the necessary industry to produce rare earth metals ready for end-use manufacturing. Changing this trend will be costly and time consuming.

The method of separating neodymium and samarium oxides from mined raw ore, then reducing those oxides to a usable metallic element, is difficult. The industrial complex required to house thousands of stainless steel tanks, complicated arrays of chemical baths, extracting agents, and equipment needed for the process covers an area the size of a football field.[35] Start-up costs of a separation plant are likewise overwhelming, ranging from $500 million to $1 billion, with construction expected to take at least 8 years.[36] Consequently, no individual company is eager to risk that much capital in a market where China's state-owned mines have the influence and backing of an entire country to drive REE prices artificially low in order to crush the competition.

Nonetheless, Molycorp is working to modernize and expand its Mountain Pass processing facility. Under the firm's "mine-to-magnets" strategy, it has a goal of generating 20,000 tons of rare earth oxides by 2012 and reestablishing its domestic magnet manufacturing business.[37] Equally important are plans to resume mining of fresh ore having an approximate 12 percent content of neodymium and samarium.[38] This development is encouraging, but makes it even more disturbing to remember that this mine, perhaps the largest non-Chinese rare earth deposit in the world, was nearly purchased by China's state-owned China National Offshore Oil Corporation (CNOOC) as part of their bid for the oil company Unocal in 2005.[39] Unocal acquired Molycorp in 1978, but this fact and its REE supply implications were overlooked during the congressional uproar over the threat to U.S. energy security, which drove the Chinese company to withdraw its bid. Such efforts by Chinese businesses to control international REE

mining and oxide production are not isolated, nor are they coincidental.

Chinese Strategy

There is little distinction in China between private industry and the government, making it increasingly difficult for U.S. firms to compete on an equal footing and remain profitable. An insightful student of China's maneuverings observed, "The Unocal [purchase attempt] involved the provision of a soft loan from the Chinese government to the company [CNOOC]. This is not like a commercial loan. The Chinese government protects its state companies at home and supports them financially overseas. But these companies are essentially expected to be an arm of national foreign policy in their foreign investment, *rather than to create value*."[40] China's growing population and modernizing economy are in need of ever-increasing amounts of permanent magnets. Its expanding domestic wind energy production could soon consume the world's entire supply of neodymium.[41] Those internal demands plus China's aspirations to be a regional hegemon and world superpower drive its policies. To that end, China is pursuing a two-fold strategy: corner the market on REEs and develop a manufacturing base to make the high-tech products that REEs require.

China is methodically acquiring U.S. companies that produce rare earth magnets, transferring that production technology to China, and then shutting down the plants in America. This was the fate of GA Powders, Environmental Laboratory, and Magnequench.[42] The latter company was purchased by a China-based conglomerate in 1995. Magnequench's NdFeB-magnet production line in Indiana was quickly duplicated in Tianjin, China. Once the Chinese company was sure its new plant worked, the Indiana facility was shut down and some of its precision machine tools were relocated to China. Magnequench was the last U.S. company making rare earth magnets. Moreover, thousands of those permanent magnets went into servos for the JDAM guidance system. A senior strategic trade advisor for DOD, Peter Leitner, recognized the paramount need to secure this kind of technology, noting that rare earth magnets "lie at the heart of many of our most advanced weapons systems, particularly . . . precision-guided weapons" and that

China is "trying to replicate the capabilities the U.S. has."[43]

In addition to acquiring mines and manufacturing technology, China can undercut its global competition thanks to its weak environmental regulations and abundance of cheap domestic labor. Its focused efforts in the 1990s drove many non-Chinese firms out of business and left China with a disproportionate share of the market.[44] The longer China continues its export restrictions on REE oxides and refined metals, the greater the pressure on foreign industries to move their manufacturing operations to China, at least the portions that are dependent on REE raw materials. Conversely, China's restrictions breathe new life into the market for alternative products and reinvestment in domestic production. If the United States expects to surmount China's strategy, it needs to confront this challenge on multiple fronts.

Options

In order to stem the tide of dependence on China for permanent magnets, the United States should pursue several options: secure REE sources outside of China (preferably within its own borders), establish an NDS to meet military needs for permanent magnets, develop suitable substitute materials, and employ DOD acquisition policies to improve the REE market for domestic suppliers.

Non-Chinese Sources. Prior to 1990, the United States was largely self-sufficient in meeting its REE and permanent magnet requirements. Mountain Pass was the dominant source and the only large ore deposit mined just for its REE content, having reserves of 20 million tons.[45] Rekindling this and other domestic supplies would be ideal. As Molycorp prepares to restart mining at Mountain Pass, other American deposits being explored include North Fork, Idaho, where samples revealed neodymium concentrations as high as 3.7 percent.[46] According to the U.S. Government Accountability Office, rare earth deposits also exist in Colorado, Missouri, Montana, Utah, and Wyoming.

Other nations that have REE reserves include Australia (5 percent), India (3 percent), and several other countries with a combined total of 22 percent of the Earth's known reserves.[47] Deposits in Canada, owned by Great Western Minerals Group (GWMG), may contain dysprosium and

terbium (needed for increased magnet coercivity).[48] GWMG also owns a magnet alloy producer in the United Kingdom and is planning to build a refinery near its Canadian mine. The company just entered into partnership with the South African firm RareCo to purchase all of the output from that company's Steenkampskraal mine. The first deliveries are expected by late 2012.[49] This moves GWMG another step closer to becoming the first fully integrated REE producer outside of China.[50] There are REE

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mines in Tanzania and the Democratic Republic of the Congo as well.[51]

REE industry expert Jack Lifton surmises that as production of neodymium and other rare earths comes on line in Canada, South Africa, Idaho, and Montana in 2015 and beyond, by 2020 the world will be independent of China as its source of rare earth metals.[52] This is encouraging, but there are still uncertainties in the decade ahead. China could again flood the market with REEs in a short-term effort to devalue permanent magnets, therefore hobbling start-up ventures before they can become self-sustaining. In order to counter China's direct control and funding of Chinese firms, the U.S. Government should provide incentives (tax breaks, contract preferences, and so forth) for domestic companies striving to revive REE mining, refining of neodymium or samarium, or production of rare earth magnets. The USMMA urged the Department of Energy to use $2 billion in grant and loan guarantees to spur reestablishment of U.S. mining and refining operations and increase government support of training and workforce development in the resurgent industry.[53] Greater attention should also be accorded to the planned purchase of any U.S. company involved in the production of permanent magnets. It was partly through this legal avenue that America lost its REE independence. Resurgent domestic efforts must be more carefully guarded.

National Defense Stockpile. The United States has no REEs in its NDS. All

such minerals were sold by 1998, and they were never classified as strategic minerals.[54] In their February 2010 proposal to Washington, the USMMA recommended stockpiling a 5-year supply of REEs to support the government's critical needs while the domestic supply chain is rebuilt.[55] Another recent report to Congress went beyond merely recommending the addition of these critical elements to the stockpile, instead urging that the NDS be completely reconfigured to be the Strategic Material Security Program (SMSP).[56] This newly proposed program would have the power to aggregate materials requirements across DOD and other cooperating Federal agencies in order to establish long-term strategic sourcing measures. The SMSP could leverage the combined buying power of all participating government departments that share a dependence on REE imports. However, a firm commitment from these agencies and a consistent flow of funds are required to enable the SMSP to capitalize on favorable timing of markets.

It would be wise to follow the Defense National Stockpile Center's recommendation to reconfigure the NDS into an expanded and more capable SMSP. However, this action will likely require some reworking of the Nation's procurement bureaucracy to establish the necessary interaction of all affected government departments. Such a consolidation of purchasing priorities for REEs promises the greatest long-term leverage of finances, but the system will take time to establish. At present, Congress should classify neodymium and samarium as strategic minerals for the next 5 to 10 years, adding them to the NDS, while the domestic supply chain for permanent magnets is reestablished.

Alternative Materials. According to George Hadjipanayis, co-inventor of the NdFeB magnet, "It's been 28 years since the discovery of neodymium-iron-boron, and we have not yet found a better magnet."[57] There are substitutes with similar properties available, but just not as good regarding weight or strength.[58] Since 1983, U.S. magnet development has been lackluster, but the search has received renewed emphasis in recent years.

DOD has research, development, and science and technology money it can use to fund exploration of alternative materials.[59] Such efforts could also be done in

concert with other agencies. For instance, the Department of Energy's Advanced Research Projects Agency–Energy, which backs high-risk, high-reward projects, commissioned a $4.6 million research effort looking for a replacement for the NdFeB magnet. Hadjipanayis leads this search for a "next generation magnet."[60] The effort proceeds on three simultaneous fronts.

The University of Nebraska is trying to develop a permanent magnet without using REEs. The Department of Energy's Ames Laboratory is experimenting with combinations of rare earth, transition metals, and other minerals that have not previously been tried with magnets. The University of Delaware, where Hadjipanayis is a professor of physics, is working to fashion a new magnetic material that may reduce neodymium and samarium content by 30 or 40 percent, yet be double the strength of today's NdFeB magnets.[61] Their timeline is ambitious, allowing 3 years for materials experimentation and assembly of a prototype magnet.

The immediate focus for the United States should be on reestablishing its domestic REE supply and permanent magnet production capabilities, but not to the exclusion of pursuing better technology. This requires a delicate balance because it increases the financial risk that companies are taking to reestablish cradle-to-grave REE magnet manufacturing in America. Funding should be appropriated for research into alternative materials. However, the government must then be careful not to mandate the use of a resulting product only for the sake of justifying its investment. The principles of free-market capitalism must be honored in harmony with the need for national security. Moreover, this manner of government support must be pursued collaboratively between private enterprise (having experience with the most efficient ways to pursue production) and DOD (knowing best what the requirements are to support national security).

Department of Defense Policy. DOD already has a regulatory framework established to initiate government action to preserve domestic industrial capabilities vital to national security. DOD Instruction 5000.60 provides guidance for verifying the warfighting utility of the industry in question, that the specific capability is unique and at risk, that there are no feasible alternatives, and that the intended action is the most mission-effective and cost-effective.[62] One way DOD could influence the REE market is with limits imposed through the Defense Federal Acquisition Regulation, such as restricting the use of foreign-produced REE magnets in products it purchases in order to stimulate the resurgence of American industry and ensure the survival of those domestic suppliers. Intentionally high standards must be met before enacting such direct intervention. In addition to ensuring the most judicious use of limited DOD resources (anticipating greater expenses due to imposed limits on competition), stimulating industries through greater innovation that increases competition is always preferred over artificial market restrictions.

The United States is clearly dependent on REE permanent magnets to satisfy its demand for consumer electronics, fuel its automotive and energy industries, and most important, to maintain its lead in state-of-the-art military technology. Although America used to provide for its own permanent magnet requirements, this independence eroded over the past two decades and is now primarily gone. There are no active domestic REE mining operations or permanent magnet production lines fully in the country. The United States is entirely dependent on external sources, which essentially means dependence on its largest economic competitor and fastest-growing military challenger, China.

"There is oil in the Middle East; there is rare earth in China," stated Deng Xiaoping, who ruled China from 1978 to 1997 and inaugurated China's systematic campaign to dominate the world's supply of REEs.[63] The significance of Deng's observation has grown exponentially with the explosion of world demand for REEs and permanent magnet technology. China's own hunger for REEs to feed its modernizing economy, combined with its demonstrated willingness to use its near-monopoly on global production as a political instrument, portends greater conflict over this shrinking resource, relative to the demand for it.

Changing the trend of U.S. reliance on REE imports will be costly and time-consuming, but is incomparable to the price of crippling national security. The probability that America will lose all of its access to permanent magnets is relatively low, but the consequences of such a situation would be catastrophic. Fortunately, the limited supply of REEs resulting from China's increased consumption and reduction of exports has made mining and refining operations potentially profitable again.

There are several firms stepping up to reestablish their place in the market. However, these endeavors will take time and require great investment of capital. Molycorp's recent efforts to revive its domestic magnet manufacturing process and restart mining operations at Mountain Pass, California, are encouraging. Similarly, there is potential for mining operations in six other states and established ventures in Canada and South Africa that promise to open new sources

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of neodymium and samarium in the next 5 years. This is a tenuous time, as the possibility of Chinese maneuverings to flood the market (as it did in the 1990s) and drive prices down threatens to swamp the reemerging competition. U.S. Government interposition to ensure that the reemerging industry is not squelched by Chinese government–funded competitors will help hedge against these possible schemes. Continued exploration of alternative materials and technologies will also balance America's dependence on rare earth elements.

While the permanent magnet cornerstone of the U.S. defense and energy industries is at risk, recovery is not insurmountable. Realizing the existence and scope of the threat, and applying the same creative thought and persistent action that once put America at the forefront of this technology, will ultimately return the Nation to its preeminent place in this field. **JFQ**

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President Obama with Chinese President Hu Jintao during state visit in January 2011

The Empire's Newest New Clothes
Overrating China

By STEVE COONEN

There is a potentially dangerous obsession in America regarding China. The Middle Kingdom's awe-inspiring climb from a state of backwardness and abject poverty to a thriving economy, second only to the United States, in just over 30 years has not merely inspired justifiable pride within the People's Republic; it has also provoked anxiety and fear in the West.

According to many, the "Chinese model" now serves as an enlightened beacon to other developing states, while the liberal free-market model languishes in disrepair along with its decrepit and lethargic American makers. China's overseas investment strategy in energy, minerals, and other resources is portrayed as parasitic in nature—ravaging the Earth of all that is useful in a competitive quest for

domination, while its menacing purchase of America's debt-gone-wild is allegedly making American leaders increasingly beholden to their Chinese debt-masters' political manipulations. Meanwhile, China's rapidly expanding manufacturing base is moving beyond lead-based painted toys, poisoned pet food, and toxic drywall to supersonic stealthy fighters, high-speed rail, clean energy, and the world's fastest supercomputer.[1]

On the surface, fear is an understandable emotional response. The United States is seemingly losing to China in a no-holds-barred global economic competition, and there is no dearth of Cassandra-like assertions from government leaders, unions, the press, and academia portending doom, gloom, and America's decline. Even

America's top diplomat pulled out the Chinese bogeyman card in an attempt to ward off Congress's penny-wise and pound-foolish proposed sacking of State Department public diplomacy programs.[2]

Assertions of Chinese dominance are beginning to ring true with the American public as well. By a margin of 60 to 27 percent, Americans see China's economic strength as more of a problem than their military strength, and 47 percent also incorrectly identified China as the world's largest economy (only 31 percent correctly identified the United States). Equally unsettling is the zero-sum perspective for 47 percent of Americans who consider China's growing economic power a bad thing.[3] The incessant sensationalism surrounding

China's economic prowess almost obliges one to wonder where the United States derailed to have permitted China to climb to such heights, as though America can control China's destiny but not its own.
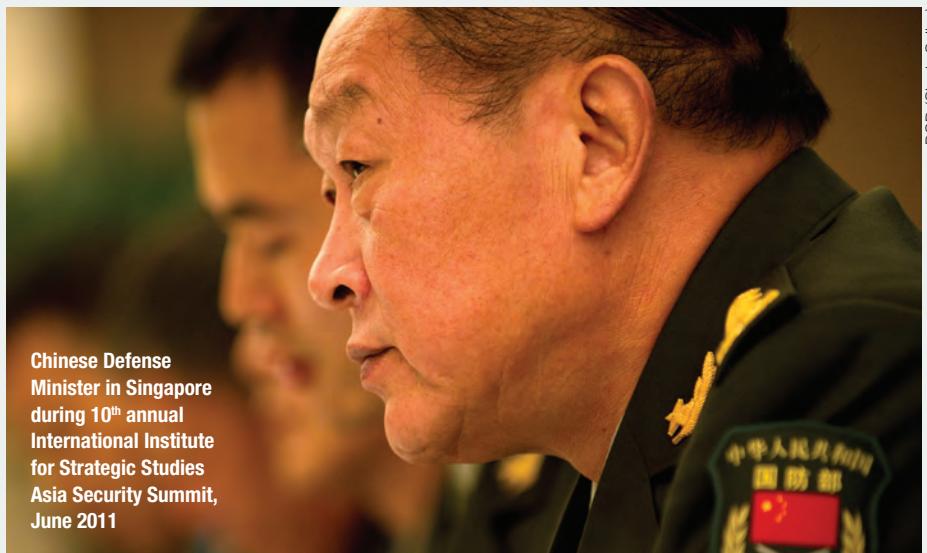
However, despite the outpouring of declarations claiming China's unstoppable ascent and its menacing nature, reality depicts something quite different. China is confronted with a number of significant economic and noneconomic challenges that will inevitably retard its continued growth. Yet China's troubles are no reason for America to rejoice; it is hardly in U.S. interests that China, or any state, fails to develop economically. Wealth tends to engender peace, stability, and, some contend, democratic reforms in autocratic societies.[4]

This article focuses on the two main challenges that limit a proper understanding of China's economic relationships and condition. First is the misunderstanding about the mutually beneficial nature of economic relations between the United States and China. Second is an underestimation of the economic challenges that China faces. The article concludes with U.S. policy recommendations that encourage China's return to market-based reforms.

Fears and Fallacies

Prior to delving into China's numerous problems, one should address those misleading assertions that depict Sino-American economic relations in a less than positive light or project them forward on a confrontational trajectory. Alarmist indictments taint America's perspective with negative biases and an adversarial mindset. If not understood, instead of responding with appropriate policies to address China's very real and growing problems, the United States risks focusing on falsehoods or flawed understandings of Sino-American trade relations, the market, and America's appropriate leadership role. These fears and fallacies need to be addressed and dismissed before moving on to China's more pressing challenges.

The list of imaginary economic perils that China poses to the United States is as lengthy as it is troubling. However, the bases for the alleged threats are laden with logical fallacies. The most significant misunderstanding surrounds the notion that if China is growing—winning—economically, the United States is somehow losing. Many are

Chinese Defense Minister in Singapore during 10th annual International Institute for Strategic Studies Asia Security Summit, June 2011

drawn to the misconception that the United States is in a zero-sum economic competition with China, overlooking the simple fact that companies compete, states do not.[5] The assertion assumes that wealth is finite and thus every dollar China earns can only come at a reciprocal loss to the United States. While this is certainly true in the casinos of Las Vegas or Macau, it is not true in the economic relations between nations.

This assumption ignores that wealth can be created and that trade can be mutually beneficial. These economic truths

help to explain how the global economy grew from $22.8 trillion to $53.3 trillion between 1990 and 2007, or that there are "no examples of countries that have risen in the ranks of global living standards while being less open to trade and capital in the 1990s than in the 1960s."[6] In this light, China's economic growth should be viewed as wholly positive. Economically, it represents a growing market and wealthier trading partner for the United States. Morally, it means that millions of people are now living outside of chronic poverty. Politically, there is no reason why China should not follow the precedent of other former autocratic states whose oppressed citizens increasingly demanded a greater voice in how their new-found wealth was spent.

Commodities and Overseas Investments. Similarly, opinions about China's foreign direct investments (FDI) have taken on a troublesome tone in America. The misperceptions characterize Chinese FDI as a competition—a race for resources—that compels an equivalent U.S. response, or at minimum a dirigiste strategy, before the Chinese assume ownership and control of all the world's resources.

This anxiety demonstrates a fundamental misunderstanding concerning the nature of commodities. Commodities,

nowhere has the misnomer of competition for resources been more pronounced than in the panic-stricken assertions of China's alleged attempt to corner the energy market

such as oil, iron, and wheat, are fungible and are generally purchased on the world's commodity spot markets at prices that the markets bear. If China is able to assist states in the exploitation of natural resources through its overseas investments, then those who consume the commodities will likewise benefit from increased global supplies.

Nowhere has the misnomer of competition for resources been more pronounced than in the panic-stricken assertions of China's alleged attempt to corner the energy market. It is somehow imagined that Chinese national oil companies (NOCs), operating under Chinese Communist Party (CCP) direction, are gobbling up foreign energy assets and hoarding their output, flowing from the wells into Chinese tankers (which

are virtually nonexistent) or pipelines to Chinese refineries before being prolifically consumed by over a billion of the proletariat.

The International Energy Agency describes a vastly different scenario. Like their American counterparts, Chinese oil companies' decisions directing the marketing of equity oil are largely based on commercial considerations. Even state-to-state energy arrangements are usually influenced by market conditions.[7] China's "new acquisitions do not translate neatly or exclusively into supplies flowing to China."[8] Erica Downs of the Brookings Institution observes what is apparently not obvious to many: "Any foreign oil production that China's NOCs send to China merely replaces oil that China would have to buy from other countries."[9] Thus, far from being a rapacious predator in the energy markets, China's acquisitions in the energy arena actually increase the global availability of oil.[10] This is also true for China's investments in other commodities.

Debtor-Creditor Relations. Fear that China can exert undue political influence over the United States as the largest single foreign owner of U.S. debt represents another misplaced worry.[11] The anxiety nonetheless seems logical—that the creditor would have a certain degree of influence over the debtor—and the greater the debt, the greater the influence. Yet when the specifics of the Sino-American credit-debt relationship are evaluated, the disconcerting aspects dissipate.

China "owns" just over 8 percent of U.S. debt.[12] The American public (individuals, institutions, and Social Security) actually holds the greatest portion, and yet their influence over U.S. policymakers is not derived from owning more than 2 out of every 3 dollars of government securities. Instead, their influence is wielded at the polls—a civic responsibility and privilege unavailable to foreign U.S. debt holders.

Nor is China actually lending America money as it is "depositing" or "investing" in U.S. treasuries.[13] In fact, with last year's historically low interest rates, investors were receiving a negative return on their U.S. treasury purchases; China was in reality paying for the privilege to purchase America's debt.[14] China consistently exports more than it imports and tends to attract more foreign investment than it sends abroad. The resulting

Current and former U.S. defense and diplomatic officials participate in Track Two Dialogue with Chinese dignitaries to improve relations

trade and investment surpluses are enormous. China needs to park this excess capital somewhere and is fortunate that the United States is, for the time being, profligate enough to assist China with its excess reserves dilemma. JPMorgan Chase & Company predicts that China will keep buying U.S. treasuries "not only for the near-term stability of the global financial system, but also because there is no viable and liquid alternative market in which to invest China's massive and still growing reserves."[15] Purchasing U.S. treasuries is also one of the mechanisms by which China can keep its currency pegged to the dollar. The resulting dollar-yuan exchange rate is one of the keys for China to maintain its export-driven economic growth—an economic condition that the CCP views as vital in preserving a semblance of domestic stability. Ironically, China's leaders have begrudgingly little choice but to "Buy American"—in this case, debt.[16]

So how are Chinese debt-masters translating this alleged financial stranglehold over America's increasingly indebted policymakers? The actual details of the debtor-to-creditor political manipulation process are, not surprisingly, rather vague. Alas, despite owning over $1 trillion in U.S. treasuries, China has been unable to convert the threat of its heavily debt-laden sword of Damocles over the United States into any noteworthy acts of political compellence.[17] In his study, Daniel Drezner concludes that "the power of credit between great powers has been exaggerated."[18]

Still, today there seems to be a general sense of surrender to the economic myth that is China. When compared to the bashing of Japan and Germany in the early 1990s, there is a notable absence of counterarguments. It is as though at a certain level, America, bound by the grasp of recession, debt, and a general sense of overall economic malaise, has resigned itself to decline. The lack of a counterresponse suggests apathy, resignation, or something else—but surprisingly not disbelief. Yet there should be an element of disbelief or at least a questioning of China's position relative to the United States, for China also has economic challenges. So, while the United States seems to be slowly coming out of a cyclical economic stupor and will continue to face grave challenges associated with its annual deficits and mounting debt into the foreseeable future, China is presented with more serious long-term structural issues that risk derailing its economic miracle altogether.

China's Economic Challenges

China's economic revival came on the heels of Mao Zedong's reform failures and could scarcely have started at a lower point. The Great Leap Forward was marked by economic regression and the deaths of tens of millions. A few years later, the Cultural Revolution again brought economic growth and education to a standstill and ensured a decade of political violence that set China back even further. It is out of this chaos that

Chinese guards with African Union–UN Hybrid Operation protect borehole operated by Chinese engineering company in Sudan

UN (Eskinder Debebe)

China could only improve, and it helps in understanding its sizable initial successes.[19]

The "Four Modernizations" announced in December 1978 was a watershed economic policy decision of Deng Xiaoping and the Central Committee of the CCP. It propelled China to amazingly rapid and relatively sustained economic growth. On paper, the reforms focused on applying science and technology to agriculture, industry, and national defense. In reality, the plan called for incorporating foreign investment and technology along with the education of Chinese students overseas.[20] China witnessed a liberalization in the factors of production: a "free movement of people" in its urbanization efforts; an attraction of foreign capital; and liberalized trade with the rest of the world—ultimately relying more and more on market forces rather than CCP production quotas or other command-economy principles, which were quickly abandoned. The autocratic nature of the reforms, while not representing ideal free-market conditions, were nonetheless liberalizing enough that when applied to a country of 1.3 billion, most of whom were living in poverty, they launched China to unprecedented levels of continuous economic growth.

As less productive rural labor migrated to a dynamic urban manufacturing base, wages and living standards rose rapidly. China's record in reducing poverty was impressive. It is difficult to imagine that as recently as 1996, China had the largest number of poor people in the world. Remarkably, in 2007, the World Bank claimed that "extreme poverty, in the sense of not being able to meet the most elementary food and clothing needs, has almost been eliminated [in China]."[21]

China's economic success is a unique phenomenon that defies precise labeling. Richard McGregor suggests that the "multiple, head-spinning contradictions about modern China" make attempts to describe its system or model extremely difficult. Nonetheless, two things are certain. First, economically, China straddles the free-market and command-economy models. The economic success it has enjoyed to date was generated by Deng's reforms to liberalize its economy. Furthermore, to meet its political objectives, the CCP still interjects itself through state-owned enterprises (SOEs) and the state-controlled financial system. Second, politically, China remains firmly under the autocratic rule of the CCP. The CCP's primary purpose in exercising its leadership over China's economy is "to ensure the survival and viability of the party." This axiom indicates why China's leaders are turning away from the very market-based reforms that permitted its astounding economic growth in the first place. From the CCP's perspective, the firm grip of tyranny cannot be entrusted to an "invisible hand."

Shift Away from Market Economy. The uneasiness of relying on something invisible must be unsettling to leaders of despotic regimes. Moreover, why should autocratic leaders trust it? Regarding the recent demise of the advanced Western democracies and their so-called free-market model, authoritarianism as a reasonable economic model seems to have rebounded with China's rise. Many in the West have become enamored with the mystique of Confucianism and apparent superiority of the Beijing Consensus. Or, if not infatuated with the model, they despairingly describe its ascendancy as preordained.[22]

However, attributing the recent financial meltdown to market failure demonstrates a fundamental misunderstanding of the root causes that led to the crisis. One could easily highlight the genesis of the West's economic challenges not as market failure, but rather as the failure of states in regulating new speculative financial instruments and encouraging irresponsible lending practices by diminishing market risk in guaranteeing private mortgages. For China's leaders to base the perceived superiority of their model on misleading and false assumptions of the free market, and move even further to the left of their

China's economic success is a unique phenomenon that defies precise labeling

increasingly illiberal model, is done at a great peril to their own continued economic development.

When Hu Jintao came to power in 2002, many had hoped that he would move even faster and further in the market reform efforts initiated by his predecessors. Instead, Hu moved in the opposite direction.[23] With the economic calamities that struck the West, China's leaders are now even more enthralled with their Eastern version of economic success. Today, this attitude means that the CCP and its leaders are perhaps more inclined to divert even further from past liberal reforms measures, even if China's membership in the World Trade Organization (WTO) and other multilateral and bilateral economic fora should temper drastic changes or oblige them to maintain certain market-based principles.

Many observers have noted this shift. The government owns almost all major banks and oil, telecommunications, and

media companies in China. Assets of SOEs total about $6 trillion, or 133 percent of China's gross domestic product (GDP).[24] The less-than-visible hand of the CCP is increasingly clawing back major portions of the Chinese economy: from championing command-economy–style monopolistic SOEs to reimplementing price controls.[25]

Domestically, Jialin Zhang writes that the state sector is making a comeback after decades of official encouragement of private enterprise. He suggests this backpedaling is jeopardizing China's relatively nascent market economy. In 2009, the CCP's revitalization plan for 10 industries encouraged SOEs to merge with medium and small enterprises.[26] Eventually, this increase in state-owned monopolies will limit market competition, weaken innovation and technological progress, further contribute to corruption, make investments riskier, and result in more bad loans—in short, it will become a greater impediment to China's continued growth. Notwithstanding the CCP's focus on SOEs, domestic private enterprises are still an important element of China's economic growth. Yet the state is increasingly diverting a greater portion of

resources away from private hands and allocating them to largely inefficient SOEs.

Internationally, the CCP's underhandedness and further movement away from previous liberalizing reforms through the championing of huge SOEs are affecting the perceptions and bottom lines of foreign firms. For example, foreign car makers see Beijing's push for joint ventures as nothing more than a "technology shakedown" to gain the capability and eventually become rivals. The actions of the CCP risk choking off future foreign investment and technologies that are necessary for China's continued growth. "There is still a lot of optimism, but there are industry leaders talking about the challenges of doing business in China in a way they would not have 10 years ago."[27] These challenges are increasingly painting China as an economic pariah. Given this unfriendly business environment, some international firms are reluctantly giving up on the prospect of investing in China despite the size of China's domestic market and its potential for significant returns, unquestionably to each party's detriment.

What could possibly have caused CCP leaders to depart from reforms that permitted

the party to lead their people out of poverty, regain national pride, and reestablish China as a regional and potential global power? Why would they move backward to a more centrally controlled economy that has no historic long-term precedents of success, but only misery and failure? The answer lies in the party's top priority: to remain in power. The party leadership needs to maintain social stability; leaving continued economic growth to the whims of the market is a risk that the CCP is apparently unwilling to take. Nowhere is this reversal better reflected than in the state's increased role in the allocation of resources through state-owned financial institutions.

China's Weak Financial System. Ownership of financial institutions is dominated by the state, leaving one to question the financial sector's ability to serve the private sector and whether lending decisions are based purely on commercial considerations or the whims of the party.[28] McGregor remarks that Chinese banks are not just commercial institutions; they are also "instruments of national economic policy."[29] It is revealing that in 2009, when confronted with possible major economic decline, the CCP ordered the state-owned and "controlled"

UN Secretary-General meets with representatives of UN agencies in China comprising the UN Country Team in Beijing

banks to further open their already wasteful lending spigots. Banks lent nearly 50 percent more in 6 months than they had in all of 2008. However, the incestuous relationships that SOEs had with their financial confreres through their party affiliations helped them soak up a vast majority of the funds, leaving household consumers and private enterprises with just 15 percent.[30] Zhang adds that fewer than 10 huge conglomerates provide 80 percent of the profits earned by centrally controlled SOEs, leaving most other SOEs relying on government subsidies and credits to survive, and also increasing structural imbalances in the economy. The CCP may hope in "Chinese exceptionalism," but history indicates that governments have exceptionally poor track records in allocating resources efficiently.

In 2009, Derek Scissors of the Heritage Foundation speculated that the CCP's obsession with growth might overheat the economy. Over the previous 4 years, the CCP directed the lending of trillions of dollars through its banks, primarily to SOEs. With today's inflationary pressure in China and probable increase of nonperforming loans that were extended to unprofitable SOEs, Scissors may be getting an answer to the rhetorical question he raised 2 years ago: whether state-directed investment can increase by 25 to 30 percent every year without "crippling waste and a warped, fragile economy."

This waste is often translated into increased corruption along with its associated bedfellows of feeble government regulatory enforcement and substandard quality. These conditions also contribute to China's questionable economic condition and point to serious systemic shortfalls in governance.

Corruption, Substandard Quality, and Slack Regulatory Enforcement. "Made in China" has an automatic, yet justifiable, negative connotation. The poor life expectancy of Chinese products is attributed to shoddy craftsmanship, dismal quality control, or poor regulatory oversight. Not only are the well-noted phenomena of recalls and poor performance having a negative economic impact on companies and individuals that market and purchase Chinese goods; there are also health and safety risks. Corruption feeds these bad practices in production as manufacturers bribe local officials to turn a blind eye on otherwise well-established guidelines and standards.

In 2007 alone, the U.S. Food and Drug Administration issued recalls or warnings on pet food, toothpaste, and farm-raised seafood—all from China. More serious health issues occurred in 2008: poorly manufactured heparin (an anticoagulant) resulted in 246 deaths between January 2007 and May 2008, and contaminated infant

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China is second only to the United States in its share of billionaires

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formula required the recall of products containing milk imported from China.[31] The Consumer Product Safety Commission has also issued numerous alerts and recalls on products from China.[32]

Even as corruption weighs on the domestic economy, it also negatively impacts U.S. investment decisions in China. Extensive government approvals are required for even the most routine processes, including those in banking, finance, government procurement, and construction.[33] Corruption is also alleged to be pervasive among senior officials and their family members, who are rarely investigated. When this level of systemic corruption and slack government oversight that produces unsafe products or environmental conditions is coupled with CCP-led financial and economic cronyism in an increasingly SOE-focused economy, it cannot bode well for long-term growth and efficiencies. It can also incite outrage and unrest among the masses.

Inequality and Unrest. "The correct leadership of CCP Central Committee and State Council, local government at all levels were in accordance with the scientific concept of development and building a harmonious socialist society."[34] Notwithstanding the CCP's "correct" leadership, China's inequities continue to widen. The contradictions that define China cannot be more pronounced than in the income inequalities within a so-called communist state. Amazingly, China is second only to the United States in its share of billionaires. Yet while China's economic boom years between 1997 and 2007 birthed many of its billionaires, the share of workers' wages fell from 53 percent of GDP to 40 percent.[35]

Inequalities and other social ills are causing an increase in domestic unrest and strikes. Most of the unrest is linked

either directly or indirectly to corruption, pollution, land seizures, or the impression among the rural poor that others are getting rich because they have connections with government officials. Francis Fukuyama suggests that China's growing inequalities may lead to a revolt of the middle class, which finds its aspirations stymied.[36] Regardless of the sources of unrest, they are becoming more frequent, larger, and more violent. It is undoubtedly disturbing for CCP leaders and adds to the growing list of challenges to stability, party control, and sustained economic growth.

Recommended U.S. Courses of Action

In welcoming President Hu Jintao to America in January 2011, President Barack Obama stated:

We have an enormous stake in each other's success. In an interconnected world, in a global economy, nations—including our own—will be more prosperous and more secure when we work together. The United States welcomes China's rise as a strong, prosperous and successful member of the community of nations. Indeed, China's success has brought with it economic benefits for our people as well as yours, and our cooperation on a range of issues has helped advance stability in the Asia Pacific and in the world.[37]

President Obama's comments reflect a pragmatic reality about the interdependent nature of Sino-American relations and the need for continued cooperation. Yet there is a growing number that clamor for more aggressive responses, such as a policy of containment. America's preeminent realist, John Mearsheimer, suggests that "U.S. interests would be best served by slowing Chinese growth rather than accelerating it."[38] Though China's continued growth is not necessarily inevitable, for the United States to actively seek to contain or prevent it would be foolhardy and risks backfiring.[39] Joseph Nye warns that "the best way to make an enemy of China is to treat it like one." In either case, the CCP leadership seems to be doing a good job of stifling growth without American interference.[40]

Rather than pursuing vague confrontational policies that risk cementing an adversarial bilateral relationship, U.S. policymakers would be better served to heed the Chinese proverb "The ox is slow but the earth

is patient" and simply bide time while adhering to and encouraging the very broad principles that define America: liberal democracy and free markets. McGregor intimates potential fissures in the CCP's continued grip on power as its ability to transform with rapid change fails to keep pace with the demands of an upwardly mobile and divergent society. Bilateral efforts should focus on the constructive: using tools of statecraft to encourage positive behavior and judiciously using public condemnations, which do little to change undesirable behavior or advance cooperation.

The United States should thus seek cooperative policies that would encourage China's leaders to return to the liberalizing reform efforts of the past as the best path for continued economic growth. This recommendation does not dismiss the numerous imbalances in Sino-American trade and finance arenas that require reconciliation: currency, capital exchange, and trade distortions associated with an undervalued yuan; and legitimate complaints by U.S. manufacturers regarding their trade relations with Chinese firms or government officials, including intellectual property rights protections, China's discriminatory practices, industrial policies to subsidize and protect domestic firms from foreign competition, and health and safety concerns associated with Chinese products.

But these challenges require scalpel-like redress as opposed to cutlass-like generalizations waved about willy-nilly, creating hostile domestic political environments in the United States and China. A negatively charged atmosphere limits maneuverability for those striving to resolve problems while emboldening nationalistic entrenchment on both sides of the Pacific. As such, the United States should pursue adjudication processes available through the WTO or other fora.

Unoccupied building under construction collapsed in Minxing District of Shanghai when flood prevention wall failed

Flickr

Not only does this assist in resolving issues in a relatively nonconfrontational manner, but it also further exposes and impresses upon China the good order obtained through international rule of law.

The U.S.-China Strategic and Economic Dialogue initiated under the George W. Bush administration and continued by President Obama is an excellent example of a useful forum to discuss and advance the bilateral economic issues and challenges listed above. Used appro-

these challenges require scalpel-like redress as opposed to cutlass-like generalizations waved about willy-nilly, creating hostile domestic political environments in the United States and China

priately, the dialogue can grow into a meaningful dispute resolution mechanism short of bringing cases before the WTO, or to advance cooperative programs and policies that would facilitate mutually beneficial trade relations between private U.S. and Chinese firms.

It seems that whenever the United States slips economically, a new chorus of pundits forms, chanting its fall. During the economic downturns of the 1950s, it was the Soviets who were about to "crush" America. During the cyclical declines of the 1990s, a neo-axis of powers was aligned to overtake the United States in the name of Japan and Germany. Today, with chances of a robust recovery encumbered by historically high debt levels, China is proclaimed as the new emerging threat and dominant global power while the United States goes into its proverbial tailspin, taking the liberal market along with it. Alarmists assert myths and half-truths about Chinese economic perils to the West and propose harsh recommendations that would chart a collision course for Sino-American relations.

Yet the United States continues to grow economically and demographically. It continues to provide its citizens with significant wealth, freedoms, and security. In short, one finds the country on an upward, albeit flattening, trajectory. At the same time, China is confronted by a growing list of economic challenges. To make matters worse, China's

leaders, bolstered by three decades of success and perceived Western decline, are moving further away from the free-market reforms that guided China's reemergence in the first place. The CCP is unwittingly jeopardizing continued growth and, as a consequence, the very stability that it so desperately desires to retain power. A Chinese society that enriches itself in a stable economic environment is more likely to transition toward peaceful democratic political reforms rather than ones borne out of chaos.

America should thus seek solutions and policies to the mutual benefit of its economic partners, of which China is arguably the most important. The philosophical basis for such an approach is not established on some elusive notion of American benevolence, but rather on the free-market liberal economic concepts and principles that have been the economic and foreign policy bedrock of the United States for generations. It would be unfortunate to depart from these principles because of unfounded fears or negative emotions. The United States has been down that road before, and it should be leery of policy proposals that repeat past mistakes, do not address the real issues of the day, or make a mildly antagonistic Sino-American relationship worse. **JFQ**

NOTES

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[4] See Bruce Bueno de Mesquita and George Downs, "Development and Democracy," *Foreign Affairs* (September–October 2005); or Minxin Pei, *Economic Institutions, Democracy and Development*, Carnegie Paper, World Bank Conference, February 1999.

[5] Paul Krugman, "Competitiveness: A Dangerous Obsession," *Foreign Affairs* (March–April 1994).

[6] Fareed Zakaria, *The Post American World* (New York: W.W. Norton & Co., 2008), 20; and Martin Wolf, *Why Globalization Works* (New Haven: Yale University Press, 2004), 82.

[7] Julie Jiang and Jonathan Sinton, "Overseas Investments by Chinese National Oil Companies," International Energy Agency Information Paper, February 2011. Erica Downs also confirms that "contrary to conventional wisdom, China's NOCs are not merely puppets of the Chinese party-state that are expanding internationally for the sole purpose of assuaging Beijing's concerns about energy security." See Erica S. Downs, "Who's Afraid of China's Oil Companies?" Brookings Institution, available at <www.brookings.edu/~/media/Files/rc/papers/2010/07_china_oil_downs/07_china_oil_downs.pdf>.

[8] The International Energy Agency reports that only a portion of its equity oil was actually shipped to China and was sold to local or international markets instead. See Jiang and Sinton.

[9] Downs.

[10] Jonathan Pollack, "Energy Insecurity with Chinese and American Characteristics," in *China's Energy Strategy,* ed. Gabriel Collins et al. (Annapolis, MD: Naval Institute Press, 2008), 445.

[11] See, for example, Ken Miller's "Coping with China's Financial Power," *Foreign Affairs* (July–August 2010).

[12] China owns $1.16 trillion of a total $14.16 trillion American debt, Japan owns $882.3 billion, and the United Kingdom is the third largest foreign holder of U.S. treasuries at $272.1 billion; U.S. Treasury Department, available at <www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt>.

[13] Arthur Kroeber, "Five Myths About China's Economy," *The Washington Post*, April 11, 2010; Derek Scissors, "10 China Myths for the New Decade," *Backgrounder*, The Heritage Foundation, January 28, 2010.

[14] Aline van Duyn, Michael Mackenzie, and Nicole Bullock, "U.S. Treasury Sells Negative-Rate Bonds," *Financial Times*, October 26, 2010, available at <www.ft.com/cms/s/0/dfa5ee7c-e08e-11df-abc1-00144feabdc0.html#ixzz1GLwcFMVX>.

[15] Indira A.R. Lakshmanan, "Clinton Urges China to Keep Buying U.S. Treasury Securities," *Bloomberg*, February 22, 2009, available at <www.bloomberg.com/apps/news?pid=newsarchive&sid=apSqGtcNsqSY&refer=news>.

[16] Chinese leaders are concerned about the dollar's staying power in light of the economic decline and corresponding large increases in American deficit spending and debt accumulation. China's Prime Minister Wen Jiabao has expressed concern in the past: "We have lent a huge amount of money to the U.S. Of course we are concerned about the safety of our assets. To be honest, I am definitely a little worried." See Keith Bradsher, "China Grows More Picky About Debt," *The New York Times*, May 20, 2009.

[17] For reasons mentioned above, it seems China will continue to purchase U.S. treasuries. Should China be tempted to dump its current U.S. debt holdings, not only would it be painful for the United States in higher interest rates, but the price China would obtain from such a sale would be deeply discounted, at which time the U.S. Federal Reserve would invariably purchase back the debt at a significantly reduced cost; Derek Scissors, presentation to National War College Chinese field studies class, January 20, 2011.

[18] Daniel Drezner, "Bad Debts," *International Security* 34, no. 2 (Fall 2009).

[19] Paul Krugman, "The Myth of Asia's Miracle," *Foreign Affairs* 73, no. 6 (November–December 1994).

[20] Jonathan D. Spence, *The Search for Modern China* (New York: W.W. Norton & Co., 1999), 619.

[21] Laurence Chandy and Geoffrey Gertz, "Poverty in Numbers: The Changing State of Global Poverty from 2005 to 2015," Policy Brief 2011–01, Brookings Institution, 12, available at <www.brookings.edu/~/media/Files/rc/papers/2011/01_global_poverty_chandy/01_global_poverty_chandy.pdf>.

[22] The title of Stefan Halper's book *The Beijing Consensus: How China's Authoritarian Model Will Dominate the Twenty-First Century* (New York: Basic Books, 2010) is sufficient for understanding his claims.

[23] Scissors, presentation to National War College class.

[24] Compare China's 133 percent of gross domestic product to 28 percent for France, arguably a Western economy with one of biggest state sectors; Jason Dean, Andrew Brown, and Shai Oster, "China's 'State Capitalism' Sparks a Global Backlash," *The Wall Street Journal*, November 16, 2010.

[25] Scissors notes the State Council "sets and re-sets the prices for all key services: utilities and health care, education, and transportation" as well as control over energy and grains (food); Derek Scissors, "Liberalization in Reverse," The Heritage Foundation, May 4, 2009.

[26] In the early 1990s, Beijing held onto the major state-owned enterprises (SOEs) while letting the smaller ones sink or swim. In 1999, the party announced SOEs could only remain in three industries: national security, natural resources, and those that produced public goods and social welfare. This shift resulted in the share of industrial production for SOEs falling from 80 percent in 1999 to 30 percent in 2008.

[27] H. Schneider, "China Has 'Thumbed Nose' at Spirit of Free Trade," *The Washington Post*, January 18, 2011.

[28] Richard Herd, Charles Pigott, and Sam Hill, "China's Financial Sector Reforms," *OECD White Paper*, February 1, 2010, available at <www.oecd.org/official-documents/displaydocumentpdf/?cote=eco/wkp(2010)3&doclanguage=en>.

[29] Richard McGregor, *The Party: The Secret World of China's Communist Rulers* (New York: Harper, 2010), 52.

[30] Ibid., 68.

[31] The Chinese government reported that 6 children had been killed and 294,000 sickened (51,900 requiring hospitalization); Wayne Morrison, *China-U.S. Trade Issues* (Washington, DC: Congressional Research Service, January 7, 2011), 28–29.

[32] Ibid.

[33] The PRS Group, Inc., *China Country Report* (update), August 10, 2010, 15.

[34] Statistical Communiqué on Labor and Social Security Development in 2008, National Bureau of Statistics of China, May 22, 2009, available at <www.stats.gov.cn/english/newsandcomingevents/t20090522_402560900.htm>.

[35] Richard McGregor, 56.

[36] Francis Fukuyama, "Is China's Regime Next to Fall?" *The Wall Street Journal*, March 12, 2011.

[37] Barack H. Obama, "Remarks by President Obama and President Hu of the People's Republic of China at Official Arrival Ceremony," January 19, 2011, available at <www.whitehouse.gov/the-press-office/2011/01/19/remarks-president-obama-and-president-hu-peoples-republic-china-official>.

[38] John J. Mearsheimer, "The Future of the American Pacifier," *Foreign Affairs* 80, no. 5 (September–October 2001).

[39] Robert Art, "The United States and the Rise of China: Implications for the Long Haul," *Political Science Quarterly* 125, no. 3 (Fall 2010), 362.

[40] Ibid.

USS *Ronald Reagan* leads multinational formation of ships during interoperability exercise Rim of the Pacific 2010

U.S. Navy (Scott Taylor)

U.S.-China Relations
NO NEED TO FIGHT

By D A N I E L S. L A R S E N

At a recent Canadian defense conference, a speaker from the U.S. Naval War College demonized China and concluded with a phrase often attributed to Leon Trotsky: "You may not be interested in war, but war is interested in you." This unbalanced and unsophisticated approach is a hallmark of conflict theorists who maintain there simply has to be a fight between the United States and China.

Led by the offensive realism of John Mearsheimer, the "let's fight" approach conflicts with stated U.S. positions, which seek a "positive, constructive, and comprehensive relationship with China."[1]

The place and role of China on the world stage are not a new concern. In 1972,

as President Richard Nixon traveled to China, he identified three things China wanted: "1. Build up their world credentials; 2. Taiwan; and 3. Get the U.S. out of Asia." His thoughts about what the United States and China both wanted included: "1. Reduce danger of confrontation and conflict; and

Colonel Daniel S. Larsen, USA, wrote this essay while a student at the U.S. Army War College. It won the Strategy Article category of the 2011 Chairman of the Joint Chiefs of Staff Strategic Essay Competition.

President Obama talks with Chinese President Hu Jintao after bilateral meeting at G20 Summit

White House (Pete Souza)

2. a more stable Asia."[2] That same year, Zbigniew Brzezinski wrote about a "2-1/2 powers world," where the United States and Soviet Union were the 2, and China was the 1/2, wielding "considerable political leverage" and whose impact was to "increase uncertainty, to complicate planning."[3] Today, with a geostrategic emphasis shift from Europe to the Asia-Pacific region, the world power situation is somewhat changed—the United States and China weigh in at one each, and Russia weighs in at one-half.

This means we have to deal with China. If our political and strategic approach is to demonize it, we risk a self-fulfilling prophecy. The Chinese are not infallible, all-powerful, or malevolent. China is a normal rising power with unique historical legacies, and we must seek engagement rather than vilification. The United States should not approach engagement with trepidation. China has significant domestic constraints that will limit its development as a global military power. China is more likely to be a regional military power; therefore, it will be neither adversary nor partner.[4]

Although almost everything seems to be made in China today, China's economy and resources are not unlimited and its stability is not guaranteed. Nationalism, demographic pressures and premature aging, increasing social pressures, regime survival, environmental degradation, corruption, and limited resources will test China's ability to continue its phenomenal economic gains and rise to global power and leadership. In an influential *Foreign Affairs* article, Zheng Bijian noted that because of China's large population, "Any small difficulty in its economic or social development . . . could become a huge problem."[5] Zheng posits that it will be 2050 before China will be a "modernized, medium-level developed country."[6]

While the Chinese may be lowballing their estimates and definitely their ambitions, it seems unlikely that they can indefinitely keep up their economic success, which is the foundation for their military development and modernization. The National Intelligence Council estimates that the "pace of China's economic growth almost certainly will slow, or even recede, even with additional reforms to address mounting social pressures."[7] At that point, Chinese leadership will face difficult choices regarding funding allocations for military versus economic and social development. If Zheng is right, stability could take precedence over military modernization in order to avoid huge problems rippling through more than a billion people.

Predictions of the heights to which Chinese power can ascend vary widely. Robert Kaplan has called China an "über-realist power" that is "beginning to turn outward."[8] In 1968, Hans Morgenthau said, "China is the most powerful nation of the mainland in Asia and potentially the most powerful nation in the 4th world."[9] While Morgenthau's mainland Asian prediction echoes true today, others are less enamored with China's potential. Robert Jervis puts Russia and China in close company when he says they "lack many of the attributes of great powers" and "can pose challenges only regionally."[10] Mearsheimer predicts an "aggressive" China "determined to achieve regional hegemony."[11] And *regional* is the key word.

In the end, China is tougher to predict than most—almost everything except its economy is virtual, future, and opaque. Economically, it is already a global power. Militarily, it is a mainland Asia and regional Asia-Pacific power, but it is doubtful China will become a global military power. The People's Liberation Army (PLA) is untested, "constrained largely by the lack of robust strategic lift capabilities,"[12] needs modernization, and is not on par with the U.S. military. Technological discrepancies between the U.S. and Chinese militaries will require that China spend more to catch up or leap ahead. To correct perceived discrepancies, the PLA has focused on new capabilities such as area denial, blue-water naval forces, and limited power projection.[13] These efforts will continue, but they remain dependent

China is a normal rising power with unique historical legacies, and we must seek engagement rather than vilification

on Chinese economic performance and domestic constraints. China cannot buy every piece of military kit it wants any more than it can buy all of Eurasia or the Eastern Hemisphere.

In the meantime, the United States cannot hedge its bets toward the optimistic side. If China arrives in mid-century as a "modernized, medium-level developed country," it will only be medium level using fuzzy per capita math. Its military will be significantly more powerful than a medium-level country. Therefore, we must continue to "monitor China's military modernization program and prepare accordingly to ensure

that U.S. interests and allies, regionally and globally, are not negatively affected."[14]

The United States and China will have to interact because China is becoming a regional power, and that rise carries with it associated geostrategic and economic shifts. There are numerous areas for cooperation, such as nuclear counterproliferation and counterpiracy, but there is no utilitarian harmony principle here; there will be divergent interests.[15] Even so, we cannot assume that every divergent Chinese interest derives from an underlying malign intent. M. Taylor Fravel notes

> *we do not have a choice on whether we will deal with China, but we do have a choice on how we deal with China*

that, so far, China has "pursued foreign policies consistent with status quo and not revisionist intentions."[16] Opportunity costs would increase were China to turn aggressive regionally or globally, assuming Chinese foreign policy follows a rational actor model. Some Chinese leaders and actors may not act rationally, however. In that event, these actors' worldviews and their misperceptions and miscalculations could lead to an arms race, conflict spirals, and a security dilemma, not to mention "signaling China's 'type' as an aggressive rising power."[17]

Regardless of Chinese intentions, the United States should follow the "traditional American interest in the maintenance of the balance of power in Asia."[18] According to Nicholas Spykman in 1942, this interest "predates the threat of the emergence of a great naval empire across the Pacific. It was originally inspired . . . by anxiety about our position as an Asiatic power."[19] While trying to maintain the balance of power in Asia, the United States should understand how a conflict with China might develop. Such knowledge will help make it possible to work with China to minimize potential conflicts. According to Kenneth Waltz, "The search for causes [of conflict] is an attempt to account for differences."[20] These differences could include competing spheres of influence, competition for resources, and disagreement over the rules

of the system and who makes them, as well as issues of pride or prestige. Of these differences and issues, the last may be the most important and dangerous regarding Taiwan. In 1968, Morgenthau assessed the issue of Taiwan as being the "most likely casus belli between the United States and China."[21] Knowing this, can the United States work with the Chinese and Taiwanese to ameliorate tensions and move toward a political settlement, while sustaining a vibrant democracy in Taiwan?

There is no need to fight with China. As President Obama has said, the "relationship has not been without disagreement and difficulty. But the notion that we must be adversaries is not pre-destined."[22] President Nixon was more hopeful and specific: "We must now ensure that the one quarter of the world's people who live in the People's Republic of China will be and remain not our enemies but our friends."[23] We do not have a choice on whether we will deal with China, but we do have a choice on how we deal with China.

The Chinese will not get President Nixon's third observation regarding what China wants—the United States out of Asia—because the United States is also a Pacific nation. Although always preparing for the possibility of conflict, the United States needs to identify choices that will engage the Chinese, establish confidence, and enhance security, while binding China to the international system. The adversarial tenets and predictions by conflict theorists are to be closely interrogated, albeit not wholly ignored. We need to educate our future senior military leaders, not with a diet of hyperbolic enemy images, but instead with a broad base in international relations and a realistic understanding of China's potential role, power, and challenges. We must avoid a narrow focus on offensive realism and power transition theories, joined by the wrongheaded belief that war is inevitably interested in us. As Robert Jervis so wisely notes, "Expectations of peace close off important routes to war."[24] We should not let a constructed enmity lead us down the wrong route to our future with China. **JFQ**

NOTES

[1] *National Security Strategy* (Washington, DC: The White House, May 2010), 43.

[2] Jim Mann, *About Face: A History of America's Curious Relationship with China from Nixon to Clinton*, 1st ed. (New York: Knopf, 1999).

[3] Zbigniew Brzezinski, "Opinion: The Balance of Power Delusion," *Foreign Policy*, no. 7 (July 1972), 56.

[4] Zbigniew Brzezinski, *The Geostrategic Triad: Living with China, Europe, and Russia* (Washington, DC: Center for Strategic and International Studies, January 2001), 9.

[5] Zheng Bijian, "China's 'Peaceful Rise' to Great-Power Status," *Foreign Affairs* 84, no. 5 (2005), 19.

[6] Ibid., 21.

[7] U.S. National Intelligence Council, *Global Trends 2025: A Transformed World* (Washington, DC: U.S. Government Printing Office, 2008), 49.

[8] Robert D. Kaplan, "The Geography of Chinese Power," *Foreign Affairs* 89, no. 3 (June 2010), 24.

[9] Hans J. Morgenthau, "The United States and China," *International Studies* 10, no. 1 (January 1968), 23.

[10] Robert Jervis, "Theories of War in an Era of Leading-Power Peace," *The American Political Science Review* 96, no. 1 (March 2002), 2.

[11] John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001), 402.

[12] M. Taylor Fravel, "International Relations Theory and China's Rise: Assessing China's Potential for Territorial Expansion," *International Studies Review* 12, no. 4 (December 2010), 509.

[13] Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China 2010* (Washington, DC: Department of Defense, 2010), 29–33.

[14] *National Security Strategy*, 43.

[15] Kenneth N. Waltz, *Man, the State, and War: A Theoretical Analysis* (New York: Columbia University Press, 1959), 88.

[16] Fravel, 506.

[17] Ibid., 510.

[18] Hans J. Morgenthau, "The Roots of America's China Policy," *The China Quarterly*, no. 10 (April 1962), 46.

[19] Nicholas J. Spykman, *America's Strategy in World Politics: The United States and the Balance of Power* (New York: Harcourt, Brace, 1942), 155.
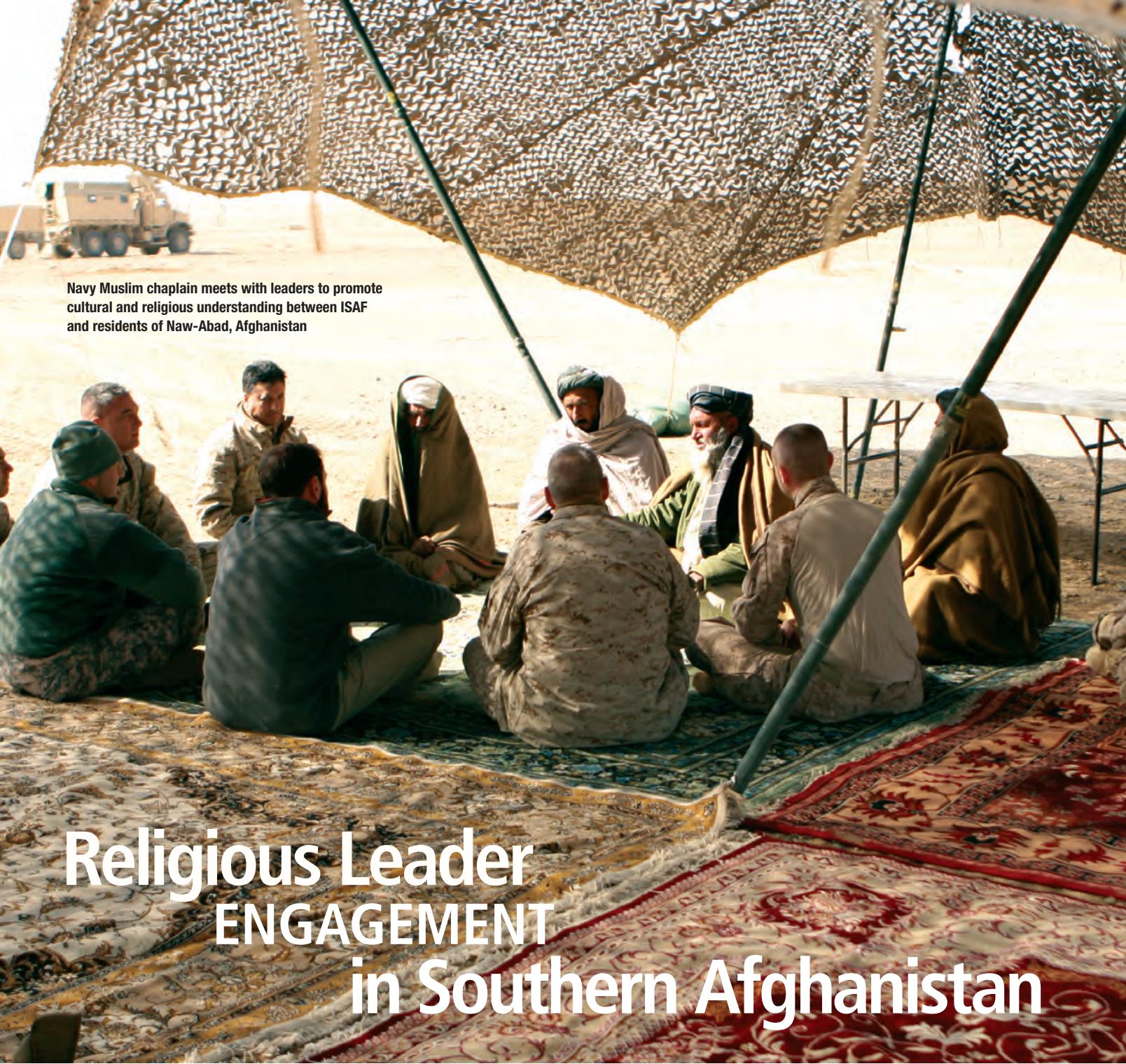
[20] Waltz, 29.

[21] Morgenthau, "The Roots of America's China Policy," 26.

[22] Department of Defense, "U.S.-China Defense Background," January 8–14, 2011, available at <www.defense.gov/home/features/2011/0111_gates1/china.aspx>.

[23] Richard M. Nixon, "Resignation Speech," August 8, 1974, available at <www.pbs.org/newshour/character/links/nixon_speech.html>.

[24] Jervis, 3.

Navy Muslim chaplain meets with leaders to promote cultural and religious understanding between ISAF and residents of Naw-Abad, Afghanistan

U.S. Marine Corps (Mary E. Carlin)

Religious Leader
ENGAGEMENT
in Southern Afghanistan

By ALEXS THOMPSON

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nteraction with religious leaders and institutions in Afghanistan has been inconsistently addressed by foreign military, diplomatic, and development officials. Recent efforts to correct that trend in southern Afghanistan make it clear that a sustained, consistent, well-thought-out religious leader engagement program supports and advances the traditional components of counterinsurgency (security, development, and governance). Systematic engagement of religious leaders at the provincial, district, village, and farm levels created another line of communication whereby the International Security Assistance Force (ISAF) promoted its mission of stability and Afghans voiced their needs and commitment to a stable future.

One of the most pressing observations made about U.S. military efforts in the 21st century has been the need to leverage culturally specific factors in support of counterinsurgency (COIN) efforts. One of the most important—and underemphasized—aspects of Afghan society is the importance of religious leaders in countering anti-Afghan rhetoric.[1] This article examines the role of religious leaders and institutions in Afghan society and identifies them as a crucial dimension to stability operations in Afghanistan. It is argued that religious leader engagement is a core factor for expressing U.S. objectives, mitigating the effects of kinetic operations, and legitimating the Government of the Islamic Republic of Afghanistan (GIRoA) through specifically Afghan modes of discourse and participation. The observations and conclusions presented are informed by the author's personal experiences in Afghanistan and his interviews with others who have implemented religious leader engagement programs in southern Afghanistan. Religious leaders, and especially those at the district and village level who are regarded as representatives of their communities, are powerbrokers whose position and authority situate them as key partners for stability and who should not be ignored by the United States or ISAF.

Roles of Religious Leaders

Religious leaders and institutions play a significant role in how the legitimate GIRoA describes itself; the same is true for the enemies of Afghanistan.[2] The primary question, then, is not whether religious leaders will continue to play a significant role in the future of Afghanistan, but rather how those leaders and the institutions they represent can be fully integrated into stable, effective political processes. The highest priority is not simply to provide counter "-religious"

ideology, but to counter specifically "violent" religious ideology that quells the voice and will of the Afghan people.[3] Undermining the impact of violent religious rhetoric, however, is primarily the responsibility of Afghans; they should encourage, publicize, and sustain the incorporation of religious language, individuals, and institutions in their own vision of the future. One of the ways that the U.S. Government/ISAF can support Afghans in this endeavor is to promote sustained programs of religious leader engagement.

As a starting point for engaging religious leaders, it is prudent to envision a future Afghanistan where religious institutions and leaders are promoted as essential aspects of the social fabric—not eliminated or begrudgingly accepted. Even those religious leaders who currently support the enemies of Afghanistan find themselves seeking reconciliation with GIRoA from time to time, and pursue full participation in the political process.[4] If religious leaders will be prominent in Afghanistan's future, it

> *it is prudent to envision a future Afghanistan where religious institutions and leaders are promoted as essential aspects of the social fabric*

behooves the U.S. Government and ISAF to identify religious leaders who are amenable to dialogue and integration with GIRoA; this will set the conditions for the marginalization of radical religious leaders in favor of those who support stable political processes. It is of tremendous importance, then, that religious leaders from all dogmatic, geographic, and linguistic communities be engaged in consistent public dialogue so that Afghans can responsibly choose how they wish to advance a narrative that preserves their religious heritage and ensures long-term, sustainable political processes. Such a wide-ranging program would require coordination across the security, development, and governance spectra with reliable leadership from GIRoA and ISAF. While it may be clear that engaging religious leaders is a critical component of stability operations, what is less clear is how those engagements can be conducted in a way that does not undermine key ISAF objectives or alienate large swathes of the population. What follows are several examples of religious leader engagement in Helmand Province and recommendations for how religious leader engagement can be broadly conceptualized so that it respects local variations and supports stability operations.

Engagement in Southern Afghanistan

Beginning in October 2009, Lieutenant Colonel Patrick Carroll, USMC (Ret.), and Patricio Asfura-Heim began to develop a religious leader engagement program for II Marine Expeditionary Brigade (IIMEB) that addressed the tendency for religious leaders to be ignored in military and diplomatic

Army chaplain thanks mullahs who attended shura to develop plans for achieving peace for residents of Paktika Province, Afghanistan

U.S. Army (Joshua A. Chittim)

Navy chaplain presents digital Koran to teacher at daycare facility during volunteer community relations visit in Kabul, Afghanistan

engagements. Carroll explained that in the early period of his deployment, he traveled to six districts in Helmand Province to assess the effectiveness of local government structures. He went on to write, "My conclusion was that we were thoroughly partnered with the Afghan district governor and some of the officials from his *tashkiel* [organization] or other provincial line ministry *tashkiels*. . . . When I asked about the engagement with influential religious scholars, such as mullahs or *ulema* [experts in Islamic doctrine] . . . I heard comments like 'The mullahs are not that important.'"[5]

In the wake of such prevalent dismissal of religious leaders, Carroll observed that even if mullahs served *only* a religious role, the primary argument of the Taliban is that they are pious individuals fighting foreign infidels, and therefore "the most credible voices to counter the Taliban's rhetoric were moderate mullahs themselves; i.e., Islamic religious leaders who did not believe in the Taliban's extremist interpretations of the Qur'an, who would support . . . GIRoA

and who were at least neutral—possibly positive—to the presence of ISAF."[6] Carroll highlighted one of the most important aspects of religious leader engagement: it is not necessary that religious leaders support ISAF (but they must at least be neutral toward it) so long as they support GIRoA and legitimate governmental processes. Such

an attitude reflects the necessity for Afghans to conceptualize and implement the future of their country; how religious leaders and institutions function in Afghan society is an Afghan question.

In support of his observations, Carroll and Asfura-Heim began a project to reintegrate religious leaders in their provincial religious organizations such as the

Helmand Ulema Council and the office of the Helmand Director of Hajj. Carroll and Asfura-Heim found that religious leaders in southern Afghanistan were open to direct engagement and had specific grievances that could be addressed through greater integration of religious leaders. Primary among the concerns of these religious

religious leaders were key powerbrokers whose input should be included in discussions about economics, security, and development projects

leaders was that they had been marginalized by the central government and had been sidelined in community discussions that did not directly address religious issues.[7] Given their personal experience with religious leaders at various levels of Afghan society, Carroll and Asfura-Heim concluded that religious leaders' impact was not confined to religious issues; religious leaders were

key powerbrokers whose input should be included in discussions about economics, security, and development projects. Integrating religious leaders at the provincial level proved fairly simple with Carroll and Asfura-Heim's ability to travel to provincial headquarters; what was lacking, however, was consistent interaction with religious leaders at the subprovincial level.

Attention to subprovincial religious leaders was further strengthened with the arrival of a U.S. Navy Muslim chaplain in February 2010. Chaplain "Salam," whose name has been withheld, is a naturalized U.S. citizen and a naval chaplain who was serving in the Washington, DC, area when he was asked to come to Afghanistan.[8] Based on his past experience with the U.S. military and foreign Muslim officials, it was determined that Chaplain Salam would be the ideal person to extend the reach of the religious leader engagement program. Chaplain Salam and Chaplain Philip Pelikan did not act alone, however; they had the support of the IIMEB commander. In recognition of the important role that religious leaders and institutions play in the overall COIN effort, then–Brigadier General Lawrence Nicholson, commanding general of IIMEB, inquired whether it would be possible and beneficial to facilitate the visit of a Navy Muslim chaplain to Afghanistan. Chaplain Pelikan knew such a person and undertook a 6-month process to bring him to Afghanistan.[9]

In an article he wrote for *Small Wars Journal*, Chaplain Pelikan summarized Nicholson's intent:

By order of the Commanding General, 2d Marine Expeditionary Brigade (MEB), Afghanistan, the Command Chaplain and a Muslim Chaplain (if obtainable), along with appropriate political specialists, governance advisors, and necessary security, were to engage with Islamic leadership in Helmand and Farah Provinces in discussions to enhance the relationship with key religious leaders and the communities in which they serve in order to convey the good will and otherwise positive intentions of U.S. Government and ISAF (International Security Assistance Force)/ NATO [North Atlantic Treaty Organization] forces operating in the region in conjunction with the Government of the Islamic Republic of Afghanistan (GIRoA) and its military and police forces.[10]

In effect, Nicholson called for a systematic engagement of local religious leaders with the knowledge that these leaders are key nodes in the social network and have increased capacity to spread the U.S. Government/ISAF message of support for GIRoA and rejection of violent religious ideology.[11] Command support is yet another crucial factor for successful reintegration of religious leaders. The logistical support requirements and the sometimes prevailing attitude that religious leaders are not of central importance to building stability can hamper the attempt to engage religious leaders. Afghan religious leaders primarily serve the role of a mediator; as trusted leaders of their local communities, they are local advocates to ensure that ISAF projects and intentions match those of the community. Concomitantly, as trusted partners to ISAF, Afghan religious leaders transmit and reinforce the ISAF message of security and effective governance.

In addition to calling for a systematic engagement plan with religious leaders, Nicholson offered a paradigm for understanding that their target audience was "little 't' Taliban." "Little 't' Taliban" were those who were lured into the Taliban with promises of power, money, and stability—for financial and social, not religious, reasons. If, Pelikan offered, local Afghan religious leaders could explain the ways that ISAF and GIRoA were working to bring stability and clarify the opportunities for local Afghans to participate in those programs, then it would be possible that Taliban rhetoric would be undermined. If U.S. military chaplains, and

Muslim chaplains in particular, could engage with religious leaders, then those religious leaders could act as trusted partners for participation in legitimate political, commercial, and religious institutions.[12] What Nicholson and Pelikan brought to the growing focus on religious leaders in Helmand was the value of military chaplains. It was not enough for provincial-level IIMEB individuals to meet with provincial-level religious leaders; there was a need for both groups to reach to the district and village levels where the message of stability has the most impact. The ability to extend to subprovincial levels was brought about most effectively through the work of military chaplains.

The introduction of a Muslim chaplain served as an "icebreaker" for many religious leaders in southern Afghanistan and fostered trust between ISAF and the tens of Afghans who traveled from remote villages for the engagements.[13] In particular, the religious leader engagement team would schedule their religious leader engagements such that the Muslim chaplain would open with brief remarks that were followed by an open discussion with local religious leaders. As one example, the effects of these discussions had significant positive effects in Golestan District, Farah Province: "[the engagements] enhanced the ability of the Marine Company Commander at the Golestan Forward Operating Base (FOB) to communicate with the locals, determine better ways to assist the community with their many 'quality of life' issues, and helped empower the local mullahs by connecting them with GIRoA through the Farah Provincial

Army chaplain offers prayer before lunch with Afghan National Army mullah at Forward Operating Base Ghazni

U.S. Air Force (Julie Brummund)

Director of Hajj."[14] There was certainly an atmosphere of religious camaraderie in the reports about these meetings, but the most important aspect was the ability of local IIMEB commanders to open new channels of communication through religious leaders and ensure that the needs of Afghans across the entire spectrum were being considered.

Other Perspectives

Rajiv Chandrasekaran, who reported on these events for the *Washington Post*, noted that IIMEB was one of just a few units in Afghanistan that made a concerted attempt to engage religious leaders as part of its campaign plan. Such a feat by the Marines stands as a testament to the religious and nonreligious impact of mullahs and other religious leaders in small, remote villages in southern Afghanistan. Chandrasekaran pointed out the impact of bringing one of only a few Muslim chaplains to southern Afghanistan: "At his [the Muslim chaplain's] first session with religious leaders in Helmand, the participants initially thought the clean-shaved [chaplain] was an impostor. Then he led the group in noontime prayers. By the end, everyone wanted to take a picture with him."[15] The benefit of involving a Muslim chaplain in this religious leader engagement program is undeniable: it bolstered existing relationships, weakened barriers to communication through shared language and ritual, and fostered new and enduring relationships with religious leaders at every level of Afghan society.

The U.S. contingent in Helmand was not the only group to consider the role of religious leader engagements, however. The United Kingdom (UK) delegation at the Helmand Provincial Reconstruction Team also constructed a religious leader engagement program in late 2009 that was intended to undermine Taliban propaganda by having religious leaders act as reliable mediators between ISAF and the Afghan people. As part of their efforts, the UK delegation invited a group of Afghan religious leaders to Great Britain; in response to their visit, one mullah said, "The Taliban tell everyone that Britain is an infidel nation hostile to Muslims, but the mullahs were able to see for themselves that in fact Britain is a tolerant country in which Muslims can build mosques and practice their religion peacefully."[16] The UK efforts, similar to those of the United States, aimed at discrediting the

Taliban by addressing the dominant source of their claim to legitimacy: piety.

By engaging religious leaders at every level, UK and U.S. representatives were able to disseminate the message of Afghan stability to the farthest reaches of their areas of responsibility with the face and voice of Afghans. For example, while visiting Bakwa District, Farah Province, the religious leader engagement team was approached by a mullah who wore the mark of the Taliban—a crescent moon and star tattooed on the right hand—who was deeply moved by the presence of Afghans and Americans praying together: "He told us that he was a Taliban *Mawlawi* [religious scholar] who taught in a Madrasa . . . just outside Bakwa. So tremendously impressed by our message, he stated, 'Before today I

the most important aspect was the ability of local commanders to open new channels of communication through religious leaders and ensure that the needs of Afghans were being considered

just thought that all Westerners were infidels and I was against you. But today I saw something that I'd never seen before. And I have changed my mind about Americans. I will work with you from now on.'"[17] In this way, Afghan religious leaders acted as force multipliers, strategic communicators, and trusted allies in the fight for stability. As more Afghan religious leaders are engaged, Afghans themselves will carry the message of responsible development, effective governance, and sustainable security.

Role of Chaplains

The involvement of chaplains was central to the success of the religious leader engagement program in southern Afghanistan, but the historic and doctrinal role of chaplains presents certain challenges for how these types of programs can be expanded. Chaplains have traditionally been charged with providing for the morale and spiritual well-being of their troops. As military operations have evolved in the 21st century, so have the responsibilities and expectations of chaplains; whether by personal abilities or requests from various partners, chaplains have been regularly involved in stability operations through engagement and support of local

populations. Chaplains may represent an ideal nexus for religious leader engagement programs because of their intimate knowledge of religious matters: "In the general conduct of counterinsurgency operations the religious aspect is often either overlooked or is simply thought of as something to shy away from because many people feel unqualified to discuss religion. We chaplains, however, are never ashamed to talk about religion. And our experience in this operation proved that the direct approach with the Afghan religious leaders was the right one."[18] Chaplains' commitment to religious ideals is an invaluable asset for developing relationships with local religious leaders, but that religious basis is a means by which to develop relationships that channel legitimate Afghan concerns from the lowest to the highest levels of Afghan society.[19] The designation of chaplains as noncombatants is another consideration for how they can participate in stability operations: "A potential controversy exists when a chaplain is asked for specific information from commanders or intelligence officers related to his interaction with local mullahs. Chaplains, as doctrinal noncombatants, could be placed in the awkward position of providing targeting information to commanders, a combatant task."[20] The designation of noncombatant has its limitations, but it is also a contributing factor to presumptions of good-faith interactions that allow chaplains to develop relationships that can ensure the faithful transmission of the true objectives of ISAF and GIRoA in the face of anti-Afghanistan rhetoric.[21]

Military doctrine is continually adapting to more effectively describe and empower chaplains at every level. Army Field Manual (FM) 1–05, *Religious Support,* appendix A, "Religious Support in Civil Military Operations," for example, describes specifically how U.S. Army chaplains ought to support civil-military operations. While reaffirming that the primary duty of chaplains is to support the

Army chaplain meets with deputy minister of education and his interpreter at Camp Kiwi, Bamyan Province, Afghanistan

U.S. Army (Robert Renny)

religious needs of Soldiers, the appendix goes on to encourage chaplains to advise commanders on the religious dynamics of the local population and reinforces that chaplains ought not to be the sole participants in negotiations with host nationals or in human intelligence collection.[22] In this way, chaplains are seen, primarily, as part

of a larger engagement team; where chaplains are restricted in their behavior, other members can take the lead.

FM 1–05 represents the growing awareness that chaplains can play a leading role in engaging local religious leaders of host nations, but there still remain certain limitations to how chaplains can be involved in stability operations. For example, Chaplain William Sean Lee proposed that military doctrine be changed to include the title "religious liaison" for chaplains. In that role, chaplains would be

formally tasked with engaging "indigenous religious groups and leaders" to support stability operations; were such a change to be implemented, chaplains could be identified as the primary partner for religious leaders, with those relationships occurring in concert with security, governance, and development objectives.[23]

Thus, while chaplains are uniquely prepared to engage Afghan religious leaders because of their sensitivity to religious issues, there are certain factors that should be borne in mind to maximize their effect. While chaplains are a vital tool in the fight against a jihadi narrative, they are not the sine qua non of religious leader engagements. As seen with IIMEB, chaplains can help open dialogue, lay a foundation of trust, and demonstrate ISAF commitment to the Afghan people, but the sustained work of

ISAF is a short-term solution to a long-term set of complex issues that can only be addressed by Afghans and the individuals they identify as legitimate powerbrokers

religious leader engagement comes through continued involvement with religious leaders within the communities where they enjoy positions of authority.

Religious leaders and religious institutions play an undeniably important role in Afghan society, and it is in the best interest of the U.S. military to design, implement, and effectively sustain engagements with those leaders. Religious leader engagement programs in southern Afghanistan demonstrate that well-thought-out plans of action can have tremendous impact on GIRoA's intent to counter anti-Afghanistan propaganda and address the legitimate needs of the Afghan people. In short, ISAF is a short-term solution to a long-term set of complex issues that can only be addressed by Afghans and the individuals they identify as legitimate powerbrokers. Ultimately, no amount of foreign savvy can account for the credibility and sustainability of driving the religious leader engagement process through legitimate GIRoA-affiliated individuals and institutions.

To ensure the continued integration of religious leaders at every level of Afghan society, religious leader engagement programs should be routed through official GIRoA channels to ensure that the process can be sustained once GIRoA takes full control of its affairs. In Helmand, for example, the director of Hajj and Religious Affairs, Sayed "Mullah" Mukhtar Ahmad Haqqani, was a key partner in the fight to discredit Taliban ideology because "he was a dynamic and engaging man who immediately grasped our plan and intentions and took [Salam and Pelikan] 'under his wing' as we circulated throughout the province together."[24] As Afghans determine how, when, and which religious leaders are actively involved in the process of their own stabilization, ISAF and the U.S. Government will accomplish their goals.

From the perspective of ISAF and the U.S. Government, it should be kept in mind that religious leader engagement is a distinct type of engagement that has benefits and limitations that differ from other types. Engagement with religious leaders should rest on a long-term, sustainable plan that specifically considers the role that religious leaders play in village-level to national-level operations. U.S. military

chaplains are key to the creation and sustainment of religious leader engagements, but their role does not need to be constant and should respect their status as noncombatants. There is reason to believe that the doctrinal elements of chaplain responsibilities ought to be reconsidered and adjusted to meet the rapidly changing needs of military operations in the 21st century. One of the most beneficial aspects of religious leader engagement in southern Afghanistan was the involvement of a Muslim chaplain; his presence broke down barriers between local religious leaders and allowed for more honest discussions about stability operations.

One of the difficulties associated with the religious leader engagement programs was the availability of U.S. military Muslim chaplains. The U.S. military may wish to consider reaching out to nonmilitary chaplains (at hospitals, universities, and prisons, for example) who would be willing to support religious leader engagements around the world. A robust chaplaincy that can minister to U.S. troops as well as host nationals will boost U.S. military stability operations around the world. In fact, sustained religious leader engagement programs need not be confined to conflict zones; American foreign policy, in general, can benefit from recognizing the role of religion in societies throughout the world.

The enemies both of GIRoA and of stability in Afghanistan have waged a war based primarily on violent ideology shrouded in religious language that cannot be bombed into submission. The most effective method of dealing with ideology is to provide viable rhetorical alternatives. Active, sustained, and consistent engagement with religious leaders cultivates meaningful relationships and empowers local leaders to articulate ISAF and GIRoA commitment to stability. The primary effect of religious leader engagement has been to bring greater legitimacy to GIRoA. By connecting local religious leaders with their district political and religious leaders, district officials with provincial officials, and provincial officials with national leaders, ISAF was able to undermine some of the most frequent causes of instability: political alienation, religious extremism separated from mainstream society, knowledgeable religious leaders operating outside legitimate institutions, and the allure of violent narratives. **JFQ**

NOTES

[1] William Sean Lee, Christopher Burke, and Zonna Crayne, *Military Chaplains as Peace Builders: Embracing Indigenous Religions in Stability Operations* (Maxwell AFB, AL: Air University, 2004), 5, available at <www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA425869>.

[2] "The enemy has succeeded in establishing jihad as their pervasive, overarching narrative. Consistently over time and space, all of their remarkably sophisticated information operations uniformly hammer home this religious message of jihad. Virtually all Taliban leaders, from senior military and political leaders down to subcommanders at the district level, are *mullahs*. The implications of this have not yet sunk in. We are fighting a counterinsurgency; the enemy is fighting a jihad. But the intersection of how insurgencies end and how jihads end is historically nil." Thomas H. Johnson and M. Chris Mason, "Refighting the Last War: Afghanistan and the Vietnam Template," *Military Review* (November–December 2009), 2–14, available at <http://usacac.army.mil/cac2/militaryreview/archives/english/militaryreview_20091231_art004.pdf>.

[3] Jeffrey Cozzens, "The Culture of Global Jihad: Character, Future Challenges and Recommendations," The Future Actions Series, The International Centre for the Study of Radicalisation and Political Violence, October 2008, available at <www.scribd.com/doc/16073473/The-Culture-of-Global-Jihad-by-Jeffrey-B-Cozzens>.

[4] Johnson and Mason, 2–14.

[5] Patrick Carroll and Patricio Asfura-Heim, "Victory in Afghanistan Part 2: Countering the Taliban Narrative Through Credible Religious Voices," Marine Corps Association Web site, available at <www.mca-marines.org/gazette/article/victory-afghanistan>.

[6] Ibid.

[7] Author interview with Patrick Carroll, February 7, 2011.

[8] Carroll and Asfura-Heim, "Victory in Afghanistan Part 2"; Carroll commented on the importance of bringing this Navy chaplain to the religious leader engagement program: "Our efforts received an additional boost in early 2010 when the G–3 Fires and Effects Coordination Cell/Information Operations and the MEB chaplain's office arranged for a U.S. Navy Muslim imam to come out to the AO [area of operations]."

[9] Author interview with Chaplain Philip Pelikan, January 10, 2011.

[10] Philip Pelikan, "Mullah Engagement Program: Helmand and Farah Provinces, Afghanistan 15 February–15 March 2010," *Small Wars Journal* (December 28, 2010), 1–10, available at <http://smallwarsjournal.com/blog/journal/docs-temp/631-pelikan1.pdf>.

[11] "An example of a senior Army chaplain who properly balanced his roles as a religious leader and a staff chaplain was CH (LTC) Larry Adams-Thompson, the CJTF [Combined Joint Task Force] 76 Chaplain in Afghanistan from March 2004 through March 2005. Continuing the work of his predecessor CH (LTC) Ken Sampson, CH Adams-Thompson organized monthly meetings with local mullahs. The intent of these meetings was to discuss religious issues, moral concerns, and to build clergy-to-clergy relationships." Kenneth Lawson, "Doctrinal Tension: The Chaplain and Information Operations," *Military Intelligence Professional Bulletin* 35, no. 2 (April–June 2009), 24–31, available at <www.fas.org/irp/agency/army/mipb/2009_02.pdf>.

[12] Interview with Pelikan.

[13] Author interview with Patricio Asfura-Heim, February 14, 2011.

[14] Pelikan, "Mullah Engagement Program."

[15] Rajiv Chandrasekaran, "At Afghan Outpost: Marines Gone Rogue or Leading the Fight Against Counterinsurgency?" *The Washington Post*, March 14, 2010, available at <www.washingtonpost.com/wp-dyn/content/article/2010/03/13/AR2010031302464.html>.

[16] Ministry of Defence, "Former Afghan Refugee Returns to Helmand with UK's Stabilisation Unit," available at <stroicar.com/eng/news_detail.php?id=2634>. These engagements were headed by Pamir Patang, who fled Afghanistan for Britain in 2000. See also Stabilisation Unit, "Salaam Aleikum—SU's Pamir reflects on his Afghan experience," available at <www.stabilisationunit.gov.uk/index.php/our-people/stories-from-the-field/429-salaam-aleikum-sus-pamir-reflects-on-his-afghan-experience>.

[17] Pelikan, "Mullah Engagement Program."

[18] Ibid.

[19] Ibid.

[20] Lawson; Department of the Navy SECNAV Instruction 1730.7b, October 12, 2000, prohibits chaplains from being assigned compromising collateral duties or (in section 6g) being forced to reveal sensitive information.

[21] See, for example, SECNAV Instruction 1730.7b, section 5e (4).

[22] See also FM 1–05, section 5–40, G–13, and G–18.

[23] Lee, Burke, and Crayne.

[24] Interview with Pelikan.
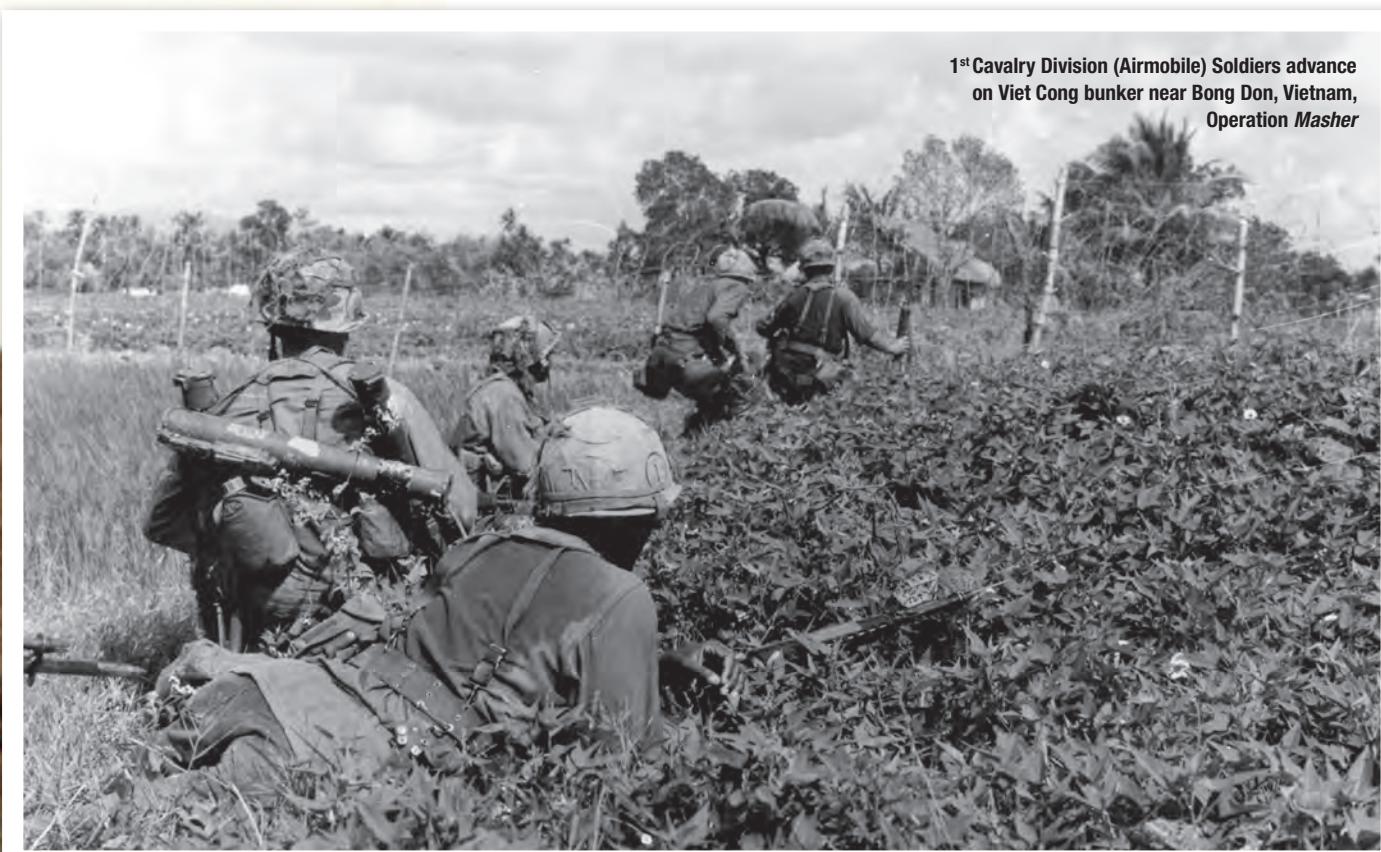
Vietnam and Iraq
Learning from the Past?

By B R E N T C. B A N K U S *and* J A M E S K I E V I T

1st Cavalry Division (Airmobile) Soldiers advance on Viet Cong bunker near Bong Don, Vietnam, Operation *Masher*

U.S. Army

U.S. Army (Adelita Mead)

Periodically, articles in both the mainstream media and "blogosphere" have compared operations in Iraq to previous U.S. operations in Vietnam. Sometimes, these articles are written by military analysts, but more often they are produced by journalists.[1] Occasionally, the motivation of members of the media in seeking similarities seems to have been mostly to discredit the current U.S. involvement in Southwest Asia in much the same fashion as did some members of the media for Southeast Asia in the late 1960s. Dr. Jeffrey Record and Dr. Andrew Terrill of the Strategic Studies Institute, on the other hand, have published an extensive analysis arguing that a comparison of the Vietnam War and the Iraq War in the areas of U.S. military commitment, war aims, nature and scale of operations, loss rates, pacification and state-building activities, role of allies, and domestic political sustainability reveals more differences than similarities between the two conflicts.[2]

Certainly, in one aspect the two conflicts *are* similar, and indeed this similarity may be said to hold true for all conflicts, conventional or unconventional: whatever the time and place, warfare is complex—that is, a dynamic mix of traditional combat activities, including pitched battles between heavily armed, well-organized

whatever the time and place, warfare is complex

forces and unconventional combat activities involving smaller units, occurs, while more often than not simultaneously and in close proximity, the competing hostile entities are conducting—and attempting to disrupt opponents'—governance or nation-building activities.

Beyond that perhaps "blinding flash of the obvious" (even if, for many, it unfortunately is not), all who would attempt

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to draw analogies between Vietnam and current conflicts, or lessons from the former for application to the latter, would do well to first read carefully the article "Lessons of History and Lessons of Vietnam" by then-Major, now-General, David Petraeus. Originally published in 1986 but recently republished in the U.S. Army War College's *Parameters*, the article begins, "[I]t is important to recognize that history can mislead and obfuscate as well as guide and illuminate. Lessons of the past, in general, and the lessons of Vietnam, in particular, contain not only policy-relevant analogies, but also ambiguities and paradoxes;"[3] and concludes, "Study of Vietnam—and of other historical occurrences—should endeavor to gain perspective and understanding, rather than hard and fast lessons that might be applied too easily without proper reflection and sufficiently rigorous analysis."[4]

Keeping that caution in mind, the remainder of this article attempts to contribute to analytical efforts comparing U.S. military involvement in Vietnam with that in Iraq, particularly regarding efforts to create effective indigenous armed forces capable of defending the national interests of a U.S.-supported local government.

Similarities

The major objective in any counterinsurgency or unconventional type of war is gaining and then maintaining the support of the population and not simply attriting the enemy's armed forces. Furthermore, it is of course true that it is difficult to gain and maintain support of a population unless you can guarantee a reasonable degree of security against hostile acts. Equally true is that determining and creating the proper balance among security-focused activities and population-support activities are no easier in Southwest Asia today than they were in Southeast Asia in the 20th century; nor are they likely to be easy in any future conflict irrespective of locale. The conduct of war will remain an art, not a science.

There are other similarities between former operations in Vietnam and present-day operations in Iraq. The original U.S. strategy for each included a focus on eliminating "incorrect ideologists" within the existing indigenous armed forces as a mechanism to help build reliable and effective armed forces for the U.S.-supported national government. In Vietnam, the first

step taken by the United States to create more reliable armed forces for the South Vietnamese government was to insist upon the demobilization of 25 percent of the existing regular army.[5] Just as in Iraq almost five decades later, this proved to be "an act both psychologically destructive and detrimental to the combat potential of the [indigenous] armed forces."[6] In each case, subsequent efforts had to be made to rectify the situation by enticing those who had been dismissed—in particular, experienced officers and noncommissioned officers—to return to the service.[7] Meanwhile, the enemy also "got a vote" on the

future course of each conflict, and in both cases chose to continue hostilities with an emphasis on guerrilla or insurgency style combat activities.

The initial U.S. response to this action by the enemy, in Vietnam in the 20th century and in Iraq in the 21st, was conducting traditional kinetic operations with U.S. forces as the principal way to neutralize the insurgents. In Vietnam, General William Westmoreland (U.S. ground commander, 1964–1968) initiated a "big unit" strategy of attrition. These "body count" or "search and destroy" U.S. military operations were expected to establish a secure environment while simultaneously protecting the fledgling South Vietnamese armed forces and allowing them time to develop.[8] In Iraq, American generals lacked the large numbers of troops that Westmoreland was able to call upon, but nonetheless attempted to use their available units to hunt down and eliminate the enemy's armed elements.[9]

Eventually, in both Vietnam and Iraq, American leaders recognized the need to have the military execute a more population-centric program over an extended period. As General Westmoreland stated:

Viet Nam is involved in two simultaneous and very difficult tasks. Nation building, and fighting a vicious and well-organized enemy. If it could do either alone, the task would be very simplified, but it's got to do both at once. . . . It won't, can't reach maturity overnight. Helping

Viet Nam toward that objective may very well be the most complex problem ever faced by men in uniform anywhere on earth.[10]

Unfortunately in Vietnam, America's early failure to focus on the population due to the perceived need to defeat large units of Ho Chi Minh's army of North Vietnam enabled the Viet Cong to become more deeply entrenched in the 44 provinces of South Vietnam, firmly establishing shadow communist cells in the hamlets and villages. Aiding the Viet Cong and North Vietnamese effort was the political weakness of the government in South Vietnam. Thus,

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successful counterattacks by the United States and its allies during Tet in 1968 resulted in the Viet Cong largely ceasing to exist as a viable fighting force

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although U.S. units were never defeated in engagements with the enemy's large-scale forces and established an ability to maneuver freely throughout the area of operations, the overall security situation was not actually significantly improved for most of the population of South Vietnam. Similarly in Iraq, the weaknesses of the new federal government of Iraq and the shortage of U.S. forces in country prior to the 2007 surge meant that enemy forces could always find a municipality or neighborhood in which it was fairly safe to base or operate.[11]

After more than 3 years of intensive U.S. operations in Vietnam, growing dissatisfaction in the United States with the human and financial cost of the war exploded domestically when the forces of North Vietnam and the Viet Cong launched the Tet Offensive, attacking most of the population centers in South Vietnam in January–February 1968. This offensive demonstrated to the American people that the enemy was *not* yet defeated, in contrast to the strategic communication messages of the Lyndon Johnson administration. In reality, of course, successful counterattacks by the United States and its allies during Tet in 1968 resulted in the Viet Cong largely ceasing to exist as a viable fighting force and destroyed the combined enemies' ability to wage offensive war for several years. Mainstream media stories of the day, however, generally ignored or glossed over those hard-fought battlefield *successes* of U.S. and allied forces, instead focusing on how the Johnson

Army medic adjusts pediatric wheelchair provided by nonprofit group to children in Baghdad, Iraq

U.S. Army (Breeanna DuBuke)

U.S. Information Agency

USAID military health team member inoculates refugee against cholera, Vietnam, 1969

administration had deceived the public. The resultant domestic political turmoil undermined the ability to capitalize on the enemy's weakened state.

Vietnam Reform: The CORDS Program
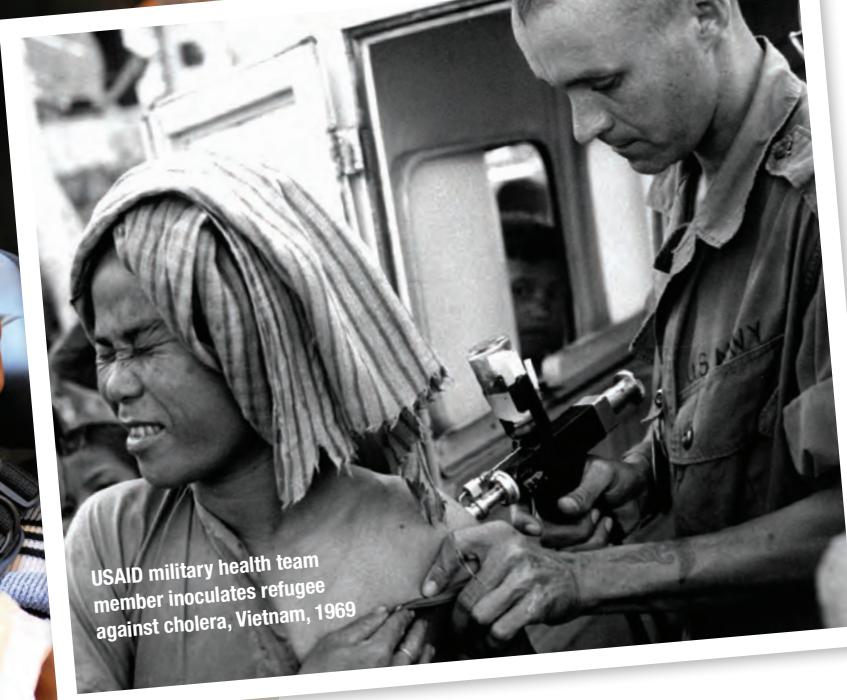
Nonetheless, as General Creighton Abrams (Vice Chief of Staff of the Army and deputy to General Westmoreland) took command later in 1968, positive steps toward greater success began to be taken. Fully cognizant of the importance of a supportive population for the South Vietnam government, Abrams aggressively implemented an increasingly effective security sector reform campaign in the hamlets and villages. This campaign's principal—but not exclusive—focus was on building security sector capacity in local forces to defend areas against residual Viet Cong elements or small unit actions of the North Vietnamese Army (NVA).

Furthermore, in order to create a more effective and coordinated whole-of-government approach, the military's security sector reform and civilian development programs were combined under

one command, called the Civil Operations and Revolutionary Development Support (CORDS) program. The CORDS concept was instigated by National Security Advisor Robert Komer; upon its adoption he was assigned as a deputy to Abrams specifically to implement the program, to help ensure military and civilian unity of effort during execution.[12]

Although similar to France's *sections administratives spécialisées* (SAS)[13] program during its Algerian experience a decade earlier, CORDS was both a much larger and a more diversified program. In its time, the SAS was a groundbreaking concept consisting of small units of primarily French army officers charged both with restoring order and with initiating rural development projects. SAS activities in Algeria included conducting adult literacy and primary education programs, building and repairing the regional feeder road system, undertaking local market and irrigation projects, and initiating a preventive medicine and dispensary program. The SAS effort was credited with successfully reducing the number of attacks on French troops.[14]

In Vietnam, CORDS coupled the military and civilian development programs under one unified command. In addition to security sector reform, CORDS focused on infrastructure development and humanitarian assistance and education projects as well as programs to manage natural resources in the rural provinces of South Vietnam. For example, under the auspices of CORDS, the U.S. Agency for International Development helped establish numerous schools, hospitals and health clinics, highways, hydroelectric plants, and farming cooperatives.[15] Through CORDS programs, essential services such as sanitation, access to clean water and medical treatment, in addition to assisting farming practices and road improvements and other natural resource management activities, improved the quality of life for the people. As important, the Regional Force and Provisional Force security elements developed under CORDS gained acceptance among the population and their local security activities subsequently often yielded positive results beyond expectations. CORDS seemed to show promise that the South Vietnamese population might be won over to support of

Iraqi children wait to receive book bags from Army Advise and Assist Brigade Soldiers during humanitarian aid mission, Ramadi

Children gather at market built with assistance of Vietnamese government and U.S. Agency for International Development

U.S. objectives in Southeast Asia and—more important—of the still weak South Vietnamese government itself.[16]

Although the entities hostile to the new Iraqi government and U.S. and coalition forces in Iraq never managed to execute anything like a full-scale Tet Offensive, they nonetheless initially succeeded in conducting episodic violent activities and inflicting increasing U.S. and Iraqi military and civilian casualties. As in Vietnam, the perceived inability of American, coalition, and Iraqi security elements to control and reduce the level of violence led to an upsurge in U.S.

domestic political opposition to continuing the conflict.[17] The theater strategic response was also similar, combining increased population-focused military security efforts (by both U.S. surge forces and repatriated indigenous militias) with better coordinated whole-of-government population support activities led by combined military and civilian reconstruction teams advising and assisting the local governance efforts at multiple levels.[18]

With respect to creating viable indigenous armed forces, even while focusing on counterguerrilla small unit tactics in training of local forces, the United States and its allies in Vietnam simultaneously worked to train the regular armed forces of South Vietnam to perform conventional combat operations. These activities further increased in the late 1969–1971 timeframe as recognition grew that, while the CORDS strategy might ultimately prevail against the diminished Viet Cong insurgent threat in the South and associated attacks by infiltrated small unit NVA forces, there still existed a significant conventional threat to the South Vietnamese state from the potential combined arms maneuver capabilities of North Vietnam's large and reasonably modern regular army.[19]

By the early 1970s, all levels of the South Vietnamese security forces were demonstrating reasonable effectiveness as counterinsurgency elements; however, despite significant U.S. training and equipping

leaving only the relatively small number of 50 military and 1,200 civilians assigned to the Defense Attaché Office in Saigon and approximately 5,000 American contractors. Together, these individuals provided technical assistance essential to the South Vietnamese armed forces' modernization and expansion programs, but were specifically directed to avoid providing advice on military operations, tactics, or techniques of employment.[22] Still, in 1974, Brigadier General James L. Collins, Jr., concluded the Army's study of the Vietnamization effort by writing that "the U.S. approach in training [the ARVN] has been successful."[23]

In Iraq, due to the unexpected decision in May 2003 to disband the entire existing Iraqi armed forces,[24] advisory and training efforts focused on creating effective indigenous Iraqi military forces had an even steeper hill to climb than had been the case in Vietnam. Initial efforts concentrated on having civilian contractors train nine light infantry battalions. It quickly became apparent that this approach was both insufficient and ineffective, and April 2004 saw the establishment of Multi-National Security Transition Command–Iraq and the transfer of responsibility for advising and training to the U.S. Armed Forces. At the same time, it was recognized that the number of Iraqi troops required was two to eight times greater than previously thought. Between 2004 and 2007, the mission of U.S. advisors and

Petraeus, simultaneously emphasized the need to protect the population.[26] The focus for both U.S. combat elements and Iraqi forces became counterinsurgency capabilities writ large, including the full integration of other governmental and nongovernmental lines of effort with military activities. U.S. elements advising and training the Iraqi army, which actually had never expended much effort toward developing traditional combat capabilities, abandoned those activities completely and focused solely on creating an effective small-unit counterinsurgency force, neither equipped nor expected to engage in combined arms maneuver operations against a conventional enemy.

By mid-2010, the situation in Iraq supported a conclusion that the surge of forces in 2007 and a focus on protecting the population succeeded in decreasing the violence and setting the stage for a U.S. withdrawal of forces.[27] At the same time, the advisory and training effort was able to begin concentrating at least partially on equipping and preparing some Iraqi army battalions and brigades for conventional operations (for example, issuing M1 Abrams tanks).[28] Thus, regarding countering the enemy insurgent or guerrilla forces, Iraq in 2011 appears to bear a significant similarity to Vietnam at the time of the American withdrawal in 1973.

Unfortunately, of course, in 1975 the North Vietnamese launched a full-scale conventional military invasion of South Vietnam:

> *U.S. elements advising and training the Iraqi army focused on creating an effective small-unit counterinsurgency force, neither equipped nor expected to engage in combined arms maneuver operations against a conventional enemy*

efforts and even actual support activities by U.S. elements during combat operations, the Army of the Republic of Vietnam (ARVN) units were not consistently successful in actions against NVA regular forces.[20] Nonetheless, the successful ARVN counterattacks that reversed the widespread initial gains of the NVA during the April 1972 conventional Easter Offensive[21] helped convince the North Vietnamese government to agree to the terms for a ceasefire in the war, signed in January 1973. In accordance with the terms of that agreement, all U.S. combat forces and military advisory teams were withdrawn from Vietnam within 60 days,

trainers was to get Iraqi soldiers and units certified as quickly as possible so that they could accompany and then replace U.S. or coalition organizations on strike operations against insurgents, in support of the objective of allowing coalition and U.S. forces to stand down and withdraw from Iraq. As had been true in Vietnam, the results of this approach varied—some Iraqi units performed well and others performed poorly—and the enemy was generally able to adapt his activities.[25]

In January 2007, President George W. Bush announced his decision to surge additional U.S. forces into Iraq, and the newly appointed U.S. commander, General David

On 1 March the [North Vietnamese] *968*[th] *Division attacked several small outposts west of Pleiku, focusing ARVN attention on the threat to that city. On 4 March the* [North Vietnamese main] *offensive kicked off with an attack by Regiment 95A which overran several small ARVN outposts guarding Route 19 in the Mang Yang Pass, thereby severing ARVN's main supply route to its forces in the Central Highlands. Farther east on Route 19 the 3*[d] [North Vietnamese] *Division launched its own offensive, making further cuts on this vital road and tying down the ARVN 22*[d] *Division. The next day the* [North Vietnamese] *25*[th] *Regiment cut Route 21, the only other road from the coast to the Highlands, between Ban Me Thuot and Nha Trang. ARVN forces in the Central Highlands were now isolated and completely dependent on aerial resupply.*[29]

On March 10, the NVA attacked Ban Me Thuot with 12 regiments supported by

armored, artillery, and engineer units; 32 hours later, the defending ARVN division's headquarters was overrun and captured.[30] This was conventional combat in every sense, and success at Ban Me Thuot was followed by the commitment of additional divisional and even corps-size elements by the North Vietnamese across the breadth and depth of South Vietnam. ARVN leaders were unable to react effectively to the NVA actions, and, just 55 days after the offensive began, South Vietnam ceased to exist when columns of NVA tanks rolled into Saigon.[31]

Conclusion

While no two wars are ever the same (rather, each is unique—and certainly this is the case of Vietnam and Iraq), three important insights are readily discernible from the preceding brief comparison.

First, every conflict requires both military operations aimed at eliminating hostile threats and also whole-of-government activities aimed at establishing or restoring essential foundations (physical, psychological, cultural, and moral, among others) of good governance and civil stability. While it may be possible—even required—to prioritize between those two lines of effort, there is no choice between doing one and doing the other—both always must be accomplished. This is because in any operation, whether so-called traditional combat operations or any of the many various types of stability operations, security and protection are always important to the population at risk. A safe environment is an essential precursor to reconstruction of an affected area. If security is *not* achieved early and then sustained in any operation, the second- and third-level effects are usually disastrous. At the same time, no peaceful interregnum between conflicts will last long unless the operations that eliminate direct hostile actions also are accompanied by activities that address existing or potential underlying catalysts of future conflict.

Second, and in a similar vein, outside military advisory and assistance efforts cannot focus solely on preparing indigenous armed forces for counterinsurgency activities on the one hand, or for conventional large-scale combat operations on the other. Armed forces must possess both those capabilities if they are to successfully protect modern nation-states in the 21st-century national security environment, just as was required in the 19th and 20th centuries. An army that can

do counterinsurgency but not multi-echelon combined arms maneuver, or vice versa, will almost certainly discover that its opponent always chooses to fight the fight for which that army and that nation are unprepared.

Third, despite perceptions to the contrary arising from the difficulties of counterinsurgency operations, it takes a longer time and a greater effort for an army to be prepared to fight on the multi-echeloned, combined arms maneuver battlefield. This is because the security operations of the counterinsurgency conflict are largely prepared and executed by battalions and companies, and the synchronization of military activities to conduct those operations frequently can be accomplished by headquarters operating from fixed facilities with assets also prepositioned within the theater. Successful company commanders can be educated and trained in a few years at most, and battalion commanders in less than a decade during actual operations. Multi-echelon, combined arms maneuver operations, on the other hand, demand preparation

and execution by multiple brigade-, division-, and even corps-level commanders, synchronizing the repositioning and application of diverse elements of combat power being brought to bear dynamically on the move, often while the headquarters themselves are moving to address or avoid specific threats. Company and battalion commanders still can be developed and made ready for this type of combat within relatively short timeframes, but the skills and abilities required at the higher (brigade, division, corps) echelons that success at multi-echelon combined arms maneuver demands take far longer to develop through actual experience or experiential education.

Thus, the United States was instrumental in helping the ARVN become a successful counterinsurgency force; it even managed to develop multi-echelon combined arms fighting capabilities within selected ARVN battalions and brigades, some of which fought very effectively during the final offensive of the Vietnam War in 1975. What the assistance effort in Vietnam could not do was develop

Airman patrols outskirts of Joint Base Balad, Iraq

U.S. Air Force (Quinton Russ)

truly effective division and corps commanders—only extensive education and experiential learning over time regarding the specific problems associated with multi-echelon, combined arms maneuver can do that. The U.S. withdrawal in Vietnam came too early for the ARVN to be fully ready to take on the defense against a large-scale conventional multi-echelon combined arms attack. The fate of the South Vietnamese army in 1975 provides ample evidence that courageous, battle-tested, and well-led battalions and companies cannot overcome the inability of brigade, division, and corps commanders to visualize and then synchronize the necessary actions of their dispersed commands across a fluid and dynamic kinetic battlespace.

Today, it appears that the United States has had reasonable success in Iraq in organizing, educating, and training indigenous security forces to undertake counterinsurgency and stability operations. This perception is encouraging discussion of a rapid withdrawal of all U.S. forces. But while it seems unlikely that Iraq's potential enemies will pose a multi-echelon combined arms maneuver threat in the immediate future, the same cannot be said for the longer term. Therefore, withdrawing U.S. advisors, support, and the possibility of U.S. intervention with combat capabilities, until at least another decade has passed, potentially invites a repetition of the "real" lesson of Vietnam in Southwest Asia.

Similarly, any failure on the part of the U.S. military to maintain professional military institutions that can and do focus their educational and experiential activities on *both* counterinsurgency and conventional combat operations—particularly for senior-level leaders—would make the risk a global one. **JFQ**

NOTES

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[10] Quoted in the cover story in *Time* 87, no. 1 (January 7, 1966), available at <www.time.com/time/magazine/article/0,9171,834900,00.html>.

[11] See LTG Raymond Odierno's speech, "The Surge in Iraq: One Year Later," March 13, 2008, The Heritage Foundation, available at <www.heritage.org/Research/Lecture/The-Surge-in-Iraq-One-Year-Later>.

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[15] M. Leepson, "The Heart and Mind of USAID's Vietnam Mission, Most USAID personnel in Vietnam, including State FSOs labored in obscurity. Here are some of their stories," American Foreign Service Association, 2000, 2, available at <www.afsa.org/fsj/apr00leepson.cfm>.

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[17] See, for example, Kevin Zeese, "Republican Opposition to Iraq War Growing," July 23, 2005, available at <www.lewrockwell.com/zeese/zeese11.html>.

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ADM Stavridis addresses
audience at NDU
Convocation ceremony

Read, Think, Write

Keys to 21st-century Security Leadership

By JAMES G. STAVRIDIS

Twenty years ago, on a hot August day in 1991, I arrived, like you, to begin a year at the National War College. I met striking and impressive classmates such as William "Fox" Fallon and Carrol "Howie" Chandler, future four-stars who radiated leadership. No one could know it then, but there would be several flag and general officers from our class. Everyone looked self-assured, and everyone—this may surprise you—was a lot taller than me and had far more executive hair than I did.

My daughters were very young. We lived in a little townhouse in Alexandria, Virginia, and I had just finished up a sea tour in an *Aegis* cruiser and many years at sea. I knew what I was good at and what I knew well: driving a destroyer or a cruiser, navigating through tight waters, leading a boarding party up a swinging ladder, planning an air defense campaign, leading Sailors on the deck plates of a rolling ship. But I also sensed what I did

not know or understand well: global politics and grand strategy, the importance of the "logistics nation," how the interagency community worked, what the levers of power and practice were in the world—in essence, how everything fits together in producing security for the United States and our partners.

In the year ahead, I hoped to close that gap, and I did. You will, too.

I want to give you a sense of what worked for us in the class of 1992 in the hopes that it will illuminate the voyage ahead for the class of 2012.

The first thing I want to emphasize is the gift you have been given—namely, the gift of time. To be given essentially a year in the middle of your career, far away from the grind of combat and the endless churn of staff work, is priceless. You have to decide how to spend it.

In three words: *read*, *think*, *write*.

The quintessential skill of an officer is to bring order out of chaos. You have to be calm,

smart, and willing to do the brain work; in the end, 21st-century security is about brain-on-brain warfare. We will succeed not only because we have more resources, or because our values are the best, or because we have the best demographics or geographic advantages—all of those things matter, of course. But in today's turbulent security environment, we will succeed and defeat our enemies by *out-thinking* them. To do that, and to be successful senior officers, you need to read, think, and write.

Let me start with reading. You will get plenty of *assigned* reading, which—as we used to say in the class of 1992—is only a lot of reading if you do it! Of course, I certainly

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believe you should read what the faculty here recommends, but you should also cast a wider net during the year ahead. Your reading should include not only history, politics, diplomacy, economics, and so forth, but also great fiction, books from distant cultures, and perhaps even a little poetry.

Recommend to each other great books that you have read. In your seminars, spend a minute or two hearing what your classmates are reading beyond the syllabus. Talk about what you have read. Keep a journal of your writing and how it strikes you. Copy down great passages. Read, read, read.

Can I offer a couple of titles from my recent reading? Try *Matterhorn*, a novel of Vietnam by Karl Marlantes. You will be pulled into combat in a real and visceral way, and you will be able to reflect on how far we have come in logistics, medicine, tactics, air support, and a thousand other things. Pick up *Colonel Roosevelt* by Edmund Morris, which concludes a trilogy of superb and highly readable books about perhaps our most energetic and brilliant President in the final, sad decade of his life when the country was politically polarized and the world order

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reading is the rock upon which you will build the rest of your career

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was changing day by day. Want to get a view into Afghanistan? Try *Flashman*, the first of the extraordinary series of historical fiction by George MacDonald Fraser, which throws Pashtun culture into vivid light, providing a view of one of the worst acts of generalship in history: Elphinstone's disastrous 1842 retreat from Kabul during which the British lost 30,000 souls in 2 weeks.

Reading is the rock upon which you will build the rest of your career. Here is your chance to create real intellectual capital from which you will earn interest, draw dividends, and make withdrawals in the two decades to come. In this way, I share Teddy Roosevelt's mindset when he stated, "I am a part of everything I have read."

Let us now turn to thinking. When President Obama was on campus in March of 2009 to dedicate Abraham Lincoln Hall, he commented, "Here at National Defense University, men and women come together to think, to learn, and to seek new strategies to

defend our union, while pursuing the goal of a just and lasting peace."

We stand here today at Fort Lesley J. McNair. It was built more than 200 years ago to protect a fledgling capital against forces that wished to do it harm. Its defenses were traditional—basic training, stockpiles of weapons, and fortifications—and the battlefields were traditional as well. Fast forward two centuries, and Fort McNair is *still* responsible for defending this nation, but the "battlefields" have dramatically changed, and the world today requires more from us all.

In this world, we must think our way to success in incredibly complex scenarios:

- a Westphalian system under attack with nation-states fighting in unconventional settings with unfamiliar tool sets
- attacks by organizations bent on ideological domination
- aging demographics throughout Europe and many developed regions
- a globalizing economy with perceived (and actual) winners and losers exacerbated by the challenges of austerity
- the exponential rise of environmental concerns directly linked to globalization
- miniaturizing technologies producing powerful effects and dangers to security
- transnational and transregional criminal organizations, trafficking in weapons, narcotics, people, money, and intellectual capital
- diffusion of weapons of mass destruction—including biological and chemical weapons
- the "cyber sea," enabling global communication at potentially everyone's fingertips—a "speed of thought" dialogue that occurs in a virtual *and* real 24/7 news cycle
- all of this taking place within the competitive "marketplace of ideas," which is ultimately at the root of conflicts, requiring sophisticated strategic communication to influence in both directions.

You must think your way through all of these new challenges. Few of them will be solved solely by combat operations, and thus tend to lurk in our intellectual seams and find our bureaucratic and cultural blind spots.

Next, let me share some thoughts about writing. Because after you read, and think, I would argue you *must* write. Writing is easy for some and hard for others, but it is essential in communicating what we have learned, as well as allowing others to challenge our

views and thus make them stronger. You will write plenty here for the faculty. But I would strongly encourage you to set a goal of publishing an article somewhere as a result of the work you have done here.

Share your ideas in print—a scholarly journal, a military magazine, a literary journal, or even a blog post. Get out there with your ideas. Nail your whispers to the wall. Conclude the trilogy of read, think, and write—and try to publish. Is there "career risk" in publishing? I suppose. It hasn't hurt me too badly over the years. What matters more is testing your ideas on the field of intellectual battle, so to speak.

We need to challenge our staffs, friends, shipmates, allies—the dedicated professionals who work with us every day. We need to constantly seek new relationships and forge new partnerships. With all that said, let me give you more food for thought.

We have too many walls in the world of security—we need more bridges. Our self-imposed legal, political, moral, and conceptual boundaries defining what constitutes *combat* versus *criminal activity*, *domestic* versus *international jurisdiction*, and *governmental* versus *private interest* all provide operational space for potentially lethal opponents with no such boundaries to respect.

As we stand here in the shadow of a building that bears his great name, I am reminded of one of my favorite quotations of Lincoln: "The dusty dogmas of the past are insufficient to confront our stormy present. As our world is new, we must think anew." We must address the challenge of effectively employing our military across these boundaries without undermining the core values and freedoms that underpin our society.

Here, you will look to expand our understanding of conflict and security beyond only lethal means and reexamine all our operations, including peacetime engagement and training activities, in order to leverage the vast knowledge—the "corporate knowledge," quite literally—of the private sector as part of a single national and multinational strategic framework.

In the course of your thinking, you must focus on the value of understanding different languages and study one yourself; understand different cultures; study determined adversaries; and seek new ways to develop cooperation and collaboration. This approach reflects another giant for whom one of your academic buildings is named, General

National Defense University (Katherine Lewis)

ADM Stavridis opens academic year at National Defense University

George C. Marshall, who embodied the interagency community mindset before it became fashionable.

Let me say a word to our international students and the interagency partners. You have a special and important role here as teachers to help internationalize the thinking of military students and teach them how the international and interagency communities work. Each person who passes through this university will play a different role in our collective security—some will wear a uniform, whether here in the United States or abroad in our partner nations' armed forces; some will be diplomats; some will eventually work in the private sector. In the end, you will be the sum of what you teach each other.

Optimism is a force multiplier, as Colin Powell always said. As you think about the 21st-century security environment, beware of endless pessimism: the past is not all bad; neither is the present nor future all challenges and threats.

Indeed, there has been what I call "hopeful progress" over the past decades in places such as Peru, Colombia, and the Balkans, and in dealing significant blows to al Qaeda and transnational criminal organizations and cartels. We have also developed new and stunning technologies in everything from facial recognition to missile defense. Our advances in Special Forces are incredible.

Of course, the men and women in all our militaries—all volunteers here and increasingly so across the world—show us daily their courage, honor, and commitment. Our Special Forces have been through the cycle of triumph and tragedy in the last few months, from killing Osama bin Laden to losing so many of their own. Yet they stand and deliver, determined and proud, each day.

There is also promise in geopolitics as rising democratic nations such as India, Brazil, Turkey, Poland, and Indonesia flourish—all of which are taking increasing roles of leadership and importance in their respective regions. We are fortunate in the United States to have positive relations with these nations and others, and many of those relations started in groups in educational settings, like what I see before me.

> *in today's security environment, progress and success will result not from building walls, but from building bridges*

Europe is still vitally important, and the North Atlantic Treaty Organization (NATO) is a foundational element of global security. At NATO and U.S. European Command, our specific challenges run the gamut from Afghanistan and Libya to the more nuanced situations such as illicit trafficking, terrorism, piracy, cyber security, and even strategic communication. In these different missions, we find that successfully meeting and then overcoming them require what we call the *comprehensive approach*—bringing together and synergizing the talents and abilities of military and civilian, foreign and domestic, public and private sectors. Afghanistan is an example: we are teaching literacy to the

Afghan army (well over 100,000 today read) and partnering in telecommunications and other sectors.

We need to continue doing this collaboratively: within and across governments and their agencies; within and between public and private enterprises; throughout academic institutions; and, most importantly, within our shared homes. Security requires complex and coordinated responses that move at the speed of thought.

Diversity of capabilities, capacities, and responses to any challenge should be seen as a strength, not a weakness, but only if the actions and tools can be used synergistically. This can only happen when all the interested parties adopt a common vision for security built on the foundation of trust and confidence and achieved through coordination, cooperation, and partnering.

Again, in today's security environment, progress and success will result not from building walls, but from building bridges. We need to do this with speed. We will prevail if we think about innovation, if we think about how to take the next step, if we recognize that opportunities exist in real time and have a limited shelf life. We need to be prepared to move quickly in response to emergent opportunities. This is brain-on-brain warfare and that is how we will win in the end—by outthinking our opponents.

I'd like to close with an example from something that most of you are probably familiar with and use every day—I know I do—Wikipedia. The vision statement of Wikimedia Foundation, Wikipedia's parent company, is "A world in which every human being can freely share in the sum of ALL [emphasis added] knowledge." The sum of all human knowledge—all of us thinking together are smarter than any one of us thinking alone.

As I look out across this wonderful group, I cannot wait to see and learn what you will contribute to that sum. You will be part—an important part—of the sum of all security.

I am full of the happiest of memories as I stand with you today. I remember my children when they were small. I remember the incredible luxury of time to read, think, and write. I remember the friendships of my classmates that now stretch across two decades. All that is ahead of you in this next year, and I envy you the voyage.

Godspeed and open water to each of you, Class of 2012. **JFQ**

Understanding Strategic Thinking
and **Developing Strategic Thinkers**

By D O U G L A S E . W A T E R S

Army War College students participate in Capstone strategic decisionmaking exercise

The U.S. Army War College (USAWC) begins the academic year with a dedicated Strategic Thinking course, the first of six core courses that, along with electives, comprise the 10-month resident curriculum. The primary mission of the USAWC is to prepare students for the challenges of leadership at the strategic level, so it is appropriate to start the year with a course on the cognitive skills required for success at that level. However, for many newly arriving students, strategic thinking is a new and somewhat perplexing concept. They have been highly successful in their military careers to date, but most of their experience is at the tactical level of war. Success at the strategic level requires additional competencies and skills in order to navigate the volatile, uncertain, complex, and ambiguous landscape characteristic of the strategic environment.[1]

The inherent complexity and ambiguity that exist at the strategic level are not solely a challenge for USAWC students. In a recent installment of the *Strategy for the Long Haul* series by the Center for Strategic and Budgetary Assessments (CSBA), authors Andrew Krepinevich and Barry Watts argue that the strategic competence of the U.S. national

> *the inherent complexity and ambiguity that exist at the strategic level are not solely a challenge for USAWC students*

security establishment as a whole has been declining for some decades. In their opinion, this decline is fundamentally due to a lack of understanding at the national level of what strategy is:

Both public strategy documents from recent administrations and actual American strategic behavior suggest that U.S. political and military leaders have been increasingly inclined to equate strategy with listing desirable goals, as opposed to figuring out how to achieve them. As a practical matter, strategy is about making insightful choices of courses of action likely to achieve one's ultimate goals despite resource constraints, political considerations, bureaucratic resistance, the adversary's opposing efforts, and the intractable uncertainties as to how a chosen strategy may ultimately work out.[2]

CSBA is not the only organization to question U.S. strategic competence. Congressional committees, other think tank–commissioned studies, politicians, and academics have all recently made similar assessments.[3] Whether or not the reader agrees with these assertions regarding U.S. strategic competence, few would disagree that the outcomes for many of the strategic decisions made over the past 50 years could have been improved if more up-front thought had been applied to the *ways* and *means* of strategy and not just the desired *ends*.[4] In other words, a thorough understanding of strategic thinking and how to apply it to complex security issues is a prerequisite to better strategy-making. While this competency is clearly essential for the strategic leaders of the uniformed military, civilian Service secretariats, Department of Defense, and the rest of the national security establishment, it is not relevant solely for them. The staffs that support these strategic leaders, at

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least down to the lieutenant colonel/O–5 level, should also be able to think strategically in order to properly support their senior leaders.

While review of the strategic management literature identifies a clear consensus on the importance of strategic thinking, there is a wide variance of thought and opinion on how to conduct it (more on this below). Articles that contain a succinct discussion of strategic thinking and provide a coherent framework that might help budding national security professionals to understand what constitutes strategic thinking and how to go about improving it, both individually and within an organization, are difficult to find. This article attempts to address this vacuum by synthesizing the major schools of thought within a strategic thinking framework developed to help USAWC students better understand and employ this critical competency. The article begins with a brief discussion of the historical development behind the differing approaches to strategic thinking and a definition of strategic thinking. It then discusses the USAWC approach to teaching strategic thinking, to include the framework, within the curriculum.

Approaches

Authors from within the military and national security literature deal extensively with the theory of war, strategy development, and strategic execution (for example, Clausewitz, Jomini, B.H. Liddell Hart, Edward Luttwak). These materials clearly provide insights about strategic thinking in the broadest sense, but most authors do not delve into specific discussions of strategic thinking and its conduct. For that, one has to turn to the business literature where strategic thinking has received extensive coverage.

While strategic thinking is a well-established concept within the strategic management literature, there is not a consensus definition of it. The fact that there are many definitions does not indicate a debate about the validity or effectiveness of strategic thinking per se but is primarily due to the differing approaches in how to conduct strategic thinking within an organizational setting. Many schools of strategy-making have emerged over the years; indeed, Henry Mintzberg, an internationally renowned strategic management academic and author, has categorized 10 distinct strategy formulation schools.[5] However, to simplify things, insight into the significant differences in these schools of thought can

Root Hall at U.S. Army War College

U.S. Army War College seal

be attained by referencing the historic debate about strategy itself: is strategy-making art, science, or a combination of both?[6]

Theorists who believe that the development of strategy is based more in fixed, analytical processes (science) necessarily view strategic thinking (or planning) in this light. This view was first brought to prominence by the "father of strategic management,"[7] Igor Ansoff, in his seminal 1965 work *Corporate Strategy*, and later by Harvard professor Michael Porter with his "five forces

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creativity and a systems approach, augmented by critical thinking, are the true province of strategic thinking

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and value chain" analyses.[8] As the strategic planning school gained traction, many companies hired corporate planners who established formal long-range planning systems that functioned in a detailed and logical systematic process. Corporate leadership expected these processes to produce successful strategies, but organizational critics suspected that in most cases, the output was merely thick planning books and 5-year financial projections increasingly viewed as irrelevant by top managers.[9]

By the mid-1980s, this criticism of strategic planning reached a tipping point. Those who felt that the de rigueur analytical planning processes of the day were insufficient advocated a new approach. Mintzberg, the most prominent advocate of the view that strategic thinking relies more on creativity and intuition than it does on analysis (that it is more art than science), presented his argument in his seminal book and 1994 *Harvard Business Review* article, "The Fall and Rise of Strategic Planning." Mintzberg identified shortfalls with strategic planning and provided a stark diagnosis: strategic planning is *not* strategic thinking. Mintzberg held, "Strategic thinking . . . is about *synthesis*. It involves intuition and creativity. The outcome of strategic thinking is an integrated perspective of the enterprise, a not-too-precisely articulated vision of direction." In Mintzberg's view, strategic planning is a separate process from strategic thinking, one that should provide data and act as a catalyst for true strategic thinking but certainly not provide the "one right answer." In fact, Mintzberg offered that strategic planning, when used improperly, would actually thwart true strategic thinking.[10]

A third approach to strategic thinking has emerged more recently. It removes the stark differentiation between the *strategy as science* and *strategy as art* camps by viewing strategic thinking as necessarily both art and science. As scholar Jeanne Liedtka of the Darden School of Business succinctly stated, "The literature draws a sharp dichotomy between the creative and analytic aspects of strategy-making, when both are clearly needed in any thoughtful strategy-making process."[11] This view recognizes that while strategic planning is primarily analytical and strategic thinking clearly requires creativity and synthesis, creativity is not enough. Strategic thinking requires *both* critical and creative thinking to be effective. In order to think strategically, leaders and their staffs must develop innovative strategic options and then evaluate these ideas through effective critical thinking. Insights gained from this analysis of options can inform, in an iterative process, new idea generation. Once complete, the selected strategic options can be developed (and further analyzed) within formal strategic planning processes. This divergent and convergent thinking process is essential to effective strategy development; one without the other is insufficient.

USAWC has traditionally taught this balanced approach to strategic thinking. However, while stressing that strategic thinking involves both analytic and creative thinking processes, these processes were generally given equal weight as to their importance to the strategic thinker. This author believes that both are indeed important but that creativity and the ability to use systems thinking to holistically assess all aspects of an organization's internal and external key factors are what truly empower effective strategic thinking. Critical thinking is perhaps the most important attribute for a military officer at all levels of the organization, but for the strategic thinker, it is in and of itself insufficient. Creativity and a systems approach, augmented by critical thinking, are the true province of strategic thinking. It is therefore fair to say that while the author recommends a balanced approach to strategic thinking, there is a subtle bias toward the importance of art in the execution. In a 1959 address to the Naval War College, the eminent strategist Bernard Brodie captured this nuance quite well:

let us remember that scientific method is useful and is being used in exploring alternative choices but not in making the final choice. The latter depends ultimately on good judgment, which is to say on the informed intuition of a person or of a group of persons who have been brought up in a particular indoctrination and whose approach to their work is fundamentally that of the artist, not of the scientist.[12]

Strategic Thinking Defined

Strategic thinking is an intent-driven activity.[13] It ultimately has the goal of facilitating good judgment to inform decisionmaking and the development of innovative strategies to align the organization's future direction with the expected environment. The intended outcome is to make the organization more competitive and successful. If you are thinking about how to better posture your organization or nation to succeed in the future, then you are conducting strategic thinking. Two USAWC faculty members have formally defined *strategic thinking* as "the ability to make a creative and holistic synthesis of key factors affecting an organization and its environment in order to obtain sustainable competitive advantage and long-term success."[14] Although this definition refers to an organization and its environment, it is no less true for a nation-state and the strategic environment in which it exists.

Skills
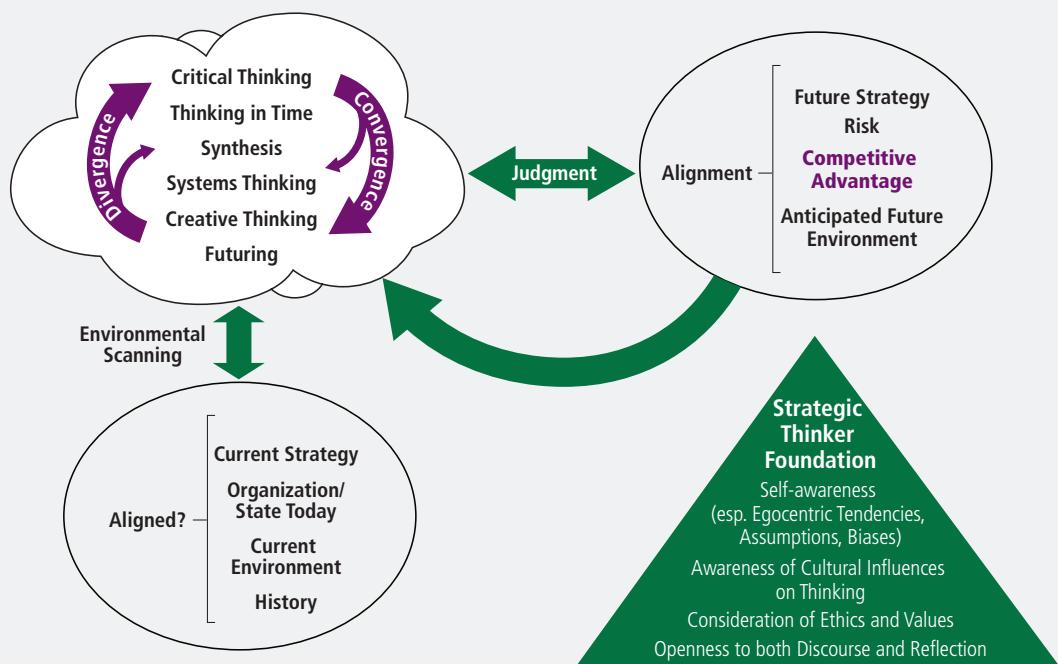
There are specific skills required to be a successful strategic thinker. Over the first 2 weeks of the academic year, USAWC students are presented with 10 discrete lessons that introduce these thinking skills as well as critical competencies such as self-awareness, openness to dialogue, and awareness of cultural influences that are necessary to be an effective strategic thinker (see table).

U.S. Army War College Strategic Thinking Course

Lesson	Focus	Description
Seminar learning	Competency (openness to dialogue)	Adult learning discussed; seminar learning environment for the year established
Course introduction	Overview/introduction to framework	Prominent strategic leader address to students; discussion of remarks and the Strategic Thinking Framework in seminar
Critical thinking	Thinking skill (analytic/convergent)	Gerras Critical Thinking Model (modified Paul and Elder model) discussed; application exercise
Creative thinking	Thinking skill (creative/divergent)	Allen faculty paper on creativity at the individual, group, and organizational levels discussed; application exercises
Self-awareness	Competency	Presentation on Myers-Briggs Type Indicator (MBTI). MBTI, 360 assessments, and other self-awareness tools discussed in seminar
Systems thinking	Thinking skill (synthesis/holistic)	Open systems theory and Senge's *The Fifth Discipline* discussed; application exercise
Ethical reasoning	Thinking skill (analytic/convergent)	Ethical reasoning's relevance to the strategic leader, nature of ethical dilemmas, and major philosophical traditions discussed; a disciplined approach to ethical reasoning explored
Uses of history: Thinking in time	Thinking skill (analytic/convergent)	Historiography, uses of history, and Neustadt and May's *Thinking in Time* discussed
Cultural influences on thinking	Awareness of cultural influences Analytic Cultural Framework (analytic/convergent)	Lewis's *When Cultures Collide: Leading Across Cultures* discussed; USAWC's Analytical Cultural Framework for Strategy and Policy introduced
Application of strategic thinking to a wicked problem	Integrative exercise	Examination of a complex "wicked problem" (Israel-Palestine) using all thinking skills per the Strategic Thinking Framework in order to achieve a higher level of understanding of the issue

Note: To locate the faculty papers on critical and creative thinking by Dr. Steve Gerras and Chuck Allen, respectively, go to the USAWC DCLM Web site at <www.carlisle.army.mil/usawc/dclm/facultyPublications.cfm>. Ethics clearly can have a moral or emotional basis that would tend to defy an analytical label. However, USAWC teaches ethical reasoning skills that leverage an analytical methodology to inform and aid strategic thinking. It is on this basis that it is classified as a variant of critical thinking.

Strategic Thinking Framework

Strategic Thinking Framework

Strategic Thinking Framework

The Strategic Thinking Framework (see figure) shows how these various skills and competencies interrelate. It depicts the strategic thinking process and demonstrates the relationship between the past (history), present, and desired future direction (or vision) for the organization. True strategic thinking always involves thinking in time, as it seeks to answer the question: "Having seen the future that we want to create, what must we keep from our past, lose from the past, and create in our present, to get there?"[15] It identifies the interplay between critical and creative thinking processes and the central role of systems thinking to produce synthesis and holistic appreciation of the key factors that influence an organization and its environment. It importantly highlights the ultimate intent of strategic thinking: the alignment of innovative new strategies to the anticipated environment in order to achieve competitive advantage. The framework rests on a foundation of key attributes or competencies needed by a strategic thinker.[16]

The process depicted in the Strategic Thinking Framework is not a linear one, but to better explain the framework, it is helpful to start with the Organization/State Today.

During a recent visit to the USAWC, a senior Army leader who also has extensive strategic leadership experience in the commercial sector offered that there is a central issue that all senior leaders (in both military and commercial domains) are always thinking about: Do I have my strategies right, and are they executable?[17] Are the organization's vision and the ends/ways/means devised to attain it aligned with the anticipated future environment? This is a critical question

strategic thinking requires critical, creative, and systems thinking to be effective

that strategic thinkers wrestle with on a continuing basis. In today's more volatile and complex security environment, if an organization fails to ask this question and then adapt/transform itself as needed, it can quickly find itself poorly postured for continued success. As former Chief of Staff of the Army General Eric Shinseki was fond of saying, "If you don't like change, you're going to like irrelevance even less."[18]

In order to contend with this question and develop insight into future direction, strategic thinking requires critical, creative, and systems thinking to be effective. The Strategic Thinking Framework depicts an iterative process of divergence and convergence, as creative thinking explores innovative new ideas, hypotheses, and potential opportunities, and critical thinking analyzes data to fuel creative thought and evaluates generated options to converge on the most promising opportunities. This dynamic is difficult, given an innate tension between these two thinking skills. As Liedtka observed, "Strategic thinking is *both* creative and critical. Figuring out how to accomplish both types of thinking simultaneously has long troubled cognitive psychologists, since it is necessary to *suspend* critical judgment in order to think more creatively."[19]

While an individual may not be able to conduct critical and creative thinking simultaneously, an accomplished strategic thinker can rapidly move from one to the other as required. Use of analytical thinking skills provides insights and data that can be leveraged with creative thinking to aid in both problem identification and construction as well as the development of innovative ideas and hypotheses about the future direction of

the organization (as illustrated by Mintzberg's catalyst role discussed earlier). This idea generation must occur in an environment that is free from critical judgment or ridicule in order to foster the creative process. However, once hypotheses are generated, then convergent/critical thinking is needed to evaluate these new ideas. It is important to note that this is not done necessarily (or usually) in a linear fashion, but critical and creative thinking skills are exercised when appropriate throughout the learning process. This iterative process of divergent and convergent thinking is more likely to result in promising strategic options that can be further analyzed and developed within an organization's formal strategic planning processes.

Systems thinking is also central to the strategic thinking process and, like creative thinking, is a fundamentally different means of thinking than that used in traditional analytical processes. Russell Ackoff described this difference in his book *Creating the Corporate Future*:

Analysis looks into things; synthesis looks out of things. Machine-Age thinking was concerned only with the interactions of the parts of the thing to be explained; systems thinking is similarly concerned, but it is additionally occupied with the interactions of that thing with other things in its environment and with its environment itself.[20]

The insights generated from iterations of creative and critical thinking are leveraged by systems thinking to inform the development of a holistic appreciation of the complex issues at hand. This holistic view aids in the identification of key linkages and factors that influence the organization and its external environment that must be considered in any future strategy development. Creative potential solutions and strategic options should be considered through this systems approach in order to better understand and predict intended as well as unintended effects and reactions. This holistic systems-level view of both an organization and its environment is critical to effective strategic thinking. Without a holistic appreciation of complex and ambiguous issues, potential second- and third-order effects of decisions may go unnoticed, and strategic leaders and their staffs are likely to become overwhelmed by complexity.

This iterative synthesis of insights, ideas, and identified key factors is used to develop improved judgment, which is a critical output of the strategic thinking process. This improved judgment will in turn inform the development of strategies within the organization's traditional strategic planning processes that align the organizational vision with the future environment, thus making the organization more competitive and successful in that future environment. These strategies then become the current strategy, and the cycle continues.

The feedback loop is a critically important piece of the Strategic Thinking Framework. Mintzberg has described strategy-making as both deliberate and emergent in nature; in other words, "strategies can form as well as be formulated."[21] A learning organization should welcome emerging strategies that may develop slowly, frequently from the bottom up, as an important augment to the deliberate strategy-making process. Strategic thinkers should realize that they cannot possibly be smart enough to think through everything in advance, so their deliberate strategies will be incomplete (and perhaps flat-out wrong in some areas). Actual experience in implementing a strategy will spark new insights and lessons learned that should be taken advantage of by the organization's strategic thinkers. Liedtka refers to this as "intelligent opportunism," one of her five elements of strategic thinking, which "furthers intended strategy but that also leave[s] open the possibility of new strategies emerging."[22] Military officers will be familiar with this concept as they reflect on the emergence of a counterinsurgency strategy over time during Operation *Iraqi Freedom*.

This feedback loop is more than just noting lessons learned. To be true strategic thinkers and to enable organizational learning, the insights generated from implementation of deliberate strategies and the success or failure of emergent strategies must be leveraged through a higher level learning process within the organization. Professor Loizos Heracleous addressed this critical point when he outlined differing viewpoints on the nature of strategic thinking and its relationship to different levels of learning by examining the contributions of four prominent academics.[23] While these viewpoints all use different terminology, the central concept for all four is the same: the difference between strategic thinking and typical strategic planning processes "involves thinking and acting within a certain set of assumptions and potential action alternatives; or challenging existing assumptions and action alternatives, potentially leading to new and more appropriate ones."[24] The latter involves true strategic thinking, and is facilitated through iterative divergent and convergent thinking and holistic, systems-level appreciation of key factors and linkages as described earlier.

The Strategic Thinking Framework may appear to suggest a sequential process, but this is not the author's intent, nor is it the case

U.S. Army War College

Students attend program on national security and human rights

in practice. For example, the decisionmaking procedure used by President George W. Bush to develop the "surge" in Iraq shows how nonlinear and untidy these processes can be. President Bush gradually came to the realization that he needed to change his thinking on the conduct of the war after considering intelligence reports, the analysis of top aides and Cabinet members, and his theater and field commanders' assessments of the declining situation in Iraq. He began a deliberate process to develop a new strategy that would turn things around. His vision or strategic intent was unwavering, as what he termed as "victory" in Iraq was the goal. The President sought out new ideas from wherever

Thinking Framework. The same is true for *cultural influences on thinking*, as culture is a strong determinant in the development of underlying assumptions, inferences, and points of view for the strategic thinker and others, both internal and external to the organization. Openness to *discourse and reflection* is necessary to ensure the strategic thinker is receiving relevant data, insights, and points of view on issues. A climate/culture (and leader) that encourages this open dialogue on issues is critical; otherwise, the staff will only feed information that confirms the leader's existing views (and biases), resulting in suboptimal decisions. Finally, *ethics and values* must underpin the thinking and decisions of senior

Army, and especially as described in joint doctrine, has a narrower application focused at the operational and theater strategic levels of war, where it is used to apply critical and creative thinking to understand, visualize, and describe complex, ill-structured problems and develop approaches to solve them.[27]

However, although strategic thinking and design are currently focused at different levels, the skills needed to execute both are, for all intents and purposes, the same. Officers who become familiar and comfortable with design thinking at the operational level should find the transition to strategic thinking at the institutional/strategic level easier. This may help to reverse CSBA's purported decline in U.S. strategic competence (at least within the military), but only if the Services and DOD embrace these methods of thinking within their cultures. In order to effectively execute strategic thinking and design thinking across the Army, the culture must encourage open-minded leadership that is receptive to, and indeed actively encourages, ideas that stray from the current consensus. Leaders must be comfortable with, and encourage, subordinates who will challenge their assumptions and biases during the thinking and learning process. While General David Petraeus demonstrated this commitment within his command,[28] his example may be more aberration than the norm. It is beyond the scope of this article to address this further, but it is the author's opinion that this cultural alignment is central to the successful establishment of better strategic thinking and design within the military as well as the rest of DOD.

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self-awareness is necessary to ensure decisions are not biased by cognitive "blind spots" established due to a failure to examine all relevant points of view on an issue

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he could get them, including going outside of traditional sources. Strategic reviews were conducted throughout the national security arena, including at think tanks, the National Security Council, and the Pentagon. Conflicting data, analysis, ideas, and recommendations came to the President and his staff through reports and formal meetings. Ultimately, after weighing all the evidence, the President made the decision to order the development of a counterinsurgency strategy in Iraq and increase force levels to adequately resource the strategy. Application of critical, creative, and systems thinking concepts was in evidence throughout. Nonetheless, strong points of view underpinned by unexamined assumptions and cognitive biases were also present and served to complicate strategic thinking regarding the issue.[25]

The Strategic Thinker Foundation at the bottom of the framework is comprised of critical competencies that are prerequisites for becoming an effective strategic thinker. *Self-awareness*, particularly concerning one's own assumptions, biases, and points of view, is necessary to ensure that decisions are not biased by cognitive "blind spots" established due to a failure to examine all relevant points of view on an issue. This is also an important component of critical thinking, but it is reinforced here because a lack of self-awareness will manifest itself in flawed thinking and decisionmaking throughout the Strategic

leaders within the military, as the military is a profession, and professions stand or fall based on the trust they engender with their client—in this case, the American people. A strong ethical component to the military's expert knowledge is critical to sustaining this trust.[26]

The organizational processes of environmental scanning and futuring and the concept of risk are depicted on the framework, but are not discussed in any detail during the Strategic Thinking course. They are instead covered within USAWC's Strategic Leadership course and, in the case of risk, in other core course curriculum. While environmental scanning and futuring contribute to strategic thinking, and risk is integral to the calculated relationship of ends, ways, and means, their coverage during the course is not required for students to gain the necessary understanding of the framework and strategic thinking itself.

Linkages and Implications

There are clear parallels between strategic thinking and the emerging concept of design within Army problem-solving processes. However, strategic thinking and design are not synonymous. Strategic leaders at the institutional level of the Services and Department of Defense (DOD) are focused on strategic decisions impacting the budget, major acquisition programs, and policy issues that shape and impact the enterprise as a whole. Design, as currently implemented within the

Strategic thinking is a critical competency for senior leaders and their staffs. It is a purposeful, deliberate activity that seeks to generate innovative strategies and approaches to posture organizations for success in the complex and ambiguous strategic environment. The concept of strategic thinking was explained by presenting its history within the strategic management literature, and identifying three primary points of view organized across the strategy as art versus strategy as science debate. While both of these diametrically opposed viewpoints bring valid insights to the essence of strategic thinking, neither is sufficient in itself. The sound strategic thinker approaches the complex issues of the 21st century in a balanced manner, bringing both analysis and creative/intuitive processes to

bear. USAWC's Strategic Thinking curriculum was outlined, and serves as a means to develop strategic thinking skills that will continue to be honed throughout the academic year. The Strategic Thinking Framework further explains the components of strategic thinking and provides an approach to inform senior leader judgment. The goal is to develop strategies that align an organization's future direction (or vision) with the future environment to gain competitive advantage. **JFQ**

NOTES

[1] Stephen J. Gerras, ed., "The Strategic Environment," in *Strategic Leadership Primer,* 3ᵈ ed. (Carlisle Barracks, PA: U.S. Army War College, 2010), 11–12.

[2] Andrew F. Krepinevich and Barry D. Watts, *Strategy for the Long Haul: Regaining Strategic Competence* (Washington, DC: Center for Strategic and Budgetary Assessments, 2009), vii–viii.

[3] Frank G. Hoffman, "The Strategic Thinking Deficiency: Diagnosis and Cure," paper presented at the 2008 Joint Operations Symposium, Institute for National Strategic Studies, National Defense University, June 4–5, 2008, available at <www.ndu.edu/inss/Symposia/joint2008/papers/Hoffman%20Paper_Panel%203.pdf >.

[4] The decision to invade Iraq in 2003 is a recent pertinent example.

[5] Henry Mintzberg and Joseph Lampel, "Reflecting on the Strategy Process," *Sloan Management Review* 40, no. 3 (Spring 1999), 21.

[6] Some may claim that the division of strategic thinking schools into an art versus science scheme is an oversimplification of a rich and complex tapestry of competing thoughts. For the purposes of this article, however, it provides the right level of detail without being empirically incorrect.

[7] The description of Ansoff as the "Father of Strategic Management" can be found in multiple sources, many of which attribute the phrase to Henry Mintzberg.

[8] M.E. Porter outlined his five forces and value chain in *Competitive Strategy* (1980) and *Competitive Advantage* (1985) respectively. For more succinct discussions, see M.E. Porter, "How Competitive Forces Shape Strategy," *Harvard Business Review* (March–April 1979), 137–145; and M.E. Porter, "What Is Strategy?" *Harvard Business Review* (November–December 1996), 61–78.

[9] M.E. Porter, "The State of Strategic Thinking," *The Economist* (May 23, 1987), 21.

[10] Henry Mintzberg, "The Fall and Rise of Strategic Planning," *Harvard Business Review* (January–February 1994), 108.

[11] Jeanne Liedtka, "Strategic Thinking: Can It Be Taught?" *Long Range Planning* 31, no. 1 (1998), 121. In this article, Liedtka provides five elements of strategic thinking that demonstrate both analytical and creative processes: strategic thinking incorporates a systems perspective; it is intent-focused; involves thinking in time; is hypothesis-driven; and is intelligently opportunistic.

[12] Bernard Brodie, "Strategy as an Art and a Science," lecture to the Naval War College, September 18, 1958, *Naval War College Review* (Winter 1998).

[13] See Liedtka, 122; and Gary Hamel and C.K. Prahalad, "Strategic Intent," *Harvard Business Review* (July–August 2005), 148.

[14] Charles Allen and Stephen Gerras, "Developing Creative and Critical Thinkers," *Military Review* (November–December 2009), 77.

[15] Liedtka, 123.

[16] The Strategic Thinker Foundation is a more explicit variant of a previous Foundation ("Know Yourself, Know Others, and Reflect") found in an unpublished USAWC faculty paper by Dr. Richard Meinhart.

[17] Army senior leader not identified due to the USAWC policy of nonattribution in effect during his visit. He said a second question is also central: "Am I growing the right kind of leaders for the future?"

[18] Eric K. Shinseki, "Remarks at the AUSA ILW Army Medical Symposium, San Antonio, TX, July 22, 2009," linked from the U.S. Department of Veteran Affairs Web site, available at <http://www1.va.gov/opa/speeches/2009/09_0722.asp>.

[19] Liedtka, 124.

[20] Russell Ackoff, *Creating the Corporate Future* (New York: John Wiley and Sons, 1981), 17.

[21] Henry Mintzberg, "Crafting Strategy," *Harvard Business Review* (July–August 1987), 68.

[22] Liedtka, 123.

[23] Loizos Heracleous, "Strategic Thinking or Strategic Planning?" *Long Range Planning* 31, no. 3 (1998), 481–487.

[24] Ibid., 484.

[25] The author's very brief summation and analysis of events relayed in Bob Woodward's book on the subject. See Bob Woodward, *The War Within: A Secret White House History 2006–2008* (New York: Simon and Schuster, 2008).

[26] Don M. Snider, *The Future of the Army Profession*, 2ᵈ ed. (Boston: McGraw-Hill, 2005), 385.

[27] Field Manual (FM) 5–0, *The Operations Process* (Washington, DC: Headquarters Department of the Army, March 2010), 3–1. There is a design school within the 10 strategy formulation schools identified by Mintzberg, and design thinking can be used as a variant of strategic thinking. However, Joint Publication 5–0 defines *design* as an operational-level construct. The Army definition does not specify levels, but application to date has been at the operational/theater-strategic level (and FM 5–0 discusses the need for design at lower echelons as well).

[28] Renny McPherson, "The Next Petraeus," *Boston Globe*, September 26, 2010.

Pulling Back

The Industrial College of the Armed Forces (ICAF), one of three Joint Senior Level Education Institutions, is an integral component of the Department of Defense's Joint Professional Military Education system. The college provides a 10-month academic program that awards its graduates a master's degree in resourcing the U.S. national security strategy. During orientation, the Dean of Faculty and Academic Programs welcomes the student body of approximately 320 military, government, and industry leaders and challenges them to embark on a journey to develop their strategic thinking skills.

The primary objective of the ICAF curriculum is to prepare students for work at the strategic leader level. This objective implies that students need to understand what strategic thinking is as well as develop those thinking skills required at the strategic leader level. While the entire ICAF curriculum is designed to enhance strategic thinking skills, the Strategic Leadership (SL) Department has particularly embraced this undertaking, as evidenced by the department mission statement: "to educate and develop leaders to bring strategic thinking skills and innovative approaches to the challenges of transforming organizations, and formulating and resourcing our future national security strategy."[1]

This article addresses the first half of this mission statement: to educate and develop leaders in strategic thinking skills. While multiple strategic thinking skills are discussed in the SL course, this article addresses one particular theory and several concepts for student reflection as they progress on their developmental journey. The *stratified systems theory* (SST)[2] explains why strategic leaders need to be strategic thinkers and offers a general overview of the difference in the nature of leader tasks and work among direct, operational, and strategic level leadership positions. The three concepts to be examined—*strategic thinking*, *conceptual capacity*, and *mental models*—provide a foundation for student understanding and development of strategic thinking skills. Thus, this article has a four-fold purpose. It is intended to enhance student understanding of why strategic leaders need to be strategic thinkers, what

Industrial College of the Armed Forces

National Defense University (Katherine Lewis)

the Curtain

Developing Strategic Thinkers at ICAF

By MARK McGUIRE

strategic thinking is, what a strategic thinker is, and how strategic thinkers are developed at ICAF.

Strategic Leader Skills

The types of strategic leader skills discussed in the SL course can be categorized as conceptual, interpersonal, and technical.[3] Many of the skills in these three categories are similar to ones that students have used during their careers, such as team-building, consensus-building, and critical thinking. However, a major premise in the SL course is that strategic leaders exhibit these skills to a different extent and in a different context than they did over the first 20 years of their career.

For example, consensus-building can be considered part of the interpersonal skill set. Strategic leaders using this skill have an enhanced requirement to deal with leaders outside of their chain of command—peers across other organizations, agencies, and nations. The increase in the requirement to use consensus-building skills coincides with a decrease in the degree of authoritarian power

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over the people whose cooperation is needed to solve problems and make decisions. Examples of strategic leaders who invested a great deal of their time building consensus include Generals Dwight Eisenhower as the Supreme Allied Commander and David Petraeus as the Multi-National Force–Iraq Commander.

Some strategic leadership authors emphasize one set of strategic leader skills more than others. For example, two authors suggest that the critical individual difference variable in leader effectiveness is the conceptual competence to do the required work.[4] Another suggests that social capacities are equally as important as conceptual ones. This author defines social capacities as including both interactional skills (persuasion, negotiation, conflict management) and reasoning skills of social perceptiveness (the capacity to be insightful regarding the needs, goals, demands, and problems of multiple organizational constituencies) and judgment.[5] ICAF students study the interpersonal (team-building, consensus decisionmaking, and negotiation) and the social intelligence (emotional, political, and cultural) skills in the SL course and are encouraged to reflect on which set of skills is most important for strategic leaders via

their own experiences as well as through questioning the many military, government, and industry leaders who are guest speakers during the 10-month program. Regardless of which type of strategic leader skill is considered most important, the current literature recognizes that strategic thinking is a requisite skill.

Every Leader a Strategic Leader?

What makes strategic leaders different than leaders at other levels? SST provides a general overview of the difference in the nature of leader tasks and work among direct, operational, and strategic leadership positions. This theory was developed based on initial research of an industrial age organization in the United Kingdom in the 1960s and tested via interviews in a study with Army three- and four-star flag officers.[6] Students are introduced to SST in the first week of school through an article that describes how General Colin Powell, then Chairman of the Joint Chiefs of Staff, visited National Defense University annually to convey to students the differences between leadership at the operational and strategic levels—positions from which some students had come and to which some might go.[7] SST supports Powell's arguments

Students create and recommend new national security strategy report during exercise

by depicting how performance demands change qualitatively at particular points in the organizational structure:

The model contains three layers that reflect three functional domains. These layers incorporate seven strata . . . each successive layer and stratum represents an increasingly complex operating environment with a longer

that every leader is a strategic leader. The argument suggests that in today's real-time, around-the-clock media coverage environment, every leader's decision has the potential to make a strategic impact. Granted, leaders at direct and operational levels of organizations can and do make international news and can have a strategic impact at any time, but just having a strategic impact does not constitute

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leaders at direct and operational levels of organizations can have a strategic impact at any time, but just having a strategic impact does not constitute being a strategic leader

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time span for the conduct of leadership processes. In each of these seven levels, there is an explicit complexity of work, which may be defined not only by the scope and scale of the work, but also by the required cognitive processes of incumbents.[8]

The concept of time span used in the SST is an index of the leader's scope of vision of action over time as well as a measure of the leader's ability to provide a meaningful context for subordinates.[9] The authors of the SST claim that the mental models of strategic leaders must be more complex than those of leaders at lower organizational levels to accommodate the many more causal variables and the interconnections among them in the environment.[10] The research results of the SST strongly suggest that strategic thinking skills are essential for effective strategic leaders.

Despite Powell's lectures and the research provided by SST, some still posit

being a strategic leader, who is someone who continuously performs the requisite work and operates on the time horizon as addressed in the SST.[11] Thus, a strategic leader is someone

who is immersed in the thinking, decision-making, planning, resourcing, and execution required by the work at that level, not simply a leader whose actions or decisions may have a single or an occasional strategic impact. Given this examination of the SST as the foundation for understanding strategic leadership and the necessity for strategic leaders to be strategic thinkers, students next explore what strategic thinking is.

What Is Strategic Thinking?

Several authors have proffered a definition of strategic thinking, three of which are outlined here. Gregory Foster states that strategic thinking is the "very essence of strategic leadership" and is an expected quality of leaders at the upper echelons of organizations, institutions, or states that claim superpower status. He defines *strategic thinking* as having "far less to do with substantive content of what one thinks about than with the process of how one goes about thinking."[12] Finally, Foster claims that leaders who think strategically must:

take the long view, to focus on the big picture, to recognize the inherent interrelatedness of all things otherwise seemingly unrelated, to appreciate the residual and hidden consequences of action (and inaction), to anticipate and prevent unwanted events and conditions, and to identify the underlying causes of big problems rather than reacting to the more proximate, visible symptoms of the moment that dominate politics, public policy, and public management.[13]

ICAF students travel to conduct fieldwork at sites related to national security

Another definition of strategic thinking proposed by Mark Grandstaff and Georgia Sorenson is that it:

focuses more on long term problems and processes from a systems perspective rather than short term crises, and deals with more tenuous situations that are not susceptible to easy answers. ST [strategic thinking] includes different lenses and thought processes that are useful in any endeavor, but they are critical for senior leaders in a time of accelerating change that brings both threats and opportunities. In short, ST deals with problems that are much wider in scope, more intertwined with other problems, laden with ethical dilemmas, and that sometimes must be managed rather than solved.[14]

T. Owen Jacobs does not directly define strategic thinking but does offer that the ICAF experience focuses on thinking skills in general and strategic capacity in particular. Jacobs defines *strategic capacity* not so much as the different facts that the decisionmaker knows, but rather as the meaning the facts have within the strategic context. Thus, he contends that the primary objective at ICAF is to build the meaning-making skills of analysis, synthesis, and evaluation in students, as those will be the tools students will use during the remainder of their career and beyond. Similar to the concept of strategic thinking, Jacobs defines a strategic leader's *conceptual and decision skills* as the ability to:

gather information from external and internal sources, make sense of it, and provide interpretations to subordinate echelons. They frequently are in a better position than most others to have the "big picture" information needed to understand a complex unfolding situation in a way that permits early adaptive action. The importance of this critical function stems from the very long time-spans required for strategic initiatives to get planned, resourced, and implemented. Lead-time is consequently of immense value. To the extent that leaders can think further ahead, or think through complexity faster, they can create lead-time advantage for their organizations that can then be turned into competitive advantage.[15]

Jacobs goes on to identify seven key functions concerning a strategic leader's conceptual skills that can be used to enhance this competitive advantage: environmental

scanning; decisionmaking where options are consequential, situations may not have clear cause-and-effect outcomes, and/or a plausible course of action may not yet have been developed or identified; reducing complexity; systems understanding; understanding indirect effects; future focus and vision; and proactive reasoning.[16]

A synthesis of the three definitions above may provide the best explanation of what is involved in strategic thinking. All three of the aforementioned definitions

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each of our mental models is shaped by our experiences and hence carries all the biases from the experiences with it

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offer several similar characteristics about the nature of strategic thinking. These characteristics include aspects of the required long-term, multiple, and systems (big picture) perspective in dealing with more complex problems that have more indirect, consequential, and far-reaching outcomes than nonstrategic thinking. There is also an appreciation that strategic thinking requires a proactive and anticipatory nature in scanning the environment, and identifying and dealing with future threats and opportunities.

In addition to the aforementioned qualities of strategic thinking, the SL course addresses several specific types of skills that are important components of strategic thinking (see table). While students certainly used these thinking processes and exercised these skills in their previous leadership experiences, the scope and quality (power) of the mental models used in employing these skills at the strategic leadership level are what set them apart.

The SL course also introduces students to the concept of the *mental model*, or the decisionmaker's dynamic representation of the decision space with which he or she must deal. It can be considered a mini–decision support system as it reveals cause and effect linkages if it is accurate and comprehensive.[17] Students are told that they will read the newspaper differently by the time they graduate from ICAF because they will change and develop their mental models on all aspects of national security issues as they progress through the program. Peter Senge states that "mental models are deeply ingrained

assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action."[18] Awareness that everyone has mental models and that they may be susceptible to individual biases, memory faults, and perception errors is a critical first step in student development. Each of our mental models is shaped by our experiences and hence carries all the biases from the experiences with it. That is why it is so important for strategic leaders to be aware of their own biases and limitations, to solicit other perspectives in thinking and decisionmaking, and to continue to expand their exposure to other sources of perspectives to enhance their own mental model of situations and problems.

Strategic Thinking Skills Addressed in the Strategic Leadership Course
Creative thinking
Critical thinking
Intuitive thinking
Conceptual capacity
Environmental scanning
Future focus and vision
Mental models
Metacognition/self-awareness
Proactive reasoning
Reflective thinking
Reframing/perspective-taking
Systems thinking
Understanding indirect effects and consequential decisionmaking

What Is a Strategic Thinker?

Quite simply, a strategic thinker is someone who exercises strategic thinking. In order to understand how to develop strategic thinkers, a more in-depth look at the concept is warranted. A strategic thinker is one who has and can use mental models that are sufficiently complex to address strategic issues. Becoming a strategic thinker depends on having the requisite conceptual capacity for and experience from which these mental models are built. Conceptual capacity, according to Philip Lewis and T. Owen Jacobs, is the "breadth and complexity with which an individual organizes his or her experience . . . [it] reflects the level of sophistication of an individual's organizing processes . . . [and is a] description of the nature of the meaning making process."[19] As these experiences become increasingly complex, with more obscure cause-and-effect relationships, individuals require more abstract thinking abilities to develop the requisite cognitive maps.[20] Lewis and Jacobs suggest that for leaders, "There are advantages to having a conceptual work capacity that somewhat exceeds one's current conceptual work requirements."[21]

So conceptual capacity, or cognitive horsepower, is the initial component required to be a strategic thinker. But a strategic thinker must also possess the requisite experience of operating and making decisions in a strategic context. George Forsythe and H.F. Barber reinforce the importance of challenging, high-level work experiences in developing the leader's cognitive structures required for action at the strategic level.[22] This experience is not typically obtained in a person's first 20 years of leadership, and thus most students who graduate from ICAF are not finished strategic thinkers but only on the path toward becoming one.

While conceptual capacity and strategic leader experience are essential for becoming a strategic thinker, mastery in the art of strategic thinking is achieved by understanding when and how to exercise the strategic thinking skills listed in the table. A proposed description or definition of the mastery involved in being a strategic thinker is one who possesses the conceptual understanding of the increasing levels of sophistication in the breadth and complexity of the variables in the strategic environment. The strategic thinker is conscious of the limitations of her/his mental models and understands how to compensate for them. She/he uses multiple frames of reference (her/his own and that of her/his executive team) and a multidimensional systems perspective to solve complex wicked problems. She/he reframes the problem as more information/evidence from the environment is acquired and continuously considers the long-term, multiple-order consequences of her/his projected decisions.

Developing Strategic Thinkers at ICAF

ICAF provides a valuable transformational opportunity for students to develop their strategic thinking skills. While the curriculum cannot provide direct, hands-on strategic level experience, it is designed to enhance student conceptual capacity as well as to provide vicarious strategic-level experience through its seminar discussions, readings, and exposure to strategic leaders across the military, government, and private sector via the guest speaker program. According to Forsythe and Barber, "It is not enough simply to expose students to a large amount of information; they must be challenged to organize the information into meaningful categories and to form interconnections among elements."[23] Through reading and reflecting on assigned readings and contributing to seminar discussions throughout the year, students learn and develop the concepts that define the strategic environment and national security issues.

Each of the ICAF courses tasks students via exercises, paper requirements, and discussions to develop their conceptual capacity by analyzing, evaluating, and synthesizing the knowledge they acquire. And while ICAF pushes them through its curriculum, it will be up to each student to make sense of these complex global and national security issues. For those students willing to apply themselves to the readings, papers, and exercises and, more important, to reflect upon, discuss, and challenge their current mental models of the many global and national security issues, then they will see a remarkable growth in their conceptual capacity by graduation. While this year cannot provide students the requisite experience of a strategic leader, it will serve as a catalyst to enhance student conceptual capacity, which is essential as the foundation for becoming a strategic thinker. **JFQ**

NOTES

[1] Industrial College of the Armed Forces, Department of Strategic Leadership, 2011 Strategic Leadership Syllabus and Anthology, i.

[2] T. Owen Jacobs and Elliott Jaques, "Leadership in Complex Systems," in *Human Productivity Enhancement*, ed. Joseph A. Zeidner, vol. 2 (New York: Praeger, 1987), 7–65.

[3] T. Owen Jacobs, *Strategic Leadership: The Competitive Edge*, rev. ed. (Washington, DC: National Defense University, 2009), 84–88.

[4] Philip M. Lewis and T. Owen Jacobs, "Individual Differences in Strategic Leadership Capacity: A Constructive/Development View," in *Strategic Leadership: A Multiorganizational-level Perspective*, ed. Robert L. Phillips and James G. Hunt (Westport, CT: Quorum, 1992), 121–137.

[5] Stephen J. Zaccaro, *The Nature of Executive Leadership: A Conceptual and Empirical Analysis of Success* (Washington, DC: American Psychological Association, 2001), 293–294.

[6] Jacobs and Jaques.

[7] George McAleer, "Leaders in Transition: Advice from Colin Powell and Other Strategic Thinkers," *Military Psychology* 15, no. 4 (October 2003), 309–322.

[8] Zaccaro, 26.

[9] Ibid.

[10] Ibid.

[11] Jacobs, 35; Zaccaro, 25–30.

[12] Gregory Foster, *Teaching Strategic Thinking to Strategic Leaders* (Washington, DC: National Defense University, 2005), 2–3.

[13] Ibid.

[14] Mark Grandstaff and Georgia Sorenson, *Strategic Leadership: The General's Art* (Vienna, VA: Management Concepts, 2009), xxiv.

[15] Jacobs, 86.

[16] Ibid., 86–88.

[17] Ibid., 67.

[18] Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Doubleday, 1990), 8, 174–176.

[19] Lewis and Jacobs, 124.

[20] Zaccaro, 26.

[21] Lewis and Jacobs, 132.

[22] George B. Forsythe and H.F. Barber, "Military-Strategic Thinking: Expert-Novice Differences in the Structure and Content of Cognitive Representations," paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, California, April 1992.

[23] Ibid.

The Joint Officer
A Professional Specialist

By SCOTT A. CARPENTER

General Richard Myers, USAF (Ret.), addresses students and faculty of Joint Advanced Warfighting School at Joint Forces Staff College

National Defense University

Men mean more than guns in the rating of a ship.　　—Captain John Paul Jones

In 1986, Congress passed the Goldwater-Nichols Department of Defense (DOD) Reorganization Act to improve Service effectiveness in executing joint operations. Title IV of the act called for the establishment of a Joint Specialty Officer (JSO) designation to identify those officers particularly educated and experienced in joint matters.[1] The goal was to increase the quality, stability, and experience of officers assigned to joint organizations, which in turn would improve those organizations' outcomes.

Despite overwhelming efforts to strengthen joint professional military education, little has occurred to exploit the experiential skills and competencies derived from joint assignments. Because of its failure to designate career paths and implement a career management plan for joint officers, DOD is losing valuable expert knowledge. This article

explores the DOD Joint Officer Development (JOD) approach and highlights the effects of career management methodologies on joint officers. It recommends that DOD identify and implement a specific career management plan for joint professionals, including designated career paths, which will improve the performance and effectiveness of joint organizations.

Background

Goldwater-Nichols instituted comprehensive changes in the organizational structure and functional authority of DOD. Prior to the act's passage, a congressional report characterized the overall performance of officers assigned to joint duty as follows:

Tour assignments of the Joint Staff officers are only about 30 months on average, even less for

general and flag officers. Few [staff officers] have had formal training in Joint Staff work and even fewer [have] previous Joint Staff experience. Only a small percentage have completed joint schooling specific to Joint duty. . . . The average Joint Staff officer, while knowledgeable in his Service specialty, has limited breath [sic] of knowledge of his own Service, much less a broad understanding of his sister Services.[2]

The authors of Goldwater-Nichols believed DOD needed to develop a joint organization perspective for how military forces should operate.

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To ensure the proper career development of officers assigned to joint organizations, Goldwater-Nichols tasked the Secretary of Defense to establish career guidelines, including types of duty assignments, for officers designated as joint specialists. Clearly, Congress intended for JSOs to serve a unique purpose in the joint organization—to provide comprehensive, inherently joint strategic advice to senior military commanders and top civilian officials. Likewise, Congress also directed the purposeful career development of JSOs to serve as the mechanism to generate and retain joint expertise, thereby transforming the military into a cohesive joint organization.

In 1989, Representative Ike Skelton (D–MO) led a House Armed Services Committee Panel on Professional Military Education to review DOD implementation of key Goldwater-Nichols's provisions. In conducting its review, the Skelton Panel found it essential to fully understand the meaning and purpose of a joint specialist: "Parenthetically, the panel is convinced that defining the JSO is the crux of the problem posed for DOD by all of the Title IV joint officer personnel policies."[3] In developing its portrait of a JSO, the Skelton Panel offered a comparative description of a non-JSO. Furthermore, it elaborated on the interplay between JSOs and non-JSOs serving on the Joint Staff, stating, "In fact, non-JSOs are essential to the proper functioning of the joint system because they bring current Service expertise and credibility to bear in considering the solutions to joint problems."[4] Conversely, JSOs would provide better continuity, more objectivity, and increased experience levels in joint operations beyond the Service perspective. While both are essential in a joint organization, the variance of diversity of education and professional experience promotes synergy.

The Skelton Panel also recognized the need to select theoretical strategists and strategic advisors from among those officers skilled in the application of strategy.[5] Identification is important because the characteristics unique to theoretical strategists demand a more in-depth professional development scheme.[6] Representative Skelton wrote that developing leaders and strategists is a process that comes from years of careful study, reflection, and experience, citing General John Galvin: "We need senior Generals and Admirals who can provide solid military advice to our political leadership . . . and we need

officers who can provide solid military advice, options, details—the results of analysis—to the Generals and Admirals."[7]

Job Characteristics and Tenure

Categorizing jobs as either developing or using jobs is one methodology used to articulate the functional description that various positions serve in an organization.[8] From a utility perspective, it is desirable for officers to remain in *developing jobs* for the minimal time necessary to acquire the intended skill set before moving to the next developing job or into a using job. However, frequent turnover is suboptimal from the organization's perspective. While it creates a larger pool of officers with general experience, it does so at the expense of maximizing professional expertise and organizational performance. These costs manifest themselves in lower quality performance, workflow interruptions, and splintering of relationships—all of which impact effectiveness and organizational outcomes.

Using jobs, on the other hand, are ones in which the officer, based on accumulated competencies, proficiencies, and/or experiences, is expected to perform key functions

management is vital to the success of the organization.[10]

Ultimately, tenure of assignment must be weighed against the value of its impact on organizational success. It is in the best interest of the joint organization to have longer tenured personnel because tenure is more relevant to organizational effectiveness than it is to determining who has received a valid joint experience.[11]

The Joint Officer Development Vision

In 2005, the Chairman of the Joint Chiefs of Staff published his vision for Joint Officer Development. The JOD concept is based on the guiding principle that joint officers are derived from Service officers.[12] The stated objective is to produce the largest pool of fully qualified, inherently joint officers at the O–6 level for promotion to general or flag officer (GO/FO). Additionally, the Chairman asserts that "attaining the rank of colonel and captain signifies that an officer fundamentally thinks in a joint context . . . and thereby possesses an unprecedented ability to integrate capabilities across the joint force."[13] But does attaining the rank of colonel or captain, or any rank for that matter, signify that an

familiarity with joint operations from a Service perspective does not transform into joint competency

on behalf of the organization. Within the organization, using jobs usually demand a high degree of accountability and stability and are often critical to the success of the organization.[9] Longer tenure in these assignments builds greater depth of expertise, promotes complementary relationships, and allows the officer to reach a point of sustained effectiveness.

In general terms, individuals pass through developmental assignments as they rise in an organization. Since developmental opportunities are often limited, the organization needs an assignment management plan to move individuals systematically through a sequence of positions that develops particular competencies valuable to the organization and makes the individual competitive for a using job at the higher level. A rational sequence of developing jobs can be described as a professional career path. These identifiable job patterns suggest that accumulated experience is not serendipitous; therefore, career

officer is capable of integrating joint forces, especially when there is no requirement for the officer to serve in a joint assignment prior to being promoted to O–6?

The JOD concept as outlined by the Chairman is not a complete solution. Familiarity with joint operations from a Service perspective does not transform into joint competency. The results of the Navy's Fiscal Year 2012 Major Command Board reflect the haphazard and nonbinding approach to joint officer development. The board, which convened in November 2010, selected 41 Surface Warfare Officers to serve in O–6 command positions. The Surface Warfare Community considers selectees to be its top officers, those with potential to serve as flag officers. Of the 41 officers selected, just 13 (31.7 percent) have completed Joint Professional Military Education (JPME) Phase II, and only 11 (26.8 percent) are joint qualified. More alarming is the fact that two of the officers selected have not yet completed

JPME Phase I.[14] These results give a much different impression of the significance of joint officer qualification to one's career. From the individual officer's perspective, why serve in a joint assignment when more than three times the officers being selected to serve in a flag officer milestone assignment have no joint experience?[15]

Over the past 20 years, numerous studies have called for DOD to identify career paths consistent with the cumulative building of deep knowledge and experience essential to the most demanding joint billets.[16] The objective of JOD should be directly tied to improving the effectiveness and performance of the joint organization. Unfortunately, the objective of creating the largest pool of joint qualified officers for promotion to GO/FO effectively translates into maximizing throughput—and thus correspondingly shortening tenure in joint assignments. It removes the impetus for the Services to assign qualified officers to a second joint assignment because the Services must use every available opportunity to increase their pool of qualified officers.

Joint Officer Management

The DOD plan for Joint Officer Management (JOM) is designed to develop officers progressively in joint matters throughout their careers. It includes alternate ways that are currently being missed to recognize and award officers with joint experience credit, as long as the position and/or context of work are relevant to joint matters.[17] The JOM plan is centered on a flexible qualification system that benefits the busy officer and a Service-oriented officer management system. According to the Chairman, "Officers and Services will find it easier to reconcile Service and joint assignment options; consequently, more assignments that deepen an individual officer's personal occupational competency will be easier to link to achieving the common objective of JOD."[18]

While the JOM plan provides the mechanism for how officers acquire joint qualifications, it lacks a means by which DOD will develop and utilize these officers. Organizations do not exist for the purpose of providing officers joint experience, traditional or otherwise. On the contrary, the purpose of jointness is to develop a highly effective joint organization.[19] Nonetheless, the failure is the result not of implementation but rather the DOD strategic approach to JOM. The concept breaks down at the point of developing the proficiency level of joint officers. Relatively speaking, current proficiencies never improve beyond a baseline level because there is no mechanism to retain joint expertise in the joint organization. Without purposeful management and utilization of acquired joint expertise, there is no net gain in joint organizational performance.

Joint Specialty Officer Revisited

Goldwater-Nichols sanctioned the joint specialist as a professional of the joint community. Establishment of joint officer career paths and career management guidelines consisting of developing jobs, advanced education opportunities, and using jobs at the upper levels of our national and military organizations would better support JOD. To move forward, DOD should ask specific questions regarding the value and demand for joint officers, principally: What is the relative importance of joint officer experience? How does it relate to joint organizational outcomes? What career paths and management policies will sustain its development?

In congressional testimony in 2009, Lieutenant General David Barno, USA (Ret.), observed that our current officer management system paradoxically identifies expert tacticians for promotion and then expects them to magically recreate themselves as strategic leaders. His testimony highlighted the fact that the Services' management policies are almost exclusively biased toward the tactical level and command, and that those who pursue specialization, even in areas as vitally important as national security and military strategy formulation, risk upward mobility because Service policies do not value this kind of expertise.[20] Nonetheless, if so much emphasis is given to the importance of tactical experience in developing combat arms officers, one could conclude that experience is the de facto means of developing competencies and professional expertise.

Joint expertise comes from increasingly challenging and reinforcing joint assignments. However, there are no definitive, qualifying measures of effectiveness regarding joint officer proficiency or joint expertise. Observations by various joint staff officers and senior leaders indicate that on average, joint staff officers experience a 7- to 12-month learning curve.[21] To perform their duties successfully, 75 percent of officers reported that prior joint experience was either required or desired.[22] Table 1 summarizes survey results of average effectiveness ratings for prior education, training, and experience in preparing officers for their joint assignment.

Career Management Models

The selection of an appropriate career development model largely depends on whose perspective is being considered: the individual officer, the joint organization, or the officer's Service organization.[23] Currently, the Services control officer development. They educate, assign, promote, and manage personnel based on their own need for highly qualified

U.S. Navy (Daniel Viramontes)

Coalition liaison officers and U.S. Joint Task Force Odyssey Dawn members discuss command and control of operations to repatriate refugees fleeing violence in Libya

Table 1. Survey Results of Officer Effectiveness Ratings

Institution/experience	Number of respondents	Average effectiveness *0 = no help* *3 = moderately helpful* *5 = exceptional*
Advanced JPME	19	4.0
Civilian university	1,005	2.15
Content specific training/Other	250	3.6
Intermediate-level education/JPME I	959	3.2
JPME II (10- or 12-week course)	309	2.7
Joint Staff, Pentagon	59	4.05
Previous staff officer billet	595	3.6
Senior PME/JPME II (War college equivalent)	194	2.8
Service academy	291	2.45
Service command (Squad, wing, unit, company, or battalion-level command)	274	3.0

Source: U.S. Joint Chiefs of Staff, *The Joint Staff Officer Project: Final Report* (Washington, DC: U.S. Joint Chiefs of Staff, April 2008), 58.

officers to serve as commanders and on Service-specific headquarters staffs. However, Service-derived career development models do not necessarily foster the competencies needed to serve in an organization focused on joint matters and strategic issues. The value of experiential development of joint competencies, and of those who possess this expertise, needs to be recognized as an asset of the joint organization. Unfortunately, the JOD concept does not align development of joint expertise with joint assignment requirements.

To create an incentive for officers to become joint specialists, DOD must generate a demand signal for this expert knowledge and designate a career path that allows these officers to flourish. To achieve this, JOM policies should focus on managing officers whose competencies contribute to joint organizational outcomes.[24] Joint assignments would be linked to form a series of developing and using jobs creating career paths for joint specialists. These paths would represent viable career tracks leading to senior-level joint assignments that demand a high degree of joint expertise or are suitable for a theoretical strategist.

An Interagency Assignment Officer Career Management study conducted by RAND in 1999 offers examples for how DOD could manage a cadre of joint specialists. The authors described the career model being used for managing combat arms officers as

managing the "generalist."[25] The objective of this model was to develop breadth of knowledge by exposing officers to various positions, primarily within their specific career field. Although it was Service-oriented, its goal was to develop leadership competencies applicable in a range of positions leading to command.

The RAND study also considered various career models applicable to managing a specialized group of officers, such as a cadre of joint officers. These career models can be described as:

- managing leader succession: joint officers are managed in a manner to identify those qualified to fill the top Service positions (higher promotion rates, shorter tour lengths)
- managing competencies: emphasis is on developing intensely experienced officers in joint matters through longer and repeated joint assignments
- managing skills: used to distribute joint experience throughout the officer corps[26]
- managing by exception: used to fill available positions from the pool of officers scheduled to rotate at the time of availability.

Tables 2, 3, and 4 capture characteristics associated with officers and the career model.

In 2009, RAND completed an analysis that compared the managing leader succession, managing competencies, and managing

skills career models. Table 5 illustrates the comparison of career model outcomes.[27]

Based on table 5, the managing leader succession model appears to be superior. However, an examination of the assumptions behind each model and the fact that the comparisons are made relative to average non-joint combat arms officers are significant to interpreting the results.

First, it is important to note that when considering the managing skills model, there is no relative difference for promotion between those combat arms officers who have joint experience and those who do not. This can be attributed to the fact that average officers promote and retain equally. Second, the analysis of using the managing competencies model for joint officers, which results in a slightly less than average promotion rate to O–6 compared to average non–joint qualified combat arms officers, is more indicative of completing an O–5 command assignment (keep in mind those officers who become part of a cadre of joint officers will serve in multiple joint assignments instead of command assignments, which make them relatively less competitive for promotion to O–6). It is also important to consider that if DOD only

joint experience in excess or at the wrong juncture in a career can be detrimental, even for officers who are considered higher quality

prescribes a small number of O–6 jobs and no GO/FO jobs for joint officers managed by the competency model, promotion opportunities beyond O–5 will be extremely limited; therefore, the majority of joint officers will not remain in the military beyond that level.

The relatively shorter joint assignment in the managing leader succession model is consistent with a pattern of developing leaders. This model presumes that only higher quality officers would be sent to joint assignments but would not remain in those jobs for long, and only a minimal number would serve a second joint assignment prior to promotion to GO/FO.[28] Further inspection of this model also reveals that joint experience in excess or at the wrong juncture in a career can be detrimental, even for officers who are considered higher quality.[29] Other inherent aspects of the managing leader succession model

Table 2. Depth and Currency of Joint Expertise at Each Grade

Career Model	O–4	O–5	O–6
Managing leader succession	None	Low	Medium; current through education only
Managing competencies	Low	Medium	Deep; current through education and experience
Managing skills	None	Low	Medium; current through education only
Managing by exception	None	None	Low; current through education only

Source: Harry J. Thie, Margaret C. Harrell, and Robert M. Emmerichs, *Interagency and International Assignments and Officer Career Management* (Santa Monica: RAND, 1999), xvii.

Table 3. Joint Positions Filled by Officers with Prior Joint Experience

Career Model	O–4	O–5	O–6
Managing leader succession	None	Few	Most
Managing competencies	Half	Most	Most/all
Managing skills	None	Few	Most
Managing by exception	None	None	Few

Source: Harry J. Thie, Margaret C. Harrell, and Robert M. Emmerichs, *Interagency and International Assignments and Officer Career Management* (Santa Monica: RAND, 1999), xvii.

Table 4. Characteristic Quality of Officers in Each Model

Career Model	Nature
Managing leader succession	Likely future general/flag officer
Managing competencies	Joint expert/theoretical strategists
Managing skills	Typical Service experience, but perceived lower quality
Managing by exception	Assignment available

Source: Harry J. Thie, Margaret C. Harrell, and Robert M. Emmerichs, *Interagency and International Assignments and Officer Career Management* (Santa Monica: RAND, 1999), xvii.

include a substantial number of GO/FO billet opportunities associated with combat arms officers' career tracks—a contributing factor to promotion and retention rates. Finally, comparing the results of the managing leader succession and managing skills models suggests that the increased promotion and retention rates are more indicative of the higher quality officers portrayed in the managing leader succession model and not at all related to serving in a joint assignment.

Generally speaking, existing military officer management practices resemble those found in the managing leader succession model. However, this model provides more weight to the individual officer's and the Services' perspectives than to the joint perspective.[30] Given these assumptions, the analysis shows that the managing leader succession model is capable of producing, promoting, and retaining more officers with joint experience.[31] Admittedly, this fulfills the objective outlined in the Chairman's JOD plan. However, it conflicts with the needs and requirements of the joint organization as demonstrated by the findings of numerous studies, reports, and congressional reviews. Although joint officers are not currently managed as a separate group, the RAND study found that when the joint organization's interests are given priority and the contribution of the work performed by joint specialists is considered valuable, the managing competencies model is preferred.[32]

Table 5. Summary of Differences Between Promotion and Retention in Management Frameworks Relative to Average, Non-Joint Officers

	Managing leader succession	Managing competencies	Managing skills
Promotion to O–5	>	>	=
Promotion to O–6	>	<	=
Promotion to O–7	>>	<<	=
Retention at O–4	>	=	=
Retention at O–5	>	<	=
Retention at O–6	>>	>>	=
Likelihood of second joint job at or before O–4	<<<	>	<
Likelihood of second joint job at or before O–5	<<	>>	<
Likelihood of second joint job at or before O–6	<	>>>	<
Tour length	<	>>	=

NOTE: Symbols indicate a comparison with the average and typical outcomes for the overall service. The symbols reflect comparisons based on typical Service outcomes, ranging from slightly more/less likely (>, <) to much more/less likely (>>>, <<<).

Recommendations

DOD must revisit the original idea of the joint specialist, the creation of which was intended to improve the performance and effectiveness of joint organizations. Because the Services are responsible for managing officer assignments, the Service perspective takes priority over the joint perspective when it comes to developing officers. Hence, joint qualification resembles a time-share approach where officers serve in a joint billet for a brief interlude before returning to their primary career path.[33] Tension exists between satisfying career advancement on the one hand, and expertise development on the other. A review of DOD's annual Goldwater-Nichols Act Implementation Reports from 1995 to 2005 is evidence that the Services have not shown due diligence in developing joint specialists or in filling critical joint assignments with properly qualified officers.[34]

An effective JOM framework would serve the joint organization better by developing the expertise that it values. It would recognize this expert knowledge as an asset of the joint organization by designing career paths to support its development and optimize its utilization. Joint specialists would build depth of expertise through interrelated and reinforcing joint assignments, faculty positions at military institutions, and postings to external agencies where military expertise is in demand or where DOD can enhance the whole-of-government concept. Additionally, strategists and regional specialists would be vetted from this cadre, provided doctorate level education opportu-nities, and assigned to key positions in the national security arena.[35]
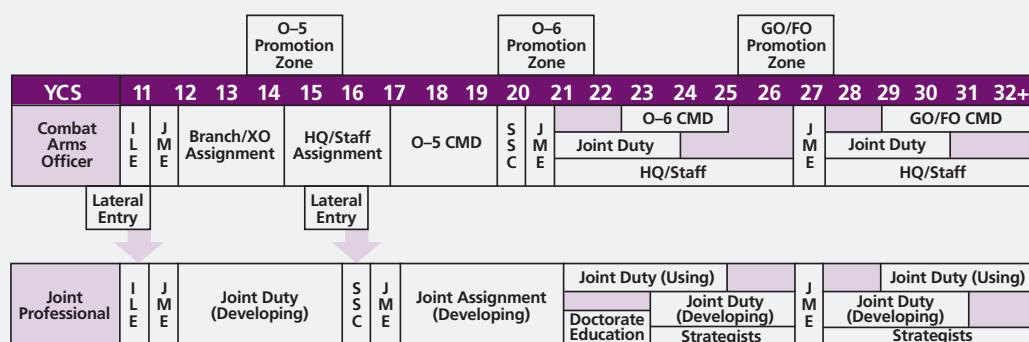
DOD could develop various architec-tures to create the joint officer community.[36] One possible construct would ideally reflect the JSO/non-JSO concept outlined in Goldwater-Nichols and expounded on by the Skelton Panel. For argument's sake, this cadre of joint professionals would equal half of the total joint duty assignment requirement. Joint officers would possess depth of joint knowledge, staff officer stabil-ity, and internal operational expertise: the core capabilities necessary to deliver the desired outcomes. They would create and preserve a body of knowledge and would serve as subject matter experts in joint matters, available to mentor, guide, and teach others.[37] Concurrently, their non-JSO counterparts—ideally, high-quality combat arms officers—would bring the newest operational concepts, current insight, and creativity to the joint organization. This self-reinforcing tandem would form a highly effective, agile team enhancing the effective-ness of the joint force.

To organize and staff this cadre of joint professionals, DOD could implement a lateral entry process similar to that shown below.[38] The career model would target officers at the 11- to 14-year point of their careers for lateral entry into the joint officer community for the remainder of their careers. Additionally, they would complete one of the Services' advanced operations studies programs and would serve longer assignments, up to 4 years, to capitalize on their experiences.[39]

Career management and assignment screening for joint officers would be handled via the establishment of a DOD Joint Officer Advisory Board composed of representatives from each of the Services. To preserve the joint perspective, this advisory board would have to reside at the DOD level, perhaps in the Office of the Undersecretary of Defense for Personnel and Readiness.[40] The screening board would be responsible for approving Service nominations for joint officers, con-ducting periodic reviews to ascertain an offi-cer's development, and screening each joint officer for follow-on assignments or advanced education programs. Using specific language to characterize those joint officers with the potential for higher level assignments or spe-cific education programs, the advisory board's results would be included in each officer's performance report and also coordinated with the Services' promotion board proceedings.

Joint specialists aspiring to the most demanding joint billets should know what kind of joint expertise is needed to do the job.[41] Therefore, a major role of the Joint Officer Advisory Board would be to desig-nate career patterns for joint professionals. The objective is to administer the sequenc-ing of developing jobs leading to top GO/FO using jobs for joint professionals. The key is to identify senior-level positions that would be filled exclusively by joint special-ists, which would then dictate prerequisite assignments to develop the necessary cre-dentials. Possible candidates for top-level joint professional positions could be Direc-tor or Deputy Director of the Joint Staff, J5

Lateral Entry Process

YCS: Years of Commissioned Service
ILE: Intermediate Level Education
JME: Joint Military Education
SSC: Senior Service College

or J7 Directors, or President of the National Defense University.

Although DOD has achieved significant improvements in executing joint operations since Goldwater-Nichols, it has come up short in developing a comprehensive approach for the utilization of joint professionals. The right approach would include a systematic process of reinforcing education and joint assignment experiences to purposefully yield expert knowledge in joint matters. The need for joint professionals is already high, and demand is increasing. All that remains is for DOD to fully recognize the value of joint officers and the significance of their contribution to joint operations. **JFQ**

NOTES

[1] Goldwater-Nichols Department of Defense Reorganization Act of 1986, Public Law 99–433, 99th Cong., 2d sess., October 1, 1986, Title IV, sec. 401, available at <www.jcs.mil/page.aspx?id=29>.

[2] Bill Nichols Department of Defense Reorganization Act of 1986, "Report to the Committee on Armed Services on H.R. 4370," 99th Cong., 2d sess., H. Rep. 99–700, 40–42, available at <https://digitalndulibrary.ndu. edu/cdm4/document.php?CISOROOT=/goldwater&CISOPTR=1056&REC=1>.

[3] House Committee on Armed Services, Panel on Military Education, "Report of the Panel on Military Education of the One Hundredth Congress of the Committee on Armed Services," 101st Cong., 1st sess. (Washington, DC: Government Printing Office, April 21, 1989), 52.

[4] Ibid., 57.

[5] Ibid., 28.

[6] Being a strategist is, in reality, a specialty. In place of commanding, the strategist's career experience consists of recurring educational programs and operational assignments. Repeated strategic-level assignments provide the cornerstone of their development, setting them apart from their contemporaries. See Charles P. Moore, "What's the Matter with Being a Strategist (Now)?" *Parameters* 39, no. 4 (Winter 2009/2010), 9, 14–16.

[7] U.S. House of Representatives Committee on Armed Services, Subcommittee on Oversight and Investigations, *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel* (Washington, DC: Government Printing Office, 2010), 11. Notable behind-the-scenes strategic advisors such as John Nagl, Paul Yingling, H.R. McMaster, and Pete Mansoor were known for offering expert advice and insight to their bosses. See Robert H. Scales, "Return of the Jedi," *Armed Forces Journal* 145, no. 3 (October 2009), 22.

[8] Margaret C. Harrell et al., *Aligning the Stars: Improvements to General and Flag Officer Management* (Santa Monica: The RAND Corporation, 2004), xvii.

[9] Ibid., 18.

[10] Ibid., 16.

[11] Margaret C. Harrell et al., *A Strategic Approach to Joint Officer Management: Analysis and Modeling Results* (Santa Monica: The RAND Corporation, 2009), xxxii.

[12] Joint Chiefs of Staff, *CJCS Vision for Joint Officer Development* (Washington, DC: Joint Chiefs of Staff, November 2005), 1.

[13] Ibid., 3, 8; also see Department of Defense, *Strategic Plan for Joint Officer Management and Joint Professional Education* (Washington, DC: Department of Defense, April 3, 2006), 17–18.

[14] "PERS–41 Quarterly Newsletter," issue 1, 1st quarter fiscal year 2011, 2, available at <www.npc. navy.mil/ NR/rdonlyres/195B4979-7075-4B12-916D-0D834EC0EEB8/0/FY11Q1PERS41QuarterlyFinal 22DEC10.pdf>.

[15] For an illustration of a similar occurrence regarding the emphasis placed on joint experience and joint professional military education for those officers considered to be top performers within the U.S. Army, see Charles D. Allen, "Redress of Professional Military Education: The Clarion Call," *Joint Force Quarterly* 59 (4th Quarter, 2010), 96–99.

[16] Clark A. Murdock et al., *Beyond Goldwater-Nichols: U.S. Government and Defense Reform for a New Strategic Era, Phase 2 Report* (Washington, DC: Center for Strategic and International Studies, 2005), 113–114; Paul Herbert and Stuart Wilson, statement before the Subcommittee on Total Force, House Armed Services Committee, U.S. House of Representatives, March 19, 2003, available at <http://armedservices.house.gov/comdocs/ openingstatementsandpressreleases/108thcongress/03-03-19herbert.html>.

[17] Department of Defense, *Joint Officer Management: Joint Qualification System Implementation Plan* (Washington, DC: Department of Defense, March 30, 2007), 3.

[18] *CJCS Vision for Joint Officer Development*, 8.

[19] Harrell, *A Strategic Approach to Joint Officer Management*, 138.

[20] U.S. House of Representatives Committee on Armed Services, Subcommittee on Oversight and Investigation, "Charting the Course for Effective Professional Military Education," H.A.S.C. 111–93, 111th Cong., 1st sess., September 10, 2009; also see Scales, 22–24.

[21] Joint Chiefs of Staff, *The Joint Staff Officer Project: Final Report* (Washington, DC: Joint Chiefs of Staff, April 2008), 25.

[22] Harrell, *A Strategic Approach to Joint Officer Management*, 27.

[23] Harry J. Thie, Margaret C. Harrell, and Robert M. Emmerichs, *Interagency and International Assignments and Officer Career Management* (Santa Monica: The RAND Corporation, 1999), xxii.

[24] Ibid., 51.

[25] Ibid., 9.

[26] Ibid., 10–25.

[27] Harrell, *A Strategic Approach to Joint Officer Management*, 86.

[28] Ibid., 82.

[29] Thie, Harrell, and Emmerichs, 66–93.

[30] Ibid., xx, 25, 52.

[31] Harrell, *A Strategic Approach to Joint Officer Management*, 102.

[32] Thie, Harrell, and Emmerichs, 52.

[33] Don M. Snider and Jeffery Peterson, "Opportunity for the Army: Defense Transformation and New Joint Military Profession," in *The Future of the Army Profession,* ed. Lloyd J. Mathews, 2d ed. (Boston: McGraw Hill, 2005), 240–241.

[34] Department of Defense, "Annual Defense Report to the President and Congress," 1995–2005, available at <www.dod.gov/execsec/index.html>.

[35] The demand for Army strategists is increasing, within not only the Army but also other government agencies. Interagency demand is outpacing the supply; Departments of State, Treasury, and Homeland Security are actively seeking strategists to enhance their planning capability. See Moore, 6, 9–17.

[36] Another option advocated by Scales is the establishment of a Senior Strategists Program, a cohort of highly developed strategic planners and thinkers. He advocates specifically designating key strategic billets for these specialists, some of which would be considered prime GO/FO billets. See Scales, 24.

[37] Joint Chiefs of Staff, *The Joint Staff Officer Project: Final Report*, 21.

[38] Snider, 247.

[39] These programs of study include U.S. Navy's Naval Operations Planner Course, U.S. Army's School of Advanced Military Studies; U.S. Marine Corps' School of Advanced Warfighting; U.S. Air Force's School of Advanced Air and Space Studies; Maritime Advanced Warfighting School; and Joint Advanced Warfighting School. See Scales, 24.

[40] Scales suggests that "experience with the Skelton reforms suggests that such a system would require iron-tight oversight at the very top to prevent the Services from suborning the spirit of [his proposed] Senior Strategists Program." See Scales, 25.

[41] Murdock, 114.

# Transforming the Civil Reserve Air Fleet

By MICHAEL W. GRISMER, JR.

The United States remains the only nation able to project and sustain large-scale military operations over extended distances. We maintain superior capabilities to deter and defeat adaptive enemies and to ensure the credibility of security partnerships that are fundamental to regional and global security. In this way, our military continues to underpin our national security and global leadership, and when we use it appropriately, our security and leadership is reinforced.

— President Barack Obama, National Security Strategy, May 2010

C–17 Globemaster III aircraft lands at Fort Hunter Liggett, California, during joint field training exercise

U.S. Airmen offload cargo from fourth 747 commercial aircraft within a month at Al Asad Airbase, Iraq

The expeditionary nature of U.S. warfare today relies on rapid global reach to defeat irregular threats in the farthest corners of the Earth, to deter rogue dictators who seek to acquire nuclear or biological weapons, and to deliver humanitarian aid to the impoverished regions of the world. Enter the U.S. Transportation Command (USTRANSCOM), a supporting unified command providing joint mobility forces to geographic combatant commanders and also serving as the Defense Distribution Process Owner. The mission of USTRANSCOM is to get the warfighters to the fight, sustain them during the fight, support rapid force maneuver and patient movement, and finally, bring the warfighters home.[1]

Projecting and sustaining joint forces over great distances have always been strengths of the U.S. military. The emphasis and challenge today, however, is the speed of force projection, which is critical to campaign success and achievement of U.S. national security objectives.[2] Speed in delivery, especially for the landlocked environments in which the United States currently operates, means integrated airlift, both intertheater (strategic) airlift and intratheater (tactical) airlift. Air Mobility Command (AMC) is USTRANSCOM's component command responsible for providing strategic and tactical airlift, air refueling, and aeromedical

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evacuation services for U.S. forces.[3] AMC provides global reach through a mix of organic aircraft, and through commercial airlines via the Civil Reserve Air Fleet (CRAF) and other contracts to move Department of Defense (DOD) passengers and cargo.

USTRANSCOM's timely delivery of forces and cargo would not be possible without the CRAF. The quid pro quo relationship between DOD and CRAF commercial airline partners provides DOD airlift in time of national emergency, in exchange for the opportunity to bid on DOD peacetime business. Today, CRAF participation and annual DOD payments to CRAF carriers for airlift services are at an all-time high, nearly $3.4 billion.[4] This enormous price tag comes at a time when DOD is facing record high budgets and a doubling of wartime supplemental defense spending since 9/11.[5] With DOD fixed costs at an all-time high and recapitalization requirements in every direction, the challenge to win two wars and reset for the next in a fiscally constrained environment is nearly untenable. As requirements continue to exceed funding, DOD must leverage capabilities that work and scrutinize spending across the board.

USTRANSCOM's current challenge is to find innovative ways to leverage CRAF capability to gain speed, efficiency, and capacity for the warfighter. USTRANSCOM Commander General Duncan J. McNabb recently testified to Congress that "rapid global mobility is critical to USTRANSCOM's quick reaction capability to meet the needs of the joint forces and we need to continue recapitalizing our air mobility force."[6] As DOD moves

forward into the next decade of economic uncertainty and shrinking defense spending, CRAF brings the most capability at the lowest price. Because CRAF represents DOD's most flexible and economical capacity for surge airlift, this article draws the conclusion that USTRANSCOM must transform CRAF capabilities to meet the evolving joint deployment mission in a fiscally constrained environment.

Background

The CRAF experiment was born out of the U.S. experience in World War II when President Franklin D. Roosevelt granted authority to take possession of any commercial aircraft required by the war effort.[7] Just as today, the early CRAF program provided DOD with planning options to meet emergency airlift requirements that exceeded capacity of the organic military fleet. The importance of the military and civilian airline industry partnership was solidified again in 1987 by President Ronald Reagan's National Airlift Policy, which states, "It is therefore the policy of the U.S. to recognize interdependence of military and civilian airlift capabilities in meeting wartime airlift requirements, and to protect those national security interests contained within the commercial air carrier industry."[8] The National Airlift Policy also clarifies that during peacetime, the CRAF can be used to meet passenger and cargo requirements that cannot be met by the DOD organic fleet.[9] One key component of CRAF is that it remains a voluntary program with an incentive to bid on DOD peacetime business. CRAF partners receive no compensation unless they are activated to meet DOD surge airlift during

national emergencies, or they fly peacetime DOD missions. The relationship between CRAF partners and DOD is alive and well today, with 32 airlines committing more than 1,100 aircraft.[10]

The majority of DOD's organic strategic airlift capability lies with AMC's C–17 and C–5 fleets, which, unlike the CRAF fleet, have capacity and capability to deliver outsize cargo. The complementing CRAF fleet is comprised of three main segments: International, National, and Aeromedical Evacuation (AE), with segment assignment predicated on DOD requirements and aircraft performance characteristics.[11] Additionally, to tailor airlift for a national emergency, the CRAF is divided into three stages for incremental activation, and carriers are required to respond within 24 hours of activation. Stage I activation is for expanded peacetime requirements or a minor regional crisis and is comprised of long-range assets only.[12] Stage II is for one major theater war and is comprised of national, international, and AE segments.[13] Finally, Stage III is for periods of national mobilization and involves a total CRAF airlift recall.[14] Over the 60-year history of CRAF, it was activated twice. Both were Stage I activations of the international passenger carriers. The first was from August 18, 1990, through May 24, 1991, in support of Operations *Desert Shield* and *Desert Storm*, and the second was from February 8, 2003, through June 18, 2003, in support of Operations *Iraqi Freedom* (OIF) and *Enduring Freedom* (OEF).[15] In both cases, CRAF provided timely and economical surge airlift. To illustrate, CRAF carriers were paid $1.5 billion during these activations, a fraction of the estimated $15 to $50 billion required to provide similar DOD organic capability.[16]

Events following the 9/11 terrorist attacks drove DOD airlift requirements to all-time highs while many segments of the commercial airline industry saw business plummet. In the post-9/11 high operations tempo environment, CRAF peacetime operations, or operations during nonactivation stages, are now best described as "steady-state operations." To compare steady-state operations in 2009, the CRAF flew 5,453 trips for USTRANSCOM, which is nearly equal to the 5,600 trips made by the CRAF during the entire 1991 Gulf War, when the program was activated.[17] CRAF partners are best able to employ resources to support their primary commercial obligations and steady-state DOD business when they can see

all requirements in advance. Consequently, USTRANSCOM gains more participation from CRAF partners by providing steady-state requirements in advance. This was evidenced by increased voluntary participation during requirement spikes throughout OIF and OEF, which avoided further CRAF activation during high-ops periods following the 9/11 attacks.[18]

Shared trust and fair financial incentives have sustained CRAF as a model government/private industry partnership that meets the DOD airlift gap and assures CRAF partners guaranteed income with predictable operations. USTRANSCOM's goal is to keep the CRAF a viable strategic and operational asset, able to rapidly respond to changing wartime requirements. Since commercial airline participation in CRAF is voluntary, USTRANSCOM goes to great lengths to reach a modus vivendi with both passenger and cargo partners. The maintenance of a symbiotic relationship between CRAF carriers and DOD is a success story. Today, DOD planning factors rely on the CRAF as the primary means of delivering passengers and bulk cargo in the

these restrictions can limit capability and efficiency of CRAF operations when compared to similar organic DOD missions that are not encumbered by FAA restrictions. One example of an FAA restriction is Special Federal Aviation Regulation No. 77, which prohibits operations in Iraqi airspace.[21] Another more recent FAA mandate changes the way commercial carriers (including CRAF) schedule their crews to ensure compliance with new crew rest and duty day requirements. It is too early to estimate impacts of this regulation on the CRAF, but it could force international CRAF flights to land short of the normal destinations to make a crew change and then continue the mission.[22] Nonetheless, additional takeoffs, landings, and crew changes result in delivery delays and extra costs, which will ultimately be paid by the user.

Another operational limitation to CRAF capability is restricting carriers from operating in designated high threat areas, where many of USTRANSCOM's customers require airlift. In several cases, the restriction is due to CRAF aircraft lacking costly defensive systems designed to counter Man Portable

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USTRANSCOM's goal is to keep the CRAF a viable strategic and operational asset, able to rapidly respond to changing wartime requirements

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event of an activation.[19] Additionally, according to the Mobility Capability Requirements Study (MCRS), which informs DOD mobility planning, 57 percent of CRAF cargo capacity and 55 percent of CRAF passenger capacity are needed to meet activation requirements.[20] Unfortunately, even with excess CRAF capacity, there are policy and equipment barriers that reduce capability.

Enhance Current Capabilities

While just over half of current CRAF capacity is required to meet DOD worst-case scenarios, the entire CRAF fleet is vulnerable to Federal Aviation Administration (FAA) policy, limiting employment capability. DOD could realize full CRAF capability if partner airlines received relief from FAA operating restrictions while flying DOD missions. Since CRAF partners are required to be U.S. flagged carriers, they must operate under FAA Part 121 or 135 rules (commercial or commuter airlines) that regulate activities even while flying DOD missions. Depending on the mission,

Air Defense Systems (MANPADS) threats common to many of the nonpermissive airfields U.S. forces use today. MANPADS are portable shoulder-launched surface-to-air missiles that pose the greatest threat to aircraft during takeoff and landing phases. Future threats may also limit CRAF aircraft from operating in a chemical or biological contamination area. These restrictions typically force CRAF aircraft to land short of a destination and transload cargo to an AMC aircraft with defensive systems. Another operational workaround is to schedule CRAF aircraft on strategic missions outside of the threat area, preserving the organic fleet for the threat areas. To illustrate, prior to 9/11, CRAF flew 24 percent of DOD channel cargo missions, the regularly scheduled time-sensitive resupply missions delivered directly to the user at DOD installations with major air cargo hubs.[23] Today, CRAF flies 72 percent of DOD channel cargo missions, freeing up the AMC organic fleet for deliveries to high threat areas.[24]

Mitigating the MANPADS threat will allow the CRAF fleet to operate without restriction in more locations and bring more capability to the warfighter. Regrettably, aircraft mounted defensive systems like Large Aircraft Infrared Countermeasures (LAIRCM) are cost prohibitive to install on the CRAF. Another cost-effective option to allow access to high threat airfields is to install counter-MANPADS technology to protect specific airfields. One such ground-based system called the Counter Man-Portable Air Defense System (CMAPS) detects multiple threats, tracks them, and destroys the targets using directed energy, similar to LAIRCM protocol.[25] Portable land-based protection would counter the MANPADS threat, allowing theater direct delivery to maximize CRAF capability. CMAPS is just one technology that brings more capability to the CRAF. The commercial airline industry offers additional new technology options to enhance CRAF capabilities, which will be reviewed.

New Commercial Capabilities

Because CRAF leverages existing commercial airline capabilities, the DOD focus has always been on strategic airlift. A new contractor capability to investigate is the civilian air tanker, which is gaining momentum as enterprising companies seek to meet expanding military aerial refueling requirements around the world. Additionally,

there are two new multirole tanker/transport aircraft. The Boeing KC–46A and the EADS KC–45 are mobility platforms with CRAF potential.

The idea of paying a premium to CRAF carriers for new capability began during the 1980s, when the U.S. Air Force paid more than $600 million to modify 24 commercial CRAF airplanes to accommodate outsize equipment.[26] To incentivize modifications, DOD also paid operating subsidies to these CRAF carriers. Additionally, in the mid-1990s, DOD asked AMC to investigate providing incentives to CRAF carriers to purchase the most efficient commercial cargo jet, the Boeing 747–400.[27] Eight CRAF partners expressed interest, but the aircraft did not fit their commercial business strategy and DOD would not subsidize equipment modifications or higher operating costs.[28]

Adding air-refueling capability to the CRAF is not a new concept. In 1997, USTRANSCOM formed a Contract Aerial Refueling Working Group (CARWG) to explore commercial air-refueling options.[29] The group examined options, but without an established requirement, the fee-for-service model was not pursued. Since then, there has been significant change in requirements and technology while the KC–135 fleet has aged another 14 years and the Air Force only recently awarded the KC–X contract to Boeing in February 2011. This contract will

recapitalize a portion of the KC–135 fleet with Boeing KC–46A aircraft, which will come off the production line requiring no modifications and have flexibility for use as a tanker, cargo, or passenger aircraft. If a similar KC–X capability was available in the CRAF, it would easily be the most capable aircraft in the DOD commercial fleet and perhaps worthy of a premium for the unique capability provided.

The 2010 DOD Mobility Capabilities and Requirements Study highlights the Air Force tanker shortfall. This 2-year study examined three representative scenarios that would employ mobility assets. The Air Force tanker fleet came up 93 aircraft short of meeting requirements in the 2 most constrained cases.[30] To make matters worse, the KC–135, which makes up the majority of the Air Force tanker fleet, is 50 years old, and the KC–46A replacement aircraft will replace only one-third of the aging KC–135 fleet. Due to budget constraints, tanker recapitalization funding is limited to $3.5 billion annually, allowing for a projected procurement rate of 12 to 18 aircraft per year.[31] By the time the KC–135 fleet is recapitalized, the last aircraft will be more than 85 years old. In testimony to the Senate Armed Services Committee, General McNabb stated, "My number one recapitalization priority is replacing the fleet of 415 Eisenhower-era KC–135s with a new platform to preserve a unique asymmetric advantage for our nation. The KC–X . . . will

U.S. Air Force

Soldiers board Air Force transport

address the significant risk we are currently carrying in air-refueling capacity."[32]

The business case for a civilian tanker serving military needs has already been proven. Omega Air Refueling provides worldwide fee-for-service probe-and-drogue aerial refueling to a host of customers including the U.S. Navy, U.S. Marine Corps, Germany, Canada, Australia, and the Royal Air Force.[33] Omega Air is paid through the Navy Flying Hour Program, and offers capability similar to the AMC KC–135 and KC–10 at a rate of $7,890 per flying hour for its KC–707 (KC–135 equivalent) and $12,500 for its KDC–10 (KC–10 equivalent).[34]

Current joint DOD doctrine includes plans for refueling platforms to augment the airlift fleet.[35] Unfortunately, the KC–135 is used primarily as a tanker and is restricted in the airlift role to carrying 6 lightweight cargo pallets and up to 50 passengers. Both commercial KC–X competitors (Boeing KC–46A and EADS KC–45) will deliver about 1.1 to 1.3 times the air-refueling capacity of the KC–135, but because they are designed with cargo loading floors and doors, they will far exceed the KC–135 in cargo and passenger capacity. Boeing's KC–46A (767–200 derivatives) carries 190 passengers and 19 bulk cargo pallets, while the EADS North America KC–45 (Airbus A330–200 derivative) carries 226 passengers and 32 pallets.[36] Equipped with defensive systems to allow theater direct delivery, the KC–X candidates will move easily between tanker and transport roles, or a combination of the two. Additionally, because the aircraft can deliver and receive fuel, it will have nearly unlimited range to transport cargo and passengers to the warfighter. With an aging fleet and limited buying power, now is the time to explore tanker CRAF options, to include taking advantage of foreign capability.

Partnerships

In today's global economy, innovative options are needed to bring foreign capability to the CRAF. USTRANSCOM is required to first award airlift contracts to U.S. flag carriers that are part of the CRAF. However, when CRAF does not have capability, partners are allowed to subcontract to approved foreign flag carriers that meet the requirement.[37] One example is that CRAF carriers lack capability for outsize cargo. Worldwide, strategic airlift of outsize cargo is limited to the U.S. C–5, C–17, and the Russian/Ukrainian An-124 and Il-76.[38] The An-124 and Il-76 both fly outsize

DOD cargo, and USTRANSCOM has leveraged them heavily. From September 11, 2001, through June 22, 2010, An-124s, and Il-76s augmented the CRAF fleet with more than 4 million flight hours, earning $1.5 billion in CRAF revenue from DOD.[39]

The United Kingdom (UK) is in a similar situation to the United States, with an aging tanker fleet of 19 aircraft, more tanking requirements than capacity, and no money to recapitalize. Enter the Future Strategic Tanker Aircraft (FSTA) program, a private finance initiative with AirTanker Limited, a consortium group, to provide a new fleet of 12 Airbus A330–200 multimission tanker/airlifters.[40] The United Kingdom pays a fee for service, while AirTanker provides air-refueling and airlift capacity for a contracted period of 27 years and pays all capital costs

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by the time the KC–135 fleet is recapitalized, the last aircraft will be more than 85 years old

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to include infrastructure modifications to the host UK airfield.[41] The United Kingdom will retain permanent access to nine aircraft and the remainder will be available for commercial use by AirTanker, to include making the aircraft available to other governments.[42] Reviewing the FSTA as a business model for a U.S. Tanker–CRAF would be a worthwhile endeavor, especially if a commercial contractor offered EADS KC–45 service to the CRAF.

Exploring options to capture foreign capability for the CRAF should also include options for offering excess CRAF capacity to international partners at a reasonable reimbursement rate. The opportunity to strengthen international partnerships and build new ones using commercial resources that already operate globally offers efficiency and effectiveness. Additionally, building these global partnerships can be beneficial to DOD by taking advantage of commercial expertise operating outside of the continental United States and providing competitive bid pricing. By way of example, USTRANSCOM recently awarded 12 contracts worth $2.4 billion for vertical lift technology and for short takeoff and vertical landing (STOVL) capability in Afghanistan.[43] These contracts went to both U.S. and foreign companies, as will another $5.5 billion for similar services in the near future.[44]

Adding foreign carriers to CRAF will bring new capabilities, competitive pricing, and local expertise for niche services like STOVL and heavy vertical lift. Allowing foreign ownership in CRAF may eventually open the door for foreign ownership of U.S.-based airlines as well. Foreign investment in the U.S. airline industry (including CRAF) has been limited for four reasons: increased competition to domestic carriers, possible transfer of U.S. jobs to a foreign workforce, unfair competition from airlines receiving foreign government subsidies, and DOD concern for negative impacts to CRAF.[45] Each of these concerns appears dated, and many economists believe that more foreign investment in U.S. airlines would improve the financial health of the airline industry. Additionally, the Department of Transportation (DOT) recently supported legislation raising the allowable foreign ownership of U.S. airlines to allow easier access to foreign capital for U.S. airlines.[46] As USTRANSCOM continues leveraging foreign commercial aviation capability, future foreign technologies should also be investigated.

Partner with Industry

USTRANSCOM and CRAF partners share many common interests, making future lift technologies beneficial to both. As DOD begins research, development, and testing on the next generation of mobility aircraft, it is beneficial to dialogue with CRAF partners to determine if there is a business case for a civilian variant. Future purchases of military aircraft will be more cost effective in both production and sustainment if they can be tied to a commercial production line. One such future technology with mutually beneficial opportunity is the heavy lift hybrid airship. With payload estimates in the 1,000-ton category, advocates believe this future platform will fill voids between sea lift ships and cargo aircraft.[47] A recent study estimated that the life cycle cost to develop and procure 14 to 16 heavy lift airships is the same as the cost of 21 C–17 aircraft ($11 billion), but the airship would deliver cargo at 3 times the rate.[48] Realizing this potential, USTRANSCOM and AMC continue to investigate hybrid airship concepts for mobility mission areas.[49]

Advances in vertical lift technologies will have applications for several sectors of the commercial market, making them ideal candidates for the CRAF. Today, some 32 companies worldwide are involved in the

design or manufacture of commercial airships and aerostats.[50] Another possibility to partner with the airline industry, multiple services, or perhaps a multinational partner is on development of the Joint Future Theater Lift aircraft. This platform will have similar capabilities to a C–130 or a heavy lift helicopter, and be able to operate from naval vessels to ensure access to remote areas.[51] Such an aircraft would be of use in landlocked countries like Afghanistan, requiring extensive vertical lift resupply, much of which is contracted out to non-CRAF carriers. Finally, a strategic partnership is already in place between manufacturer Boeing and logistics solutions provider SkyHook International, a Canadian company, to build a hybrid airship/helicopter for commercial applications.[52]

New lift technologies can offer a tradeoff between speed and lift capacity that will likely find application in the commercial airline industry. As the technology matures and efficiencies are made, the CRAF offers opportunity to bring new capability to DOD, and in many cases avoid accompanying research, development, and testing costs.

Counterargument

With participation and DOD payments to CRAF carriers at the highest level in history, future capacity appears assured. Organic fleet sizes and contingency planning factors have been adjusted to take full advantage of CRAF capacity. In 2008, former USTRANSCOM commander and now Air Force Chief General Norton Schwartz testified before the Senate Armed Services Committee that limiting Air Force C–17 purchases to 205 airplanes was needed because the DOD organic fleet competes in peacetime with the CRAF.[53] Boeing will deliver the last Air Force C–17 in 2013, leaving CRAF as the only means to absorb future wartime surges. Despite the guarantee of DOD business, at least one area of concern remains. Since the CRAF is an annual contract, partner carriers may find that commercial revenues are more profitable than DOD business and elect not to renew their contract. USTRANSCOM is keenly aware of this risk and is fully engaged to prevent this possibility.[54]

In 2002, the House Armed Services Committee, concerned about CRAF health, commissioned a General Accounting Office (GAO) study that identified two areas for improvement. First, stronger financial participation incentives were needed, and

second, since partners with Boeing 747s were receiving the majority of the DOD peacetime missions, the recommendation was to look at employing smaller wide-body CRAF aircraft.[55] USTRANSCOM addressed these concerns and further strengthened the CRAF business model by creating joint venture teams. During nonactivation periods, CRAF partners who find civilian business more profitable than DOD have the flexibility to fill DOD requirements by selling their peacetime entitlements to CRAF teammates who rely on DOD for the majority of their business.[56] Moreover, Congress, in recognizing the importance of strengthening CRAF participation, granted USTRANSCOM authority in the fiscal year 2009 National Defense Authorization Act to guarantee minimum levels of business and to improve predictability of DOD requirements.[57] Finally,

in May 2010, USTRANSCOM established an Executive Working Group (EWG) that met with all CRAF carriers and DOT. The EWG met to strengthen the strategic relationship between all parties and agreed to several proposals providing fair incentives for capability, reliability, efficiency, and activation, to name a few.[58]

The immediate future of CRAF appears secure, with partners committing nearly double the number of airplanes required for DOD's most demanding war plans.[59] While surge capacity is not a problem today, the long-term focus needs to be on achieving more CRAF *capability*. Because CRAF represents DOD's most flexible and economical source for surge airlift, USTRANSCOM must continue to transform CRAF capabilities to meet the evolving joint deployment mission in a fiscally constrained environment.

Recommendations

The previous arguments offer opportunities for USTRANSCOM to investigate further each of the four recommendation areas summarized below.

Enhance Current Capabilities. The first recommendation is to develop a comprehensive list of FAA operating restrictions that limit the CRAF. A possible

discussion forum to gain insight from CRAF carriers is the newly created CRAF EWG. After reaching a consensus, USTRANSCOM can begin a dialogue with the FAA to determine pragmatic solutions that would afford CRAF carriers on DOD missions relief from restrictive operating regulations. Another recommendation to enhance capability by flying CRAF aircraft into airfields threatened by MANPADS is to investigate options to employ CMAPS at selected airfields. Adding this capability to the Air Force Contingency Response Wing's airfield opening and sustainment functions is a possible employment option.

New Commercial Capabilities. Implementing the second recommendation, adding commercial capability, will take further discussions between USTRANSCOM and industry. With the KC–46A still not in pro-

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duction and the KC–135 fleet approaching 50 years, reestablishment of the CARWG to review options with industry appears to offer an established venue. A future review by the CARWG should also include U.S. allies who have already begun taking advantage of KC–X technologies. Japan and Italy purchased the Boeing KC–767 (a similar version of the KC–46A), while Australia, Great Britain, Saudi Arabia, and the United Arab Emirates bought EADS KC–45s.[60] Since there is no plan to recapitalize the last KC–135 until it is 85 years old, a tanker CRAF appears to be a viable option to manage aerial refueling effectiveness, thus ensuring capability. Finally, a tanker CRAF appears to offer a hedge against risk for the KC–135 fleet that continues operating beyond planned life expectancy, forcing AMC to invest more capital and maintenance manpower, while receiving less capability in return.[61]

International and Multinational Partnerships. As USTRANSCOM adds foreign capability to the CRAF, the EWG offers another forum to investigate options for offering excess CRAF capability to our international partners. The opportunity to strengthen international partnerships and build new ones using commercial resources that already operate

Boeing

globally appears to offer efficiency and effectiveness.

The main hurdle to overcome before foreign capability can be added to the CRAF is the Fly American Act, which requires CRAF carriers to be U.S. flagged.[62] One option is for foreign carriers desiring to do business with DOD to establish a U.S. affiliate company. Another option to add foreign investment in CRAF is to amend current legislation to permit foreign ownership. As USTRANSCOM has already learned, foreign carriers bring capital, capability, and efficiencies not found in the U.S. commercial aviation industry, like outsize airlift. Congress recently provided legislative incentives to preserve CRAF capacity, and with DOD and DOT support, updating legislation to allow foreign ownership of CRAF will bring capability, competition, and efficiency. Requesting legislative relief today fits the current climate for DOD fiscal restraint, and the establishment of foreign CRAF partnerships could also prove to be an effective diplomatic tool.

Partner with Industry on Future Technologies. Partnering with the transportation industry is one of USTRANSCOM's functions as the deployment and distribution process owner and architect of future DOD transportation systems. As USTRANSCOM moves forward in developing the next generation of mobility capabilities, opportunities exist to create a formal mechanism like the CARWG or the EWG that will partner with the commercial airline industry to leverage their innovations and efficiencies. Since CRAF carriers compete for profitability with many of the same capabilities as AMC, understanding the future commercial marketplace will prove beneficial as USTRANSCOM defines future requirements. Additionally, since future military production lines will achieve the greatest cost savings when tied to a commercial production line, early dialogue with CRAF partners and airline manufacturers offers opportunities to create sustainability and efficiency and to bring new capabilities in a fiscally responsible manner.

Today more than ever, DOD needs fiscally sound and pragmatic solutions to maximize capability, minimize cost, win the long war, and recapitalize the force. Former Secretary of Defense Robert M. Gates also emphasized that future DOD budget growth must stop. Zero growth, together with the increasing cost of energy, operations, and

KC–46A is to replace Air Force KC–135 Stratotankers fleet to provide air refueling capability

sustainment, will disproportionately affect future procurement accounts. Additionally, with economic uncertainty and the focus on debt reduction, Congress will tighten supplemental wartime funding, forcing more capability from the DOD budget. The Congressional Budget Office calculated the cost of operations in Iraq and Afghanistan to date at $1.1 trillion, and estimates another $1.7 trillion will be spent over the next decade to complete these operations.[63] Secretary Gates affirmed that U.S. strategic strength is linked to the fiscal health of the Nation and that "DOD's track record as a steward of taxpayer dollars leaves much to be desired."[64] DOD will make difficult fiscal choices to secure the right capabilities needed to win current and future conflicts. Admiral Mike Mullen, Chairman of the Joint Chiefs of Staff, in congressional testimony, said it best: "This will be hard work and will require difficult choices . . . choices [that will] be painful, even unnatural for the services, for the department, and for the Congress."[65]

Future operations are sure to be marked with a need for increased rapid global mobility, requiring both airlift and air refueling to enable joint forces. Without CRAF, DOD cannot meet mission requirements. Growing capabilities within CRAF by leveraging commercial aviation strengths brings more capability at a fraction of the cost. With constrained DOD budgets and U.S. defense industrial base concerns, CRAF offers the best opportunity to meet future global mobility requirements. CRAF also offers great prospect

to leverage innovation and cost savings from the commercial aircraft industry. Transforming CRAF capabilities will take leadership at many levels. Innovation is never automatic or inevitable; it takes deliberate leadership. **JFQ**

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Operation *Enduring Freedom X*
CJTF–82 and the Future of COIN

By R.D. HOOKER, JR.

Marines and Afghan Uniform Police conduct security patrol through bazaar in Helmand Province to decrease insurgent activity and gain trust

U.S. Marine Corps (Joseph M. Peterson)

The 82d Airborne Division's 2009–2010 rotation as the core headquarters for Combined Joint Task Force (CJTF)–82 and Regional Command–East (RC[E]) in Afghanistan marked an innovative break with the past in evolving counterinsurgency (COIN) doctrine and practice. In four key areas—synchronized communications, unified action, combined action, and joint network targeting—CJTF–82 implemented new approaches at the CJTF level. Both structural and conceptual, these innovations marked a clear departure from past practices, refined existing procedures, and suggested new doctrinal concepts and approaches. Truly interagency as well as joint and combined, CJTF–82 evolved into a hybrid organization that may well describe the future of COIN.

At the outset, CJTF–82 was task organized with three U.S. Brigade Combat Teams (BCTs), elements of a National Guard division headquarters (led by a one-star), a Polish battle group of two battalions, a French combat battalion (later upgraded to a two-battalion formation commanded by a one-star), a combat aviation brigade with attack, utility, and cargo helicopters, an engineer brigade, a sustainment brigade, and other smaller support and enabling units totaling 24,000 U.S. and 6,000 coalition troops (the CJTF included personnel of 10 different nationalities). Fourteen Provincial Reconstruction Teams (PRTs), including Czech, New Zealand, and Turkish PRTs, also supported the Task Force. Inside RC(E), the Afghan 201st and 203d Corps were positioned as well as large Afghan National Police and Afghan Border Police formations, totaling more than 42,000.

Like its predecessors, CJTF–82 faced numerous challenges in the course of its year-long rotation. RC(E) was responsible for an area the size of Ohio, with 14 provinces, 159 districts, and approximately 10 million inhabitants, with a 930-kilometer shared border with Pakistan (the distance from New York City to Fort Bragg, North Carolina). The Hindu Kush mountain

CJTF–82 commander discusses Afghan national army living conditions with ANA commander

U.S. Air Force (Evelyn Chavez)

range, a forbidding natural barrier, bisects RC(E) from east to west. Of great importance, more than 70 percent of the RC(E) population lives within 100 kilometers of the Pakistani border, mostly concentrated along the few major highways leading to Kabul and through Jalalabad to the Khyber Pass. Slightly more than 60 percent of its inhabitants are ethnic Pashtuns, historic rivals of the Tajik (19 percent) and Hazara (10 percent) tribal groupings. A special case are the famously xenophobic and fiercely independent Nuristanis, about 5 percent of the RC(E) population, who speak an entirely distinct language and live, largely isolated,

in the high mountains of Nuristan.[1] Eastern Afghanistan is home to a population that is largely illiterate and has some of the highest poverty and unemployment levels on Earth. The tyranny of distance and terrain, a long history of conflict and occupation, an extraordinarily complex tribal mosaic, an adaptive and committed enemy, and primitive and often corrupt governance all posed extraordinary challenges for soldiers and diplomats alike.

Unlike other regional commands in Afghanistan, numerous insurgent groups exist in RC(E). The most significant include the Haqqanni Network (HQN), Hezb-e

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Islami Gulbuddin, and Taliban groups operating under the direct control of Mullah Omar and the Quetta Shura in Pakistan.[2] Each group fields different networks and pursues different agendas, cooperating at times but sometimes fighting each other. While all contributed to instability in RC(E), HQN—an extremely violent group historically based in Khowst, headquartered just across the border in Miram Shah, and having known ties to al Qaeda—posed the greatest insurgent threat. Well organized and financed, highly resilient, and deeply rooted in historic tribal areas on both sides of the border, HQN in particular absorbed tremendous blows from the coalition without collapsing.[3]

While still at home station, the division staff defined the primary campaign objective as follows: "to build and reinforce the Afghan government's competence, capacity, and credibility in a unified effort to protect the population, connect the people to the government, and effect sustainable development to improve the lives of the Afghan population." Accordingly, the CJTF–82 campaign concept focused on four key lines of operation.

Information. In the predeployment planning phase, the commanding general identified information as "the primary line of effort and first planning consideration." The campaign plan stated the problem clearly: "We will not succeed unless the Afghan population perceives the Government of Afghanistan as legitimate and enduring. We will fail if we lose the will of our supporting populations."

Security. Early experiences in both Iraq and Afghanistan showed a clear bias for kinetic operations and coalition-only operations. Over time, this gave way to a more nuanced understanding of the interplay between security operations and other lines of operation. Partnering with host nation security forces to secure the population was recognized as key not only to building capacity with the army and police, but also to connecting with, understanding, and leveraging the local population.

Governance. International, coalition, and Government of the Islamic Republic of Afghanistan (GIRoA) efforts support governance through programs focused from the top down, but face difficulties connecting at the local level. In areas with limited coalition presence, the enemy seeks to fill the power vacuum with "shadow" governance by establishing local sharia judicial systems and issuing land titles. The CJTF–82 challenge was to empower and enable local governance from the bottom up.
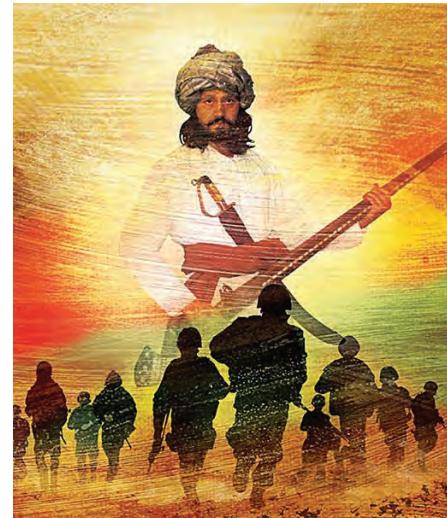
Development. Here, efforts were focused on supporting sustainable development through economic growth. Only an integrated approach partnered with GIRoA, the international community, and U.S. Government elements in RC(E) across all lines of operation can allow Afghanistan to prosper in the long run. Vital to this approach was the presence of skilled civilian development experts in large numbers, working as part of the CJTF staff and embedded in brigades and their associated PRTs, District Support Teams, and Agricultural Development Teams.

Synchronized Communications

To enhance synchronized messaging, CJTF–82 created the Communications Action Group (CAG), a small but powerful command and control node chartered to integrate and coordinate the information line of operations in support of the campaign plan. Headed by an O–6, the mission of the CAG was to "develop, synchronize, and execute the RC(E) Communications Strategy to gain and maintain the initiative against the enemy and maintain the public support necessary to achieve success in Afghanistan." The enemy in Afghanistan rarely fights to take or hold ground; every operation is conducted with an information objective in mind. Always, the insurgent message characterized the coalition as "infidel occupiers"—a powerful, emotive theme that was difficult to refute. To counter this approach, RC(E) moved the information fight to center stage.

The CJTF–82 Communications Strategy was published on a single slide, organized along the four lines of operation. It provided basic messaging guidance to subordinate units, amplified for specific operations in the communications annex in CJTF orders. Operating within this general framework, units tailored broadcast and print products for their local areas and specific requirements. Importantly, all CJTF messaging was firmly grounded in the truth—good or bad. The communications strategy proved exceptionally useful in focusing different organizations along simple, broad themes that

The MobyGroup multimedia firm in Kabul created media campaign to promote Afghan Security Forces and build stronger ties with Afghan people

supported the campaign concept, while allowing a flexible and rapid approach to fast-moving, local situations.

CJTF–82 and its subordinate units communicated in three primary ways. The first and most important was by broadcast. Roughly 60 percent of the RC(E) population has access to television, but virtually

all are avid radio listeners. Accordingly, CJTF–82 handed out hundreds of thousands of handcranked AM/FM radios, mostly in rural areas. Building on an existing network of 26 radio stations, CJTF–82 expanded it to more than 55. These off-the-shelf systems or "Radios in a Box" (RIABs) employed locally recruited Afghan announcers and script writers and operated from coalition bases throughout RC(E). Using Afghan programming obtained through commercial contracts, they enabled coalition forces to reach into all but the most mountainous areas with local news, poetry, music, and religious content, as well as public service announcements crafted in accordance with our communications strategy. Units also purchased air time from commercial radio stations where available to augment their broadcasts. Whereas higher headquarters conducted broadcast messaging nationwide, CJTF–82 focused on regional and local themes of more immediate interest to the specific local population.

CJTF–82 units supplemented broadcast messaging with print products such as posters, handbills, billboards, and leaflets designed to communicate messages visually to a largely illiterate population. As with radio and TV spots, local Afghan staff was incorporated during preparation of print products to ensure coherent and culturally authentic messages, as well as pretesting in the local community. In August 2009, in the weeks preceding the national elections, CJTF–82 disseminated one million "get out the vote" print products per week—more than the Afghan government distributed across the entire country—swamping the Taliban's effort.

While CJTF–82's Information Operations section supervised RIAB and print operations, the Public Affairs (PA) section handled all interaction with media organizations as well as traditional command information programs. Supported by a 26-soldier Mobile PA Detachment and 6-soldier PA Detachment, the PA section supported embedded media throughout RC(E), operated a media operations center at Bagram airfield, published a monthly command information magazine, and provided daily content (both text and photos) on RC(E) to national and international news organizations. CJTF–82's social messaging activities, which included a popular

Web site as well as Facebook and Twitter sites, proved extremely successful and experienced a five-fold growth in subscribers in the course of the rotation. Perhaps most importantly, the RC(E) PA section built up and leveraged ongoing relationships with more than 110 local press organizations in eastern Afghanistan.

Broadcast and print media proved to be powerful communications tools, but in an oral, narrative culture like Afghanistan's, nothing can replace traditional, face-to-face communications on the ground. The CJTF Key Leader Engagement (KLE) cell focused on the Command Group[4] as a key messaging tool, supporting more than 490 engagements with senior Afghan, coali-

broadcast and print media proved to be powerful communications tools, but nothing can replace traditional, face-to-face communications on the ground

tion, international, and U.S. Government and opinion leaders to tell the CJTF story. Subordinate commanders did the same, supported by International Security Assistance Force (ISAF), ISAF Joint Command (IJC), and CJTF communications guidance. While KLEs have been used for several years in Afghanistan, their conscious use as a messaging tool in support of a coherent communications strategy, synchronized and in concert with other complementary means, was an innovation that consistently produced great results.

Early on, CJTF–82 recognized that many of the skills associated with successful synchronized communications lie outside traditional military career fields. Accordingly, the task force entered into a partnership with The MobyGroup, a large multimedia commercial firm based in Kabul, to create a holistic media campaign to promote Afghan Security Forces and to build stronger ties between the Afghan people in RC(E) and local and national governance. The result was a print and broadcast campaign that leveraged commercial marketing, concept development, and production capabilities. Tailored with local ethnic differences in mind, the campaign featured posters, billboards, and TV and radio spots in both Dari and Pashto, with imagery geared to Pashtun, Tajik, or Hazara audiences as appropriate. The campaign, created

by Afghans for Afghans, proved strikingly successful throughout RC(E).

These principles and concepts drove the CJTF–82 information effort—a campaign every bit as real and consequential as any kinetic operation. Some operations were phased, long-duration efforts, like Operation *Jaeza* (Reward), an integrated, synchronized campaign to establish community safety tiplines. Battlespace owners used their RIABs, face-to-face engagements, and print products to inform the population about the tiplines. As awareness grew, Afghans in increasing numbers began to call in the location of improvised explosive devices and weapons caches, often for cash payments under the Department of Defense Rewards Program. Units also handed out cell phones to trusted local leaders and personalities to facilitate call-ins. Over time, actionable calls rose exponentially, saving hundreds of lives. By integrating all messaging entities coherently, CJTF–82 dominated the information fight to a degree not seen in Afghanistan since the conflict began.

Unified Action

Civil-military cooperation has long been recognized as essential to success in COIN, but execution on the ground has often been uneven and difficult. While agency cultures and doctrinal differences are always present, truly integrated civil-military operations are clearly the way ahead. During its Operation *Enduring Freedom X* (OEF X) rotation in 2009–2010, CJTF–82 broke new ground with unified action—the first-ever attempt to fuse military and civilian organizations into one operational headquarters.

At the transfer of authority from the 101st Airborne Division to the 82d on June 4, 2009, there were three civilians posted to the headquarters. That began to change quickly. In July 2009, the U.S. Embassy in Kabul converted the Political Advisor position to that of Senior Civilian Representative (SCR) of the Ambassador. Empowered with Chief of Mission authority to "coordinate and direct all U.S. Mission-related civilian personnel and programs in RC(E) . . . [to]

achieve unity of civilian effort and effective implementation of an integrated civilian-military strategy," the SCR was directed to "serve as the U.S. civilian counterpart to the military commander in the Regional Command (RC), to senior coalition civilians and to senior local Afghan officials."

In this role, the SCR cosigned, with the commanding general, the CJTF–82 campaign plan (Operation *Champion Sahar*) on October 17, 2009. *Unified action* aimed to create synergy among related functions on the CJTF staff and with similar organizations at the IJC and ISAF levels. It leveraged resident expertise on both the civilian and military sides. It also enhanced cooperation and coordination between two different worlds and cultures: a military traditionally focused on conflict and combat, and a civilian interagency process focused on diplomacy and development. This unique organization, a true civilian/military hybrid unlike any seen before, included senior military Civil Affairs officers as well as career experts from the Departments of State and Agriculture, the U.S. Agency for International Development (USAID), and other government agencies up to Senior Executive Service rank. Drawing on the assets and capabilities of the entire CJTF staff and tying in with parallel organizations above and below, it quickly energized development and governance efforts and brought coherence and focus using resources never before available.

The civilian uplift began in earnest in early September with the arrival of eight USAID specialists in water, agriculture, governance, rule of law, program management, and economics—specialties with applications for both governance and development. At the outset, the SCR directed the staff to organize to support four major objective areas: development in selected commercially viable provinces (Nangarhar, Kunar, and Laghman); support to identified "pilot" districts (Khogyani in Nangarhar Province and Sarkani in Kunar Province); provincial transition to lead security responsibility, beginning with the stable provinces of Bamyan and Panjshir; and stabilization throughout the rest of RC(E).

While the objective teams worked to address the challenges described above, the "civilian platform" continued to grow across RC(E), expanding unified action to

brigade, battalion, and even company level.[5] The platform eventually grew to more than 175 personnel from the State and Agriculture Departments and USAID.[6] An interesting development was the Board of Directors concept, used at brigade level to coordinate and prioritize development projects. The brigade commander chaired regular working groups with his affiliated State, USAID, Agriculture, and PRT leaders to plan, coordinate, and prioritize funding and support for development projects.

PRTs continued to play a critical role as they have for most of our involvement in Afghanistan over the past decade. Manned with both civilian and military experts, they provided a primary interface and capacity-building function with provincial governors and their staffs, serving as an execution arm for development and governance in the provinces. Most were led by U.S. Air Force or Navy O–5s with U.S. Government civilian deputies, but RC(E) also fielded Czech, Turkish, and New Zealand PRTs. Each included development and governance professionals and security elements to enable freedom of movement. All U.S. PRTs were placed under the operational control of BCTs to establish a clear link to nearby supporting headquarters and to ensure close integration with all stability actors across the brigade area.[7]

Like everything in Afghanistan, stability operations are a hard and grinding business, fraught with setbacks and obstacles. Endemic corruption, lack of trained bureaucrats and officials, widespread illiteracy, an active insurgency, and complex coordination challenges between U.S., North Atlantic Treaty Organization, United Nations, and nongovernmental organization bodies defined the operating environment. Still, unified action enabled CJTF–82 to achieve real and sustained progress. Concrete examples include the completion of 47 schools, 206 kilometers of roads, 39 bridges, and numerous micro-hydro, generator, and solar power projects, as well as electrical

Afghan contractor and USAID representative discuss progress at hospital construction site

U.S. Air Force (Barry Loo)

systems projects that will provide approximately 339,000 Afghans with access to reliable power. From April 2009 through April 2010, RC(E) residents reported significant improvements in education, medical care, roads, and the availability of jobs. Additionally, an accumulated backlog of more than 1,700 unfinished Commander's Emergency Response Program projects dating back to 2006 was reduced to 510 between July 2009 and April 2010, refocusing the program to primarily small-scale, sustainable projects providing immediate results.

Unified action also enabled clear progress on rule of law in RC(E), supporting advancements in evidence collection, the identification and removal of corrupt officials, and the establishment of sitting supreme court judges and mobile trial judges. As one example, five district governors were removed for corruption in Nangarhar Province in the spring of 2010, and in early May a judicial commission from the Afghan supreme court charged five district line managers with corruption and opened investigations on another 13 in Paktika Province. Across RC(E), 12 corrupt Afghan National Security Forces (ANSF) commanders at the district and provincial levels were removed in one 5-month period. Gains on this front will be incremental and halting but are essential in combating the corrosive corruption that threatens progress in Afghanistan.

In RC(E), unified action strove for unity of effort by synchronizing, coordinating, and integrating civilian capacities

U.S., Afghan, and French officials talk during security
and development shura in Kapisa Province

French Army (Sylvain Petremand)

and expertise with military operations. This approach was driven from the top, starting with the ISAF commander and the U.S. Ambassador. Unified action has been considered theoretically for years; its conceptual framework in fact is taken directly from Army Field Manual 3–0, *Operations*. But it became an operational reality for the first time in RC(E) in 2009. As a new construct, it experienced many of the birthing pains that always accompany new ideas and practices. But the return has been well worth the investment. Today, a foundation has been laid for interagency cooperation in conflict areas that offers exciting opportunities and demonstrated success.

Combined Action

Since 9/11, U.S. and coalition forces have partnered in various ways with host nation security forces in Iraq and Afghanistan, both formally and informally. For OEF X, CJTF–82 committed to a new and different approach.[8] The previous model featured embedded

training teams (ETTs) and police mentor teams (PMTs), relatively small organizations that accompanied ANSF units as trainers and advisors. In a sharp break with the past, CJTF–82 moved to fuse Afghan and U.S. formations into truly combined units. *Combined action* refers to the integration of coalition and host nation forces into single organizations to conduct counterinsurgency.[9] It involved embedding coalition headquarters and units with Afghan counterpart organizations, both to increase operational effects and to speed the professionalization and build the capacity of ANSF.

To this end, CJTF–82 replaced ETTs and PMTs with coalition maneuver units linked directly to Afghan counterparts.[10] Replacing small advisory teams with full-sized combat units introduced a completely different dynamic. Afghan units and leaders showed greater willingness to conduct operations, knowing that coalition forces were there in strength and ready to bring in fire support if needed. With ETTs/PMTs,

the ratio of coalition to Afghan soldiers or police was 1:43 in many areas. Through combined action, that ratio became 1:4. In just 90 days, the percentage of Afghan-led operations increased 15 percent, the number of joint Afghan/coalition operations jumped 20 percent, and ANSF recruiting and retention showed strong improvement—a clear indication of growing confidence.[11]

Executing combined action also placed heavy demands on logistics and engineer support. Many Afghan troop facilities were in poor condition, which seriously affected morale. Collocating headquarters and formations provided an opportunity to construct new facilities and expand others to improve ANSF quality of life and retention. In some cases, the ANSF moved to coalition sites. In others, coalition forces moved to ANSF locations, and in still others, collocation required the construction of new facilities. The CJTF used its staff engineer section to plan and oversee construction, aided by the Regional Support Team, an embedded Combined

Security Transition Command–Afghanistan cell. Most construction was funded through the Afghan Security Forces Fund.

Given scarce resources, the CJTF placed Afghan Army units first in priority due to their greater maturity, capability, and leadership and corresponding impact on security. (Afghan National Police and Border Police units were also partnered, but at somewhat lower levels.) The single most dramatic decision was to push out 35-man tactical command posts, each led by a U.S. brigadier general, to live, work, and fight with the Afghan National Army 201st and 203d Corps. Division-level enablers such as artillery fires, close air support, medical evacuation, intelligence, surveillance, and reconnaissance (ISR) platforms, and logistics could now be incorporated into coalition/ANSF operations to a far greater degree. In the same way, coalition units benefited from Afghan cultural awareness,

information—to achieve effects against priority targets became apparent. With each operation, the CJTF adapted its processes, learning from both success and failure to improve its effects.

CJTF–82 employed two basic approaches to target anti-Afghan Forces (AAF) networks. The first called for coalition and Afghan SOF to conduct trigger-based operations against high-value individuals and key AAF leadership.[14] Conventional forces were then staged to exploit intelligence and interdict the enemy as he reacted. If clear indicators and triggers were not available, conventional forces conducted disruption operations to provoke trigger events and, in effect, flush out targets from hiding by forcing them to move or communicate, thus raising their signature and vulnerability. Both methods relied on painstaking intelligence work to establish "pattern of life" and to limit and prevent collateral damage during the operation.

In RC(E), the CJTF found that prolonged, focused network targeting, using theater- and CJTF-level assets tasked down to the brigade level, had the largest positive impact on defeating or disrupting the insurgency across all lines of operations. Analyzing both casualties and incidents revealed marked differences. Shorter duration operations using only brigade-level assets showed no significant decrease over time, and resulted in only limited local effects.[18]

CJTF–82 network targeting also incorporated nonlethal targeting, particularly to counter criminals or corrupt officials operating in RC(E). Department of Justice and Intelligence Community assistance was instrumental in helping RC(E) build actionable legal cases against corrupt officials, many of whom actively collaborated with the insurgents to target both security forces and civilians. Nonlethal targeters worked out of the fusion cell to build target folders with a menu of options, ranging from proposed legal action to requests to remove the official from office to key leader engagements intended to confront or shame negative influencers. This process has been adopted across the theater as the Joint Prioritized Shaping and Influence List and is currently a top priority for all levels of command. ISAF now tracks corrupt officials and negative influencers in all provinces and has issued guidance specifically aimed at limiting public engagements that would give the appearance of coalition support to these individuals. Working in concert with Rule of Law staff and stability operations experts, the CJTF Nonlethal Targeting Cell identified numerous corrupt officials who were later removed from government positions in RC(E), with several being charged, convicted, and sentenced. Members of the population, to include GIRoA members, are now more willing to come forward and report corruption through sworn statements because of recent success at removing prominent GIRoA members due to their corrupt, criminal, or insurgent activities. Solving corruption will be an arduous process, but efforts like this provide a way ahead to attack the problem in concert with GIRoA.

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insurgent networks in Afghanistan are highly adaptive and quickly replace leaders and resupply captured materials

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tactical experience, and local intelligence sources as never before. The result was a 71 percent increase in reporting and a striking 60 percent reduction in ANSF casualties after only 90 days.[12]

Joint Network Targeting

Afghanistan is home to a dangerous insurgency characterized by highly organized and effective networks made up of commanders, financiers, suppliers, intelligence operatives, propagandists, and foot soldiers. To confront and defeat them, CJTF–82 refined existing joint doctrine to fit RC(E)'s unique operational environment to target insurgent networks using a full-spectrum approach.[13] Called joint network targeting (JNT), this process featured both lethal and nonlethal components designed to attack systems, not just personalities, to disrupt and collapse insurgent cells throughout the battlespace.

The previous rotation, with fewer troops and heavier national support element responsibilities, had delegated most targeting functions to the brigades. With more assets flowing into Afghanistan as U.S. priorities shifted from Iraq, the need to focus resources—Special Operations Forces (SOF) and conventional units, ISR, fires, aviation,

Insurgent networks in Afghanistan are highly adaptive and quickly replace leaders and resupply captured materials: "Cellular networks are by their nature resilient to attacks that kill or capture single individuals, suggesting a different approach."[15] While coalition forces are exceptionally good at deliberately targeting individuals, a focus on attacking the entire network required new organizations and techniques.[16] JNT looks at the problem holistically in order to conduct operations that degrade enemy effectiveness, drive down violence, and foster stability.

Attacking targets without analyzing network connections often resulted in tactical successes but no lasting operational effects. Expendable low-level leaders were quickly replaced. JNT analyzed the entire network—to include recruitment, training, logistical support, financing, command and control systems, leadership, and negative influencers.[17] CJTF–82 learned that "shredding" networks was possible by attacking not only key nodes in the enemy network, but also key functions simultaneously. This often took the form of major CJTF-level operations that massed ISR and other resources for extended periods to maintain continuous pressure.

Success in COIN will not come solely from kinetic operations; much depends on successfully integrating population security with stability operations. Still, in Afghanistan, we face an implacable and deadly enemy who must be confronted when he cannot be reconciled. Joint network targeting provides

one way to strike at insurgent networks with proven effect. An intercepted insurgent radio transmission put it succinctly: "They will kill us. They will kill us all."

CJTF–82 built upon the accomplishments and lessons learned of its predecessors in RC(E) to create new structures and approaches during OEF X. Its success was made possible by many actors and agencies, both in predeployment preparation and on the ground in Afghanistan. The future of COIN clearly lies in more effective and sophisticated mastery of the information domain; in hybrid and synergistic civil-military teams; in fused and thoroughly integrated combined formations; and in precise and holistic network targeting. For the first time, CJTF–82 innovations and adaptations in the areas of synchronized communications, unified action, combined action, and joint network targeting translated these concepts into concrete action in an active counterinsurgency, with exciting and encouraging results. Building on a foundation of rediscovered theory and practice, as well as on hard-earned lessons from the post-9/11 era, they represent new thinking and a new counterinsurgency model for successor organizations. **JFQ**

NOTES

[1] The Pashtun and Tajiks follow Sunni Islam, while the Hazaras, who may have descended from invading Mongol populations, are Shia. The Nuristanis were forcibly converted to Islam in 1895 and believe they descend from the soldiers and followers of Alexander, who campaigned there in the 4th century BCE.

[2] Hezb-e Islami Gulbuddin is led by Gulbeddin Hekmatyar, briefly prime minister in 1996 and a notorious anti-coalition warlord. Al Qaeda elements in Pakistan provided individual fighters and some training and financial support, as well as ideological inspiration, but did not conduct separate operations in Regional Command–East (RC[E]) as a tactical entity.

[3] The original objective to "defeat the Haqqani network" in RC(E) was later modified to "disrupt" as assets, particularly surveillance platforms, were moved to RC–South, the designated main effort.

[4] Consisting of the commanding general, deputy commanding generals for operations, support, and coalition affairs, the chief of staff, and command sergeant major.

[5] Agricultural Development Teams—manned by National Guard members with civilian backgrounds in agriculture—also played

key roles but reported to the battlespace-owning brigades. Three-person District Support Teams were also fielded in 20 selected districts on a trial basis.

[6] Other civilian agencies supporting the Command Joint Task Force such as the Department of Defense, Department of Justice, and intelligence activities do not operate under Chief of Mission authority.

[7] Coalition (vice U.S.) Provincial Reconstruction Teams reported to national authorities and coordinated with, but were not task organized under CJTF–82.

[8] The CJTF–82 mission statement read: "CJTF–82/RC(E), in partnership with Government of the Islamic Republic of Afghanistan and in close coordination with joint, interagency, and multinational partners, conducts combined action counterinsurgency (COIN) operations to protect the population, increase the competency, capacity, and credibility of Afghan institutions, and defeat Anti-Afghan Forces."

[9] See Field Manual 3–24, *Counterinsurgency* (Washington, DC: Headquarters Department of the Army, December 2006).

[10] In some cases, embedded training teams/police mentor teams returned to the units from which they were drawn; in others, they were reassigned to RC–South or redeployed without replacement as their tours expired.

[11] Data from CJTF–82 CJ3 Significant Activities Reporting.

[12] Data from ANA 203d Corps G3.

[13] Targeting is "the process of selecting and prioritizing targets and matching the appropriate response to them, considering commander's objectives, operational requirements, capabilities, and limitations." See Joint Publication 1–02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, April 12, 2001, as amended through October 31, 2009), 538.

[14] A *trigger* is defined as a reliable intelligence event confirming the location of a target in space and time.

[15] Derek Jones, *Understanding the Form, Function, and Logic of Clandestine Cellular Networks: The First Step in Effective Counternetwork Operations* (Fort Leavenworth, KS: School of Advanced Military Studies, May 2009), 55.

[16] This approach was not invented in Afghanistan in Operation *Enduring Freedom X*, but built upon and refined earlier and evolving practices.

[17] Joint Publication 2–01.3, *Joint Intelligence Preparation of the Operational Environment* (Washington, DC: The Joint Staff, June 16, 2009), C–12. *Negative influencers* refers to civilian or security leadership figures who support insurgent or criminal activity for financial or ideological reasons.

[18] Tom Deveans, CJTF–82 CJ3 Assessments, email, April 23, 2010.

Clausewitz Reconsidered

By H.P. Willmott and Michael B. Barrett

Praeger Security International, 2010

236 pp. $22.95

ISBN: 978–0–313–36286–6

Reviewed by
DOUGLAS PEIFER

Carl von Clausewitz continues to inspire, antagonize, and confuse; at least 5 books have appeared in the last 3 years that seek to explain, contextualize, or critique *On War.* Hew Strachan's *Clausewitz's* On War (2007), Antulio Echevarria's *Clausewitz and Contemporary War* (2007), the Oxford University Press conference anthology on *Clausewitz in the Twenty-first Century* (2007), and Jon Sumida's *Decoding Clausewitz: A New Approach to* On War (2008) are inspired by Clausewitz's study and seek to clarify, elaborate on, or use his concepts to shed light on contemporary war. H.P. Willmott, by way of contrast, contends that *On War* has attained the status of a sacred text, with a fawning preeminence bordering on sycophancy accorded to it. In *Clausewitz Reconsidered,* Willmott and Michael Barrett seek to examine war in the two centuries that have passed since Clausewitz lived and fought. In a critique of Clausewitz reminiscent of those of John Keegan and Martin van Creveld, they contend that Clausewitz conceived of war solely in terms of interstate conflict pursued for political objectives. Their purpose is not to challenge *On War*'s continued insights and relevance to wars between states, but rather to provide complementary insights about war in its many other forms.

Willmott and Barrett have grounds for their contention that Clausewitz does not provide the "answer to all questions" about war and that his masterpiece left important elements untouched. Clausewitz pays scant attention to finances in *On War* despite Cicero's 2,000-year-old admonition that "endless money forms the sinews of war." Economics, seapower, and particularly the issue of credit are outside the framework of his study, despite the essential role that British subsidies played in funding the coalitions that contained Louis XIV and defeated Napoleon. More broadly, Clausewitz consciously excluded weapons development and the raising and equipping of fighting forces from his theory of war (book II, chapter 1), a choice perhaps justified in the context of the Napoleonic Wars but inadequate to understanding the contribution made by technological developments in the world wars and the Cold War. One might justly charge Clausewitz with ignoring finances, technology, and force development in his study of war, and had Willmott and Barrett provided a fuller examination of these factors, their analysis would have been a welcome complement to Clausewitz's *On War.*

Instead, Willmott and Barrett revive the worst mischaracterizations of Clausewitz and his work. They charge him with conceiving of war as exclusively the preserve of the state and its agents (p. 153). They resurrect the odd notion that Clausewitz's contention that "war is an instrument of policy" ignores civil, ethnic, religious and other "nonpolitical" wars. They characterize Clausewitz's conception of war as "antiseptic and simplistic" (p. 4), an astounding assertion given the attention that Clausewitz devotes to intangible factors such as passion, fog, friction, and morale in books I and III of *On War.* They assert that Clausewitz presents a singular conception of war, an incredible misreading of a book that seeks to grapple with the many manifestations of war, from the limited wars of the ancien régime (book VIII) to the near–total war of the Napoleonic era to the people in arms (book VI, chapter 26).
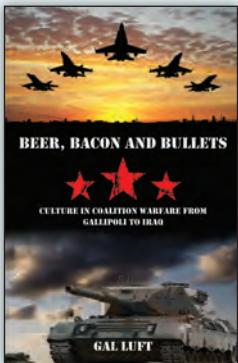
Willmott and Barrett seek to use Clausewitz as a springboard to examine factors they believe *On War* failed to address adequately. They aspire to provide new perspectives and to challenge conventional wisdom and periodization. Their alternative conceptions of when the modern warfare era began, their use of unusual comparisons (for example, the Civil War and the Pacific campaign of World War II), and their emphasis on wars of decolonialization rather than the Cold War examine modern war from new angles. Their analysis of conflict since the Cold War period embraces nontraditional security issues such as resource and income disparities, population growth, and globalization. They write with verve and style and provide a wealth of colorful details, reflecting the insights gained over decades of writing about naval warfare and teaching military history.

Yet even judged on these merits and ignoring its weak analysis of Clausewitz, the book falls short in three areas. First, its organization is scattered and uneven. The sections dealing with airpower, for example, devote more time to John Warden, *Desert Storm*, and Kosovo than to the preceding 80 years of air warfare. The portion entitled "Mahan and Corbett Reconsidered" contains absolutely no discussion of Corbett or any of his ideas. Second, the work contains a number of problematic historical interpretations, from claims that the Confederacy sought to fight a war of attrition (p. 42) to an assertion that mental rather than material factors caused the stalemate of World War I (p. 46) to the contention that Nazism played a central role in the Wehrmacht's victories of 1939–1941 (p. 58). These questionable assertions, among others, certainly merit more elaboration and source citation than they receive. This draws attention to the work's third shortcoming. The notes and citations are discursive in nature, with little effort made to substantiating the facts, figures, and details that abound throughout the book. This can be overlooked in many cases, but when the text remarks that the Taliban participated in the 1991 coalition against Saddam (p. 157) and refers to allegations that the 1993 "attack on the World Trade Center . . . was organized on the basis of C.I.A. manuals" (p. 207, n. 4), the reader has a right to know the source of these dubious insights.

Clausewitz Reconsidered is neither a theoretical critique of *On War* and its concepts, nor a tightly organized history of modern warfare since Napoleon. It is instead a highly idiosyncratic series of essays on modern warfare by two well-established military historians. It is thought-provoking but contentious, alternately insightful and wide of the mark. **JFQ**

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Beer, Bacon and Bullets: Culture in Coalition Warfare from Gallipoli to Iraq

By Gal Luft
BookSurge Publishing, 2010
327 pp. $18.99
ISBN: 978–1–43–926096–8

Reviewed by
TIFFANY G. PETROS

Although the threats facing the international community in the 21st century (including terrorism, cyber attacks, and proliferation of weapons of mass destruction) differ from those of other periods in history, what has not changed since antiquity is the building of coalitions by foreign soldiers and statesmen in an effort to promote and maintain security. Equally longstanding have been misunderstandings and disagreements among people of different cultural backgrounds that have threatened coalition cohesiveness and jeopardized military operations.

In this important work, Gal Luft examines five historical case studies to determine the role of culture in the planning and conduct of coalition operations. He also offers introductory and concluding chapters on culture and war from a broader perspective. Fundamental to this effort, the author asks the questions, "Does culture matter?" and "If so, in what ways?" Among the cultural factors he considers are language, religion, customs, gender roles, education, ethnicity, values, and overall philosophy.

He looks at these factors from various perspectives—those of the society at large, the military as a subset of society, and the individual (that is, military commanders)—to determine how culture impacts the ability of foreign militaries to live and work with one another. The individual level of analysis is particularly relevant, since as the case studies demonstrate, commanders can promote or undermine cross-cultural cooperation in a coalition environment. Luft also correctly points out that while generalizations are necessary to discussions of culture, there is an inherent danger in oversimplifying and/or presenting characteristics of one group as superior to another. Further, he acknowledges that the book focuses heavily on the perceptions of Western militaries toward their counterparts, giving less weight to non-Western (Asian and Muslim) perspectives. This is a noticeable drawback of the book, but one that is understandably difficult to mitigate in light of available resources.

Although scholars have long written on aspects of culture and warfare, this book is unique in both the cases selected and the author's insight derived from having served in a coalition environment. Luft, currently an executive director of the think tank Analysis of Global Security, previously served in the Israel Defense Forces (IDF) where he was deployed for almost 5 years in combat assignments in South Lebanon. He worked daily with Arab soldiers from the South Lebanon Army (SLA) and details that history and experience in chapter six. Dr. Luft's work also differs from that of scholars such as the late Samuel P. Huntington, who argued in *The Clash of Civilizations* (1996) that cultural fault lines serve as a catalyst for conflict. Luft suggests that cooperation across fault lines is just as likely to occur. The author notes that "intra-civilization" conflict has often invited foreign intervention and cites U.S. involvement in the Gulf War (1990–1991) as one such example (p. xiv). As illustrated by the Gulf War, in cases where foreign intervention is involved, mediating cultural differences becomes even more important to the success of the operation.

The book offers a variety of case studies and perspectives from which to consider culture and coalition warfare. In addition to providing valuable historical studies, the chapters highlight individual cultural challenges faced by the actors involved in the various coalitions. Chapter two describes the relationship between Germans and their Ottoman Turkish counterparts during World War I. The author notes how the two sides communicated in French—ironically, the language of their enemy. He also discusses Germany's support for Turkish jihad and its unintended consequences.

Chapter three reviews British-Japanese cooperation in the context of their World War I alliance. This chapter focuses on their joint efforts to win the Battle of Tsingtau, a frequently ignored yet important battle for control of a small German colony in China. Their success marked the first defeat of Germany in World War I. Success did not come without obstacles, however, in the coalition relationship. For example, the two sides had different views on casualties and capitulation. That said, previous cross-cultural cooperation between Britain and Japan in part contributed to the successful engagement.
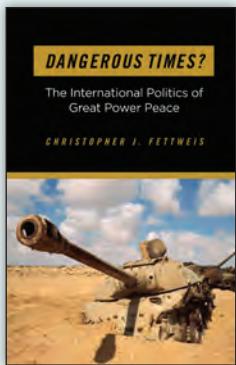
Chapter four examines U.S.-Chinese relations during World War II. The chapter highlights cultural, strategic, and logistical incompatibilities that hampered productive relations, as well as illustrating the consequences of distrust between leadership. For the Chinese, "saving face" was a deeply entrenched cultural imperative that had significant consequences for the coalition in time of war. Chapter five examines U.S. and Saudi cooperation in the Persian Gulf War. Cultural issues such as religion, gender roles, and tradition complicated coalition relations as well as impacting the rights of U.S. Soldiers temporarily based on Saudi soil.

Finally, chapter six examines the relationship between the IDF and the SLA from 1985 to 2000. This chapter differs from the other cases described in the book in that cooperation extended over more than 15 years, the SLA was comprised of multiple groups—all defined as Arabs, but with differences in religion and ethnicity—and the cooperation was between a state and a nonstate actor. The chapter details successes and missteps in the long-term coalition that ultimately ended in 2000.

Overall, this book is a valuable resource for soldiers, scholars, policymakers, and civilians who want to better understand the significance of culture in planning and executing coalition operations. The lessons offered will become increasingly important as coalition operations become the norm. Since 2001, more than 45 countries have contributed to the North Atlantic Treaty Organization–led International Security Assistance Force in Afghanistan. In such coalitions, managing and mitigating cross-cultural tensions are key to the success of joint operations. The lessons learned can enhance not only the U.S. ability to work with partners in coalitions, but also other areas of security cooperation such as building partner institutional capacity to support and maintain coalition engagement. **JFQ**

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Dangerous Times? The International Politics of Great Power Peace

By Christopher J. Fettweis
Georgetown University Press, 2010
273 pp. $29.95
ISBN: 978–1–58901–710–8

Reviewed by
FRANCIS P. SEMPA

Forget Clausewitz, Sun Tzu, and Machiavelli. Put aside Mackinder, Mahan, and Spykman. Close the military academies and war colleges. Shut our overseas bases. Bring our troops home. Make dramatic cuts in the defense budget. The end of major war, and perhaps the end of war itself, is near, according to Tulane assistant professor Christopher Fettweis in his recent book, *Dangerous Times? The International Politics of Great Power Peace*.

Fettweis is not the first intellectual, nor will he be the last, to proclaim the onset of perpetual peace. He is squarely in the tradition of Immanuel Kant, Herbert Spencer, and Norman Angell, to name just three. Indeed, in the book's introduction, Fettweis attempts to rehabilitate Angell's reputation for prophecy, which suffered a devastating blow when the Great War falsified his claim in *The Great Illusion* that economic interdependence had rendered great power war obsolete. Angell, Fettweis writes, was the first "prominent constructivist thinker of the twentieth century,"

and was not wrong—just ahead of his time (p. 5).

Fettweis bases his theory or vision of the obsolescence of major war on the supposed linear progress of human nature, a major tenet of 20th-century liberalism that is rooted in the rationalist theories of the Enlightenment. "History," according to Fettweis, "seems to be unfolding as a line extending into the future—a halting, incomplete, inconsistent line perhaps, one with frequent temporary reversals, but a line nonetheless." The world is growing "more liberal and more reliant upon reason, logic, and science" (p. 217).

We have heard this all before. Human nature can be perfected. Statesmen and leaders will be guided by reason and science. Such thinking influenced the visionaries of the French Revolution and produced 25 years of war among the great powers of Europe. Similar ideas influenced President Woodrow Wilson and his intellectual supporters who endeavored at Versailles to transform the horrors of World War I into a peace that would make that conflict "the war to end all wars." What followed were disarmament conferences, an international agreement to outlaw war, the rise of expansionist powers, appeasement by the democracies, and the most destructive war in human history. Ideas, which Fettweis claims will bring about the proliferation of peace, transformed Russia, Germany, and Japan into expansionist, totalitarian powers. Those same ideas led to the Gulag, the Holocaust, and the Rape of Nanking. So much for human progress.

Fettweis knows all of this, but claims that since the end of the Cold War, the leaders and peoples of the major powers, except the United States, have accepted the idea that major war is unthinkable. His proof is that there has been no major war

among the great powers for 20 years—a historical period that coincides with the American "unipolar" moment. This is very thin empirical evidence upon which to base a predictive theory of international relations.

Fettweis criticizes the realist and neorealist schools of thought, claiming that their adherents focus too narrowly on the past behavior of states in the international system. In his view, realists place too great an emphasis on power. Ideas and norms instead of power, he claims, provide structure to the international system. Classical geopolitical theorists such as Halford Mackinder, Alfred Thayer Mahan, Nicholas Spykman, and Colin Gray are dismissed by Fettweis in less than two pages, despite the fact that their analyses of great power politics and conflict have long been considered sound and frequently prescient.

Realists and classical geopoliticians have more than 2,000 years of empirical evidence to support their theories of how states and empires behave and how the international system works. Ideas are important, but power is the governing force in international politics, and geography is the most permanent factor in the analysis of power.

Fettweis makes much of the fact that the countries of Western and Central Europe, which waged war against each other repeatedly for nearly 400 years, are at peace, and claims that there is little likelihood that they will ever again wage war against each other. Even if the latter assertion turns out to be true, that does not mean that the end of major war is in sight. Throughout history, some peoples and empires that previously waged war for one reason or another became pacific without producing worldwide perpetual peace: the Mongols, Saracens, Ottomans, Dutch, Venetians, and the Spanish Empire come
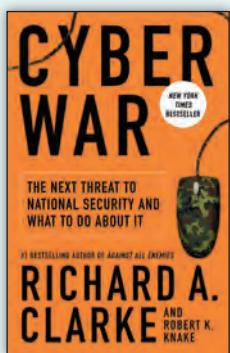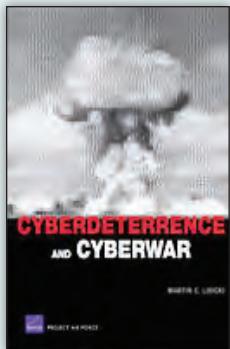
immediately to mind. A Europe at peace does not translate to an Asia, Africa, and Middle East at peace.

In a world in which major wars are obsolete, Fettweis believes the United States needs to adjust its grand strategy from vigorous internationalism to strategic restraint. His specific recommendations include the removal of all U.S. military forces from Europe; an end to our bilateral security guarantees to Japan and South Korea; an end to our alliance with Israel; an indifference to the balance of power on the Eurasian landmass; a law enforcement approach to terrorism; a drastic cut in military spending; a much smaller Navy; and the abolition of regional combatant commands.

What Fettweis is proposing is effectively an end to what Walter Russell Mead calls "the maritime world order" that was established by Great Britain and maintained first by the British Empire and then by the United States. It is a world order that has defeated repeated challenges by potential hegemonic powers and resulted in an unprecedented spread of prosperity and freedom. But all of that, we are assured, is in the past. China poses no threat. The United States can safely withdraw from Eurasia. The power vacuum will remain unfilled.

Fettweis needs a dose of humility. Sir Halford Mackinder, the greatest of all geopoliticians, was referring to visionaries and liberal idealists like Fettweis when he cautioned, "He would be a sanguine man . . . who would trust the future peace of the world to a change in the mentality of any nation." Most profoundly, General Douglas MacArthur, who knew a little bit more about war and international conflict than Fettweis, reminded the cadets at West Point in 1962 that "only the dead have seen the end of war." **JFQ**

Francis P. Sempa is the author of *Geopolitics: From the Cold War to the 21st Century* and *America's Global Role: Essays and Reviews on National Security, Geopolitics and War.* He is an Assistant U.S. Attorney for the Middle District of Pennsylvania, an adjunct professor of political science at Wilkes University, and a contributing editor to *American Diplomacy.*

Cyberdeterrence and Cyberwar
By Martin C. Libicki
RAND, 2009
244 pp. $33
ISBN: 978–0–8330–4734–2

Cyber War
By Richard A. Clarke and Robert K. Knake
Ecco, 2010
304 pp. $25.99
ISBN: 978–0–06–196223–3

Review essay by
BRIAN R. SALMANS

The concept of war within the cyber domain is no longer an esoteric topic of interest to small groups of people with unique technical skills. It is not rare to hear public discussions on the efficacy of cyber war, a malicious software exploit (most recently the Stuxnet), whether U.S. critical infrastructure is adequately defended from computer network attack, or if the notion of cyber war is over-hyped. Unfortunately, as this warfighting domain evolves, the immaturity at the strategic level of thought is being revealed: contradictory initiatives in the U.S. Air Force (which added cyberspace to its mission statement in 2005 and planned to create a cyber major command, but then changed direction and established a Numbered Air Force instead); the length of time it took the Obama administration to fill its cyber czar position; the discussion of what level of involvement the Federal Government (U.S. Cyber Command and the Department of Homeland Security) should have in protecting civilian resources.

In their books, *Cyber War* and *Cyberdeterrence and Cyberwar*, Richard Clarke (with Robert Knake) and Martin Libicki offer significant contributions in filling this gap in theory and policy and bringing the discussion of cyber war to a more developed level of thought. The authors' achievements are most notable in the area of cyber deterrence, presumably with the intent to get leadership at the strategic level to listen to their warnings as organizations are formed, policies issued, and doctrine developed.

Libicki's portfolio contains a long list of cyber-oriented writings from his work at the RAND Corporation and the National Defense University. *Cyberdeterrence and Cyberwar* is the result of a RAND study to "help clarify and focus attention on the operational realities behind the phrase 'fly and fight in cyberspace'" (p. iii). The chapter on cyber deterrence is the most impor-tant of this book. In it, Libicki highlights such important and "wicked" problems of deterrence as attribution, proportionality, escalation, effects, and the role of third-party hackers. These challenges, specifically in attribution and damage assessment from initiating a cyber attack, are the reasons why cyber deterrence is so hard, since deterrence is about sending a signal. Moreover, the worrisome problem of escalation, where cyber activities cross the line to kinetic attacks leading to a physical confrontation, is a consideration that nuclear strategists did not need to address, since they did not have to worry about conflict escalation beyond nuclear exchange. Libicki next proceeds to his most unique contribution to the discussion about warfare within the cyber domain, an issue that is also inseparable from deterrence: the motivation of the originator of cyber attacks. Four categories of motivation are considered: error, coercion, force, and other (such as feelings of invulnerability on the part of the attacker, or the desire to create damage for its own sake). Libicki thoroughly discusses motivation, with thoughtful analyses of possible scenarios.

From these important considerations about deterrence, Libicki goes on the offensive, discussing various ways to respond within the cyber domain, both strategically and operationally. Here there is much room for disagreement as Libicki gets into less familiar territory, with assertions that are somewhat less convincing and do not hold up in practice. In considering conducting a computer network attack, Libicki maintains that several obstacles reduce the incentives of such attacks. An example is his belief that cyber attacks can tip off system administrators to further attacks, thus having the effect of strengthening their defense. Later, Libicki asserts there is a diminishing return from computer network attacks—that is, that more attacks reduce the available pool of vulnerabilities. However, he places too much confidence in system administrators (and in the effectiveness of intrusion detection system networks) learning from mistakes and computer attacks and responding correctly to further strengthen their systems. Frequent reports from the Department of Defense (DOD) and the Federal Government contend that at least 80 to 90 percent of cyber attacks are preventable or could have been avoided by proper configuration, monitoring, policies, or updating of patches. Moreover, in many instances the personnel most knowledgeable about computer network defense issues such as vulnerabilities and current threats are not the system administrators and, in many cases, do not talk with those administrators. Additionally, the belief that a finite number of vulnerabilities for information systems applications exists is hard to justify, considering the complexity of computer applications, the workload of system administrators, the ingenuity of hackers, the fact that updates or enhancements to applications can add their own vulnerabilities, and in observing vendor patch release trends. Anyone using the Internet Explorer browser can attest to the relentless cycles of vulnerabilities and patches.

Libicki returns to more solid ground as he wraps up his book by discussing cyber defense, which he states is "the Air Force's most important activity within cyberspace" (p. xx). Here he highlights the defensive goals of robustness, system integrity, and confidentiality. To paraphrase Sun Tzu, with computer network defense, to know oneself is essential to adequately defend one's network. The Federally

mandated initiative of enterprise architecture (EA) can be very effective in this regard. EA (which Libicki discussed in more detail in his 2007 work, *Conquest in Cyberspace*), can also contribute to the alignment of security efforts with the overall security goals derived from the cyber defense policy and risk analysis for any given entity of interest. Enterprise architecture can further address the trend of increasing complexity in information systems by facilitating the abstraction of this system complexity. EA—which, in many cases, is already being implemented in DOD organizations—may provide an organizing discipline in which to address cyber defense.

Another important addition to the discourse on cyber war and deterrence is Richard Clarke and Robert Knake's *Cyber War*. Clarke possesses an impressive national security résumé, having served in the Reagan, George H.W. Bush, Clinton, and George W. Bush administrations, where he served as the special advisor on cyber security. As with Libicki, Clarke's most important contribution to the discussion on cyber war concerns cyber deterrence. The authors of both books relate their substantial knowledge of nuclear deterrence to their consideration of cyber deterrence, but they make it clear that nuclear deterrence theory cannot simply be overlaid on the cyber domain. Interestingly, the difficulties of cyber deterrence and the lack of experience with and inability to determine secondary effects of cyber attacks (as well as the fact that the United States stands to lose the most in a cyber war) lead Clarke and Libicki to downplay the strategic value of offensive cyber war (as the value of a first strike or retaliatory nuclear capability was a crucial component of nuclear deterrence), and to advocate for

better and more effective cyber defenses (whereas with nuclear deterrence, a defensive capability against a nuclear strike was not an important aspect). These are two very important points the authors derive from their experience and from deterrence theory. Both authors are best here, as they methodically arrive at this conclusion with examples from the world of nuclear deterrence as well as pointing out where nuclear deterrence theory falls short within the unique parameters of the cyber domain. In other words, the authors warn, the best defense is not offense; indeed, a strong defense is an enabler of computer network attack.

A stronger cyber defense would strengthen the viability of an offensive cyber strategy by making the United States more likely to withstand an ongoing and escalatory cyber war. Clarke speculates that the United States may be self-deterred because it has the most to lose in a cyber conflict. But he also makes an important observation. With the issue of strategic nuclear war, the military did not maintain complete and secretive control over the entire debate; the academic research community and media also put light on nuclear warfighting policies and plans, resulting in rational discourse on such matters and leading to rational controls and nuclear warfighting plans. Clarke likens our present state of cyber ignorance at the national policy level to that of the European nations just prior to the outbreak of World War I; the plans and operations of military cyber units may be laying the foundation for cyber war with little public scrutiny or oversight. Clarke stresses the need for public dialogue about cyber war—a most useful suggestion to avoid a cyber General Curtis Lemay or "Dr. Strangelove" from forcing the Nation's leadership

into a cyber war for which we are not ready and where we do not fully develop the situation to consider all the ramifications and potential outcomes.

Belief in the importance of public discourse and oversight of governmental cyber war activities leads the authors of these two books to divergent views about the proper level of governmental involvement in cyber defense. Clarke is an advocate of large and aggressive Federal involvement in protecting the Nation's information systems; Libicki believes that the Federal Government can only play an indirect role in protecting private information systems and that a government deterrence policy could weaken the private sector's cyber defensive posture since it would transfer the responsibility for protecting systems from private owners to the government. As with Libicki's misguided confidence in system administrators, his argument is weak here as well. The Federal Government can and does have much influence over private sector communications infrastructure, and for there to be any reasonable level of protection of our Nation's critical infrastructure, the Federal Government must become heavily engaged and involved in securing it. There are many precedents for a more active Federal role in this context, such as the National Communications System and the Communications Assistance to Law Enforcement Act.

In the end, both *Cyber War* and *Cyberdeterrence and Cyberwar* cast light on important areas of cyber warfare that must be contemplated by researchers, military staff colleges, and policymakers at the national level. Neither Clarke nor Libicki is a cheerleader for offensive cyber capabilities, offering considered analyses on the difficulties inherent in their actual use. Instead, both demonstrate why

the best offense may be a strong cyber defense, an important point when leadership considers resourcing decisions. Libicki and Clarke provide a great service in identifying important starting points and considerations for a discourse on cyber topics, and helping to nudge the discussion of the cyber domain to another level of maturity. But the question will remain: Is anyone listening? **JFQ**

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Command Relationships

By GEORGE E. KATSOS

Whenever a new interagency working group convenes within the Capital Beltway, there is a question that almost always surfaces to some degree: "Could someone please explain the terms *COCOM, OPCON, TACON, assign*, and *attach*?" What follows are definitions, background, and broad analysis under normal conditions to better understand the development and usage of this Department of Defense (DOD) terminology.

DOD Definitions

Combatant command (command authority): nontransferable command authority[1] exercised by commanders of unified combatant commands (CCMDs) unless otherwise directed by the President or Secretary of Defense; authority to perform functions of command over assigned and attached forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command; operational control (OPCON) and tactical control (TACON) are inherent in a combatant command; cannot be delegated; also called COCOM;[2] DOD published term since 1989.[3]

Operational control: command authority that may be exercised by commanders at any echelon at or below the level of CCMD; authority to perform those functions of command over subordinate forces; should be exercised through the commanders of subordinate organizations; normally exercised through subordinate joint force commanders and Service and/or functional component commanders; normally provides full authority to organize commands and forces and employ those forces as the commander in operational control considers necessary to accomplish assigned missions; it does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training; inherent in COCOM and may be delegated within the command; also called OPCON;[4] DOD published term since 1950.[5]

Tactical control: command authority over assigned or attached forces or commands, or military capability or forces made available for tasking that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned; inherent in operational control; tactical control may be delegated to and exercised at any level at or below the level of combatant command; also called TACON;[6] DOD published term since 1989.[7]

Assign: To place units or personnel permanently in an organization and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel;[8] DOD term since 1949.[9]

Attach: The temporary placement of units or personnel in an organization;[10] DOD term since 1949.[11]

History

The authority of commanding military forces flows from the U.S. Constitution to the President as Commander in Chief. During World War II, an American unified high command was proposed to synergize military operations with the Allies. The new Joint Chiefs of Staff had the responsibility for the planning and strategy of the U.S. military war contribution to unilateral and multinational operations. During the war, the Armed Forces were represented by the Departments of War (Army and Air Force) and Navy (Navy, Marines, and Coast Guard during Federal mobilization) to the National Security Council led by the President. Under this structure, central unified command suffered as commanders competed for the same resources and senior leadership attention.

In 1946, the President approved the Outline Command Plan (the first Unified Command Plan) with permanent geographic unified commands under Joint Chiefs of Staff control. In 1947, Congress followed with legislation[12] establishing three military departments (Army, Navy, and Air Force, consisting of the Army, Navy and Marine Corps [and Coast Guard in time of war], and Air Force, respectively). Further organizational and Presidential scrutiny of Service rivalries resulted in more civilian oversight. Legislation and amendments shaped the President's intent of a unified command structure with more civilian control. In 1958, Congress established a clear line of command through the Secretary of Defense to unified commanders authorizing operational command over permanently assigned or forces temporarily attached to unified commands.[13]

The following year, the term *operational command* (OPCOM) was approved with its definition by the Defense Secretary as a DOD military term.[14] With the introduction of OPCOM into the joint force lexicon, the definition's similarity

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with OPCON generated a multidecade terminology debate on interpretation and correct usage. However, in 1986, Congress cemented the term *combatant command (command authority)* for commanders in chief (CINCs) through legislation.[15] Known as the DOD acronym *COCOM*, it replaced *OPCOM* within DOD terminology and together with TACON joined the already existing DOD term OPCON in 1989.[16] Since 2002, CINCs have been known as combatant commanders (CCDRs) as directed by the Secretary of Defense.[17]

Command Authority

Per the Goldwater-Nichols Department of Defense Reorganization Act of 1986, the Services permanently assign forces to unified combatant commands. These assigned forces are identified in the Global Force Management Implementation Guidance signed by the Defense Secretary and are commanded by a CCDR under a COCOM. Attached forces are temporarily transferred forces from one CCDR to another by the President or Secretary. Besides COCOM, CCDRs exercise OPCON or TACON over assigned and attached forces through subordinate commanders to accomplish specific missions. Subordinate commanders exercise OPCON or TACON over the forces under their command. Both OPCON and TACON are inherent to COCOM and may be delegated.

Two types of CCDRs are geographic combatant commanders (GCCs) and functional combatant commanders (FCCs). As a CCDR, a GCC exercises COCOM over assigned forces and OPCON or TACON over attached forces. For example, U.S. Central Command (USCENTCOM) comprises assigned forces from the Army, Navy, Marine Corps, and Air Force. If a contingency breaks out and additional non-USCENTCOM forces are needed, the Defense Secretary can authorize forces to be attached to USCENTCOM from U.S. Pacific Command (USPACOM) for a specific mission and may attach these forces under OPCON or TACON. The USCENTCOM CCDR would then have OPCON or TACON over the USPACOM forces that were attached. The USCENTCOM CCDR can organize a joint task force (JTF) and provide forces that the JTF commander may have OPCON or TACON over as directed by the USCENTCOM CCDR. The JTF commander will then have OPCON of his own Service forces and OPCON or TACON over attached forces.

Similar to and in support of GCCs, FCCs may conduct independently assigned missions with their forces and are usually global in nature. As a result, FCC forces can move in and out of GCC areas of responsibility. For example, the U.S. Special Operations Command (USSOCOM) CCDR exercises COCOM over all assigned Active Component and most mobilized Reserve Component (RC) special operations forces (SOF). In its role as an FCC, USSOCOM provides forces on a temporary basis to other CCMDs where CCDRs normally exercise OPCON of attached SOF through a subordinate commander (CDR). When directed, the USSOCOM CCDR can establish and employ a joint SOF task force as the supported CDR.

Even though GCCs exercise COCOM over assigned intratheater airlift forces, the U.S. Transportation Command CCDR, as an FCC, has COCOM over intertheater airlift forces.

Other Authorities and Relationships

Joint force commander (JFC) is used as a general term for a CCDR, subunified commander, or JTF commander authorized to exercise COCOM or OPCON over a joint force.[18] Considered an area commander, a JFC normally establishes a joint force on a geographic area instead of a GCC that has an area of responsibility. It is the duty of the JFC to assist the operations of transient forces to the extent of existing capabilities and consistent with other assigned missions. Transient forces do not come under the chain of command of a JFC solely by their movement across boundaries except when a CCDR is exercising TACON for force protection. Forces may be reassigned by the Defense Secretary when a transfer to a joint force will be permanent or for an indeterminately long period. CCDRs exercise COCOM and subordinate JFCs exercise OPCON over reassigned forces.

A JTF commander is designated by the Defense Secretary, a CCDR, a subunified commander, or an existing JTF commander.[19] A JTF commander may organize assigned or attached forces based on the level of command authorized (OPCON or TACON). A JTF may be established on a geographical area or functional basis.[20]

A support command authority relationship is established by a superior CDR between subordinate CDRs when one organization should aid, protect, complement, or sustain another force. Support may be exercised by CDRs at any echelon at or below the CCMD level. The establishing CDR is responsible for ensuring that both the supported and supporting CDRs understand the degree of authority that the supported CDR is granted. The four categories of support that a CCDR may direct over assigned or attached forces are general support, mutual support, direct support, and close support.

Administrative control (ADCON) provides for the preparation of most military forces and their administration and support. Per U.S. Code (USC), the Services are responsible for the administration and support of their own forces. They fulfill their responsibilities by exercising ADCON through the CDRs of the Service component commands assigned to CCMDs and through the Services for forces not assigned to the CCMDs.[21]

Most RC forces are assigned by the Defense Secretary to the CCMDs when mobilized or ordered to Active duty for specific periods under the authority provided in Title 10, USC, sections 162 and 167.[22] The Army Reserve, Army National Guard, Air Force Reserve, Air National Guard, Navy Reserve, Marine Corps Reserve, and Coast Guard Reserve make up the RC. Prior to activation, CCDRs exercise training and readiness oversight (TRO) over assigned Reserve forces when not on Active duty or Active duty for training. TRO is no longer applicable to RC forces when mobilized or ordered to Active duty. **JFQ**

NOTES

[1] 10 U.S. Code (USC) § 164.

[2] Joint Publication (JP) 1–02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, June 30, 2010), 80.

[3] *Dictionary of United States Military Terms for Joint Usage* (Washington, DC: The Joint Staff, December 1, 1989), 73.

[4] JP 1–02 (June 30, 2010), 339.

[5] *Dictionary of United States Military Terms* (Washington, DC: The Joint Staff, 1950), 64.

[6] JP 1–02 (June 30, 2010), 457.

[7] JP 1–02 (December 1, 1989), 361.

[8] JP 3–0, *Joint Operations* (Washington, DC: The Joint Staff, March, 22, 2010), GL7.

[9] *Dictionary of United States Military Terms* (Washington, DC: The Joint Staff, 1949), 10.

[10] JP 3–0, GL7.

[11] *Dictionary of United States Military Terms* (1949), 10.

[12] Public Law 80–253, *National Security Act of 1947*, July 26, 1947, 61 Stat. 495, 50 USC § 401.

[13] Public Law 85–599, *Department of Defense Reorganization Act of 1958*, August 6, 1958, 72 Stat. 514, 50 USC § 401.

[14] *Dictionary of United States Military Terms* (Washington, DC: The Joint Staff, July 1959), 98.

[15] Public Law 99–433, *Department of Defense Reorganization Act of 1986*, October 1, 1986, 100 Stat. 992, 10 USC § 111.

[16] JP 1–02 (December 1, 1989).

[17] Jim Garamone, "CINC Is Sunk," American Forces Press Service (October 25, 2002), available at <www.defenselink.mil/news/newsarticle.aspx?id=42568>.

[18] JP 1–02 (June 30, 2010), 247.

[19] Ibid., 257.

[20] JP 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: The Joint Staff, March 20, 2009), V–10.

[21] Ibid., IV–12.

[22] Ibid., IV–12.

JPs Under Revision

JP 1, *Doctrine for the Armed Forces of the United States*

JP 1–0, *Personnel Support to Joint Operations*

JP 1–04, *Legal Support to Military Operations*

JP 1–06, *Financial Management Support in Joint Operations*

JP 2–0, *Joint Intelligence*

JP 2–01, *Joint and National Intelligence Support to Military Operations*

JP 2–03, *Geospatial Intelligence Support to Joint Operations*

JP 3–0, *Joint Operations*

JP 3–00.1, *Strategic Communication*

JP 3–01, *Countering Air and Missile Threats*

JP 3–03, *Joint Interdiction*

JP 3–04, *Joint Shipboard Helicopter Operations*

JP 3–05.1, *Joint Special Operations Task Force Operations*

JP 3–07, *Stability Operations*

JP 3–07.3, *Peace Operations*

JP 3–07.4, *Counterdrug Operations*

JP 3–11, *Operations in Chemical, Biological, Radiological, and Nuclear (CBRN) Environments*

JP 3–12, *Cyberspace Operations*

JP 3–13, *Information Operations*

JP 3–13.1, *Electronic Warfare*

JP 3–13.2, *Military Information Support Operations (PSYOPS)*

JP 3–13.3, *Operations Security*

JP 3–13.4, *Military Deception*

JP 3–15.1, *Counter–Improvised Explosive Device Operations (C–IED)*

JP 3–16, *Multinational Operations*

JP 3–18, *Forcible Entry Operations*

JP 3–27, *Homeland Defense*

JP 3–28, *Civil Support*

JP 3–29, *Foreign Humanitarian Assistance*

JP 3–32, *Command and Control for Joint Maritime Operations*

JP 3–33, *Joint Task Force Headquarters*

JP 3–35, *Deployment and Redeployment Operations*

JP 3–40, *Combating Weapons of Mass Destruction*

JP 3–41, *Chemical, Biological, Radiological, Nuclear, and High-Yield Explosives Consequence Management*

JP 3–50, *Personnel Recovery*

JP 3–57, *Civil-Military Operations*

JP 3–59, *Meteorological and Oceanographic Operations*

JP 3–60, *Joint Targeting*

JP 3–63, *Detainee Operations*

JP 3–72, *Nuclear Operations*

JP 4–0, *Joint Logistics*

JP 4–01, *The Defense Transportation System*

JP 4–01.2, *Sealift Support to Joint Operations*

JP 4–01.5, *Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations*

JP 4–01.6, *Joint Logistics Over-the-Shore (JLOTS)*

JP 4–02, *Health Service Support*

JP 4–06, *Mortuary Affairs in Joint Operations*

JP 4–08, *Logistics in Support of Multinational Operations*

JP 4–10, *Operational Contract Support*

JP 5–0, *Joint Operation Planning*

JP 6–01, *Joint Electromagnetic Spectrum Operations (JEMSO)*

JPs Revised (last 6 months)

JP 2–01.2, *Counterintelligence and Human Intelligence Support in Joint Operations*

JP 3–05, *Special Operations*

JP 3–08, *Interorganizational Coordination During Joint Operations*

JP 3–15, *Barriers, Obstacles, and Mine Warfare for Joint Operations*

JP 3–34, *Joint Engineer Operations*

U.S. Air Force (Scott Ash)

Improving Joint Fires for Special Operations

A Mandate for the Joint Force Fires Coordinator

By MICHAEL WASTILA

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Though great strides have been made since joint doctrine was legislated by the Goldwater-Nichols Department of Defense Reorganization Act of 1986, joint fire support coordination still presents a quandary. The need for a principal advisor having responsibility for the planning and execution of joint fires echoes across military academia; however, joint doctrine is lax in addressing the matter. Nowhere is this need more apparent than at the Joint Special Operations Task Force (JSOTF), where coordination is bifurcated at best. At the JSOTF, doctrine relegates management of joint fires and air support to a component of singular purpose, lacking inclusion of all fire support elements (FSEs) as a result. Institutionalization of a Joint Force Fires Coordinator (JFFC) as part of the JSOTF headquarters (HQ) within the Operations Directorate (J3) will improve the successful integration, synchronization, and control of joint fires in support of special operations.

Fundamentals

Revisiting accepted principles of joint fire support, joint fires are weapons systems used during the employment of forces from two or more components in coordinated action to produce desired effects in support of a common objective. Coordinated action requires the synchronization of joint fires with the maneuver force, as they are complementary functions. The concept of fires describes

how the joint force applies lethal and nonlethal fires to achieve desired effects and attain the objective.[1] Lethal fires are categorized by delivery means such as fixed-wing aircraft, attack helicopters, unmanned aircraft, missiles, rockets, cannon artillery and mortars, and naval surface fire support. Nonlethal fires are broadly delineated as information operations (IO), which include electronic attack, computer network attack, and the like.

Joint Force Commanders (JFCs) commonly view fire support coordination in relation to four essential tasks. First and foremost, fires must support and be responsive to forces in contact. Second, joint fires must support the JFC's concept of operations. Third, the concept of fires must integrate with the scheme of maneuver. Lastly, fires in support of the joint force must be sustainable.[2] The coordination of joint fires is crucial to the JSOTF given the need to plan, synchronize, and deconflict diverse assets from air, land, and maritime components, as well as those from multinational forces. Practically, unity of effort is only achievable with respect to these essential tasks through the implementation of a JFFC whose authority ensures inclusion of all FSEs and is dismissive of parochial component views.

Doctrine

The JFC establishes a JSOTF to conduct special operations in hostile, denied, or politically sensitive environments to achieve diplomatic, informational, military, and/or economic objectives, activities that "may require low visibility, clandestine, or covert capabilities."[3] In general, small, specially organized units manned by personnel with unique expertise, training, and equipment make up Special Operations Forces (SOF). A JSOTF includes SOF from more than one Service and conducts operations with, or augmented by, conventional forces as necessary. SOF are limited in numbers so focused efforts are essential to preserve the force. Accordingly, joint fire support is a critical capability and force multiplier for the JSOTF. Amazingly, for such a highly specified organization, coordination of joint fires is doctrinally deficient and too often overlooked. To date, "no theater special operations commands have standing joint fires coordination centers,"[4] and JSOTF HQs are minimally staffed with joint fires expertise.

Organization of a JSOTF HQ is consistent with that of a conventional Joint Task Force (JTF). The J3 forms a Joint Operations Center (JOC) to serve as the focal point for all operational matters to include the direction of current operations and the planning of future ones. A JSOTF may include a Future Plans Directorate (J5). If not, the J3 assumes all future planning responsibilities; if so, the J3 Future Operations Section (J35) receives approved plans in handover from the J5 for tasking and execution. Doctrine specifies only that joint fire support coordination falls under the responsibilities of the J3. The J35 directs JSOTF targeting and integrates IO into future operations.[5]

The J3 is responsible to "plan, synchronize, and deconflict joint fires and joint air support within the JSOTF, [forming] a Joint Fires Element (JFE) and a Joint Air Coordination Element (JACE)"[6] as necessary. This is consistent with global doctrine governing joint fire support where the JFE is an *optional* staff element comprised of representatives from J3 sections, directorates, and components as necessary.[7] When established, the JFE helps manage fires within the Joint Special Operations Area (JSOA). Regardless, JSOTF doctrine effectively defaults the coordination and deconfliction of joint fires and airspace to the J3, JACE, and the Special Operations Liaison Element (SOLE).[8] The JACE specifically focuses on airpower integration and capabilities; its joint fires expertise is limited to air attack. The SOLE works directly for the JSOTF commander and is located at the theater Joint Air Operations Center (JAOC). It provides visibility of JSOTF activities to the Joint Force Air Component Commander (JFACC) staff for coordination, synchronization, and integration of SOF air, surface, and subsurface operations. Notably, the SOLE lacks authority to execute command and control over any SOF element.[9]

Anecdotal Evidence

Whether it is the Gulf War, Somalia, Afghanistan, or Iraq, the lack of a JFFC to advise the JSOTF commander on fire support usage plagues mission planning and execu-

tion. The discord stems from governing joint doctrine because responsibility for the JFC's concept of fires is unspecified.[10] For reasons more related to airspace management, this responsibility defaults to the air component commander, whose focus naturally gives primacy to aviation fires. Since the JSOTF organizes in a manner similar to a conventional JTF, it takes its lead from joint doctrine in this regard.[11] The JSOTF's comparatively less robust table of organization, lack of operational depth, and dependence on nonorganic fire support assets amplify this discord. Without JFFC oversight, special operations planners overlook available fires resources and tend toward crisis action, ultimately reducing mission effectiveness.

Operation *Desert Storm* exemplifies the gap created when the air component drives

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the story of Black Hawk Down *offers a prolific case where a small-scale raid lacking adequate fires resources turned into a rescue and spiraled into an epic debacle*

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the SOF concept of fires. During *Desert Storm*, SOF were relegated to secondary missions within the conventional scheme of operations or left isolated altogether, as with the JSOTF formed for the "great Scud hunt" in the western Iraqi desert.[12] "No concerted effort was made to coordinate the actions of airpower and SOF to suppress launches."[13] Targeting and fire support coordination were the responsibility of the JFACC whose focus was the integration of airspace, not with ground elements.[14] History views the mission as ineffective given the successful launch of over 80 Scuds at Israel and Saudi Arabia; no hard evidence exists to support that any coalition air attacks resulted in interdiction.[15] JSOTF Scud-hunting operations failed to integrate SOF activities with aviation fire support. Unity of effort was impaired by inadequate JSOTF participation in the targeting process and development of the fire support plan, both key responsibilities of a JFFC.

The story of *Black Hawk Down* and Task Force Ranger in Somalia offers a prolific case where a small-scale raid lacking adequate fires resources turned into a rescue and spiraled into an epic debacle. Formed around staffers from the Joint Special Operations Command, the JSOTF HQ opted for a junior fire support officer. Arguably, the advice of a senior JFFC would have weighed more significantly in the

Marine Corps M1A1 Abrams tank conducts live-fire training during interoperability exercise with Moroccan armed forces

U.S. Air Force (Sean M. Worrell)

JFC's decision to conduct operations without contingency fire planning. The debate rages as to the appropriateness of daylight use of gunships or whether AC–130s could have been allocated to the task force.[16] However, a JFFC with authorities granted by the JFC surely would have prevailed in securing some alternate means to cover the ill-fated raid of October 3, 1993. Any number of platforms could have carved out a corridor of fire by which to escape;[17] in hindsight, collateral damage and loss of life would have been lessened. Fixation on the gunships likely led to a misperception as to the availability of fire support—naval surface fires comes to mind. Regrettably, Task Force Ranger's willingness to go it alone highlights SOF's greatest limitations, a lack of operational depth, and a dependence on nonorganic fires to close such gaps.

The experience of Task Force Dagger, the lead JSOTF employed early in Afghanistan, offers a more recent example. This JSOTF staff "was built around a Special Forces group HQ and faced problems using joint fires at the tactical and operational levels" from the onset.[18] In a repeating theme, the JSOTF HQ staff lacked the resident expertise to "handle the integration—incorporating joint fires in campaign planning, collating or submitting subordinate fires requests, and deconflicting operations."[19] Absent institutionalized joint fires planning, SOF applied hastily improvised fire support solutions to unanticipated circumstances. Ultimately, the JSOTF relied on the SOLE for deconfliction and integration.[20] Though resilient, repeated SOF dependence on ad hoc fires solutions and surrogate coordination borders on dereliction. Crisis response in lieu of a sustainable concept of fires fails to evaluate all fire support options. The SOLE lacks the planning and coordination intimacy inherent to a resident JFFC. The SOLE's separation in both time and space from the JSOTF JOC further degrades mission effectiveness. The mandate for a JFFC is readily apparent.

Fallacy

The lack of a JFE by default leaves JSOTF fire support coordination to the air component via the JACE and SOLE. Inclusion of a JFE bifurcates responsibilities for planning and execution. Complicating matters further is the fact that doctrine limits targeting and IO responsibilities to the J35. Implications with respect to unity of effort are obvious. In the absence of a bona fide JFFC acting as an honest broker, the joint fires process inevitably focuses on airpower while inadvertently ignoring surface- and sea-based assets,[21] not to mention nonlethal means. A JFFC also bridges the doctrinal fissure by assuming responsibility for J35 fire planning tasks and following them through to execution.

As conceived, the JFE is an ad hoc organization largely formed from the existing table of organization. This burdens already overtasked staffs, often creating a void during deliberate planning.[22] The lack of a resident JFFC responsible for planning, coordinating, and executing the full spectrum of joint fires elements leaves the J3 and employed SOF vulnerable, having to improvise solutions to the integration challenges of fire support and maneuver. Though hasty innovation may be

USS *Sterett* launches Tomahawk Land Attack Missile during system test

U.S. Navy (Stephen J. Zeller)

JACE through the Joint Special Operations Air Component to the JAOC, aided by the SOLE. The JFACC is the airspace coordination authority and is responsible for the Air Tasking Order (ATO), which deconflicts airspace and avoids unnecessary redundancy in target attack.[25] This being the case, it seems valid that the air component should dominate those tasks required to synchronize joint fires in support of the JSOTF. Additionally, the JFACC may simply be better equipped to integrate joint fires due to organic attack, intelligence, surveillance, and reconnaissance, and unmanned aerial systems capabilities.

By contrast, JSOTF operations are not air-centric; they typically center on a supported ground maneuver element. SOF requires the concept of fires to be nimble; however, the current requisition process is clumsy and burdensome. Further, one could argue the parochial air component view contributes to a misperception that fire support platforms other than air have limited capability and/or availability. The JFACC is a component commander and is certainly not beholden to the JSOTF commander. Higher responsibilities may preclude JAOC participation in JSOTF fires deliberation and planning. In addition, the SOLE lacks the proximity, capacity, and authority to control the joint fire situation throughout an operation and participate in the planning and coordination of future operations, often concurrent tasks. In sum, "the entity responsible for [joint] fires cannot be focused on only one aspect of the fires fight";[26] it leads to an overemphasis of prosecution by air.

Improvements

A study prepared by the Joint Warfighting Center (JWFC) examined the viability of a JFFC concept from the viewpoint of the JFC. It clearly identified the fact that the J3 and JFACC worked independently to plan, coordinate, deconflict, and synchronize targeting. Although both worked toward common objectives, they lacked unity of effort. The 1997 study also documented the resulting disconnect between air operations and all elements of joint fires. The study acknowledged the J3 as the focal point for synchronization of joint fires but recognized that in practice, the JFACC retains the bulk of effort for joint fires execution planning through the development of the ATO. Further, it suggested, "the JFACC has some limitations regarding control of all

effective for some crisis action, it is reactive and generally contributes to a greater loss of initiative, not unlike *Black Hawk Down*. In contrast, effective joint fire support coordination is proactive where integration is thorough and derived from the inclusion of all component fires elements available. JSOTFs have long "recognized need for resident expertise with their HQ to coordinate and integrate fire

of the myriad joint fires platforms available. The JFFC also offers a sobering perspective when a concept of fires is inadequate.

Counterargument

Aviation proponents seek to employ air assets in a centralized manner to maximize their effect. Indisputably, "close air support accounts for the vast majority of fire

the entity responsible for [joint] fires cannot be focused on only one aspect of the fires fight

support."[23]

Moreover, the absence of a JFFC to formally advise the commander on fire support matters arguably contributes to the willingness to go it alone, a tragic flaw seemingly all too common among SOF. A JFFC ensures implementation of fire support plans cognizant of the JSOTF's inherent lack of organic fires capabilities. The JFFC creates operational depth through the procurement and inclusion

support assets provided to Special Forces."[24] Advocates attribute this to required coverage distances and the limited availability of capable fire support platforms for JSOA such as in Afghanistan or Iraq. With the preponderance of air assets categorized in terms of fires, relinquishing control of the coordination process constrains greater employment of these assets. Ultimately, requests for air support flow from the JSOTF via the

joint fires resources and awareness of special operations and nonlethal strategies, thus an opportunity may exist to not consider all joint fires aspects during development of the air plan."[27] The study concluded that the targeting process has become an air-driven event, with little consideration for the employment of other platforms—a finding of extreme consequence for end users such as the JSOTF, feeding the fallacy that assets are simply unavailable.

The JWFC study recommended, "The JFC needed a JFFC to be the impartial arbiter for joint fires, manage scarce resources, ensure the commander's guidance is being followed and intent accomplished, maintain a focus on what to preserve or destroy, deconflict lethal and nonlethal fires, champion JFC fires needs, and help the JFC maintain situational awareness."[28] A JFFC offers further value added by assisting the J3 and JFC in synchronizing joint fires with other aspects of the campaign to include maneuver, communications, IO, and logistics. These findings for the greater joint force structure multiply for the JSOTF given the additional nodes of coordination imposed by the air component above.

To improve the successful integration, synchronization, and application of fires for the JSOTF, a JFFC must be institutionalized as a permanent part of the HQ staff serving as a senior subordinate to the J3 with authorities delegated by the commander. A JFFC, being the single entity that centralizes communications and personnel for the coordination of all FSEs, obviates air component awareness and control issues. At a minimum, an FSE comprised of a junior fire support officer, air officer, naval surface fires officer, and IO officer would support the JFFC, thereby covering the totality of joint fires capabilities. The FSE remains scalable to meet the scope and needs of the JSOTF. The Service components, having requisite expertise, would source the various personnel.

The JFFC serves as the principal staff advisor to the J3 and JSOTF commander responsible for the coordination, integration, and synchronization of joint fires.[29] Over the phases of an operation, the JFFC, aided by the FSE, formulates and disseminates the concept of fires. They constantly monitor and control the joint fires situation throughout the operation. A key JFFC responsibility is overseeing the joint targeting coordination board and balancing the component desires concerning attack and interdiction. The JFACC would

continue to control general air operations and oversee the coordination and execution of ensuing air attack means in support of the approved fires plan.

Changes

To date, the JWFC study recommendation for the implementation of a JFFC has only been embraced as optional. Doctrine must capture the preceding improvements with revisions to Joint Publications 3–09, *Doctrine for Joint Fire Support*, and 3–05.1, *Joint Special Operations Task Force Operations*. However, joint doctrine in and of itself may not be enough, especially if said doctrine is only viewed as *guidance*. A mandate for the JFFC at the JSOTF may require a Department of Defense directive to enforce what is ultimately a change in special operations culture, particularly for the air component. JSOTF tables of organization and joint manning documents also require changes to reflect this staff enhancement. It follows that these changes must become manifest in training. It is essential that the JSOTF via the JFFC incorporate joint fire support training at the tactical and operational levels to maximize exposure and integration through education, exercises, rehearsals, and the like. Lastly, it is incumbent on U.S. Special Operations Command and/or theater special operations commands to demand qualified individuals/augmentees when staffing JSOTFs; an insouciant approach to filling JFFC billets invites the specter of failure into the joint fire planning process.

Implementation of a JFFC within the J3 will improve the successful integration, synchronization, and control of joint fires in support of the JSOTF. The mandate for a JFFC is clearly supported given the JSOTF's lack of operational depth and resulting dependence on nonorganic fire support platforms. The JFFC provides an unbiased expert perspective that avoids the myopic shortcomings of fire planning dependent on the air component for coordination. Principal advice and well-conceived concepts of fires will preclude the JSOTF commander from having to go it alone and rely on ad hoc solutions for fire support. Institutionalization of the JFFC as the subject matter expert having the delegated authority and responsibility for planning, coordination, and execution is the required next step toward improving joint fires for special operations. **JFQ**

NOTES

[1] Joint Publication (JP) 3–09, *Joint Fire Support* (Washington, DC: Joint Chiefs of Staff, 2010), 1–2.

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[3] JP 3–05.1, *Joint Special Operations Task Force Operations* (Washington, DC: Joint Chiefs of Staff, 2007), xi.

[4] Eric Braganca, "The Evolution of Special Operations Joint Fires," *Joint Force Quarterly* 35 (2004), 67.

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[12] Thomas K. Adams, *U.S. Special Forces in Action* (New York: Frank Cass Publishers, 1998), 234.

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[25] Granger, 11.
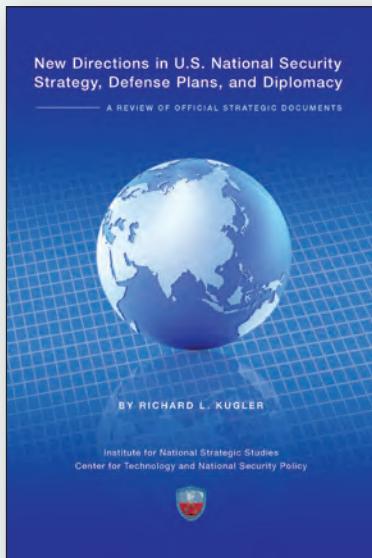
[26] Parker, 11.

[27] *Joint Forces Fires Coordinator Study* (Fort Monroe, VA: Joint Warfighting Center, 1997), EX–7.

[28] Ibid., EX–4.

[29] Ibid., V–1.
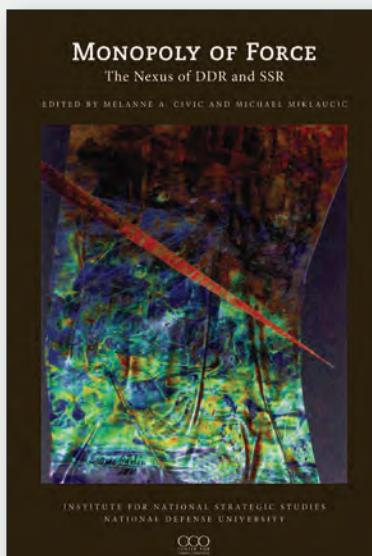
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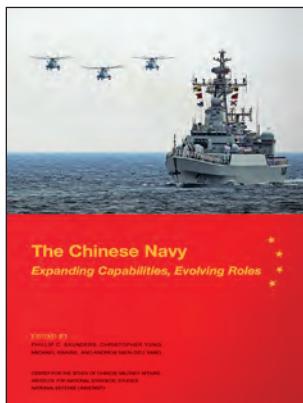
Center for Complex Operations
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edited by Melanne A. Civic and Michael Miklaucic

Disarmament, Demobilization, and Reintegration (DDR) and Security Sector Reform (SSR) have emerged in recent years as promising but poorly understood mechanisms for consolidating security and reasserting state sovereignty after conflict. Despite the considerable experience acquired by the international community, the critical relationship between DDR and SSR, and the ability to use these mechanisms with consistent success, remain less than optimally developed. The chapters in this book represent a diversity of field experience and research in DDR and SSR, which suggest that these are complex and interrelated systems with underlying political attributes. The book concludes that successful application of DDR and SSR requires the setting aside of preconceived assumptions or formulas, and should be viewed flexibly to restore the monopoly of force to the state.

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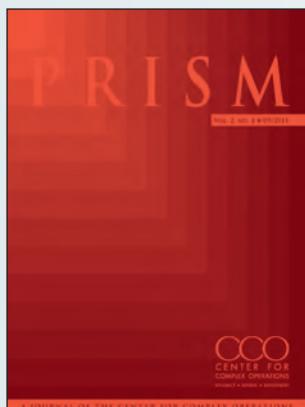
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The Chinese Navy: Expanding Capabilities, Evolving Roles

edited by Phillip C. Saunders, Christopher Yung, Michael Swaine, and Andrew Nien-Dzu Yang

The People's Liberation Army Navy (PLAN) has moved to the forefront of Chinese military modernization, aided by increased budgets and improved shipbuilding capabilities. The deployments of PLAN ships to the Gulf of Aden, the PLAN's global circumnavigation, and the increased frequency of exercises with foreign navies highlight the PLAN's growing role as an instrument of national policy. Given these trends, the Institute for National Strategic Studies joined other research organizations in Taipei to discuss the Chinese navy in their 19th annual conference on the PLA. The conference brought together many leading specialists on naval issues to discuss a range of topics related to the PLAN. This volume collects the best papers, most of which have been updated to reflect postconference developments. Topics include the history of other rising major powers in relation to their maritime capabilities, the range of China's naval modernization, the specifics of PLAN force capabilities, and how the PLAN might use its improved capabilities. As this volume indicates, Chinese naval power continues to develop, expand, and mature despite shortfalls in operational effectiveness. Given regional suspicions about China's long-term ambitions, the ultimate impact of a stronger PLAN on stability will depend on whether Chinese leaders direct their newfound naval power toward cooperative or coercive ends.

PRISM

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PRISM 2, no. 4 (September 2011) offers the following Feature articles: Joseph L'Etoile on transforming the conflict in Afghanistan; Paul Collier on job creation and investment promotion aspects of state-building; Leon Fuerth on "anticipatory governance"; Carlos Ospina Ovalle with an update on the insurgency in Colombia; Montgomery McFate and Steve Fondacaro on the human terrain system; Kimberly Marten on patronage versus professionalism in new security institutions; Laura Varhola and Christopher Varhola on regional engagement in Africa; and Michael Aaronson, Sverre Diessen, Yves de Kermabon, Mary Beth Long, and Michael Miklaucic on NATO countering the hybrid threat. In From the Field, Nadeem Ahmed presents a case study of the 2009 Malakand operation in Afghanistan. Lessons Learned presents an article by Michael Fischerkeller on the debate over the effectiveness of the Commander's Emergency Response Program, followed by an interview with former Chairman of the Joint Chiefs of Staff General Richard Myers. Closing out this issue, John Coffey reviews Joseph Nye's *The Future of Power* (PublicAffairs, 2011).

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