

## Information as a Joint Function

The USCENTCOM  
By-With-Through Approach

Security, Climate Change,  
and Urbanization



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Cover 2 images (top to bottom): In January 2017, General Colin Powell, USA (Ret.), addressed students at National Defense University in Washington, DC; met with staff of *Joint Force Quarterly*, from left, John J. Church, Andrea L. Connell, Joanna E. Seich, Jeffrey D. Smotherman, and William T. Eliason; and signed copies of his book *It Worked for Me* (NDU/Katie Lewis); Sailors ready flight deck after aircraft launch aboard USS *Theodore Roosevelt*, Arabian Gulf, February 2018 (U.S. Navy/Andrew Langhoff); DLIFLC hosted its 31<sup>st</sup> Language Day and honored 54 combat veterans of Vietnam War, Presidio of Monterey, California, May 2015 (U.S. Army/Steven Shepard)

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General Dunford works aboard C-130 aircraft at Bagram Airfield before visit to Task Force—Southwest at Camp Shorab, Helmand Province, March 22, 2018 (DOD/Dominique A. Pineiro)



# The Character of War and Strategic Landscape Have Changed

Over the past two decades, the strategic landscape has changed dramatically. While the fundamental nature of war has not changed, the pace of change and modern technology, coupled with shifts in the nature of geopolitical competition, have altered the character of war in the 21<sup>st</sup> century.

Advancements in space, information systems, cyberspace, electronic warfare, and missile technology have accelerated the speed and complexity of war. As a result, decision space has collapsed, and we can assume that any future conflict will involve all domains and cut across multiple geographic regions.

Today's strategic landscape is also extraordinarily volatile, and the Nation faces threats from an array of state and non-state actors. Revisionist powers such as China and Russia seek to undermine the

credibility of our alliances and limit our ability to project power. North Korea's efforts to develop a nuclear-capable, intercontinental ballistic missile now threaten the homeland and our allies in the Pacific. Iran routinely destabilizes its neighbors and threatens freedom of navigation while modernizing its maritime, missile, space, and cyber capabilities. Violent extremist organizations (VEOs), such as the so-called Islamic State (IS) and al Qaeda, remain a transregional threat to the homeland, our allies, and our way of life. These realities are why some have called today's operating environment the most challenging since World War II.

At the same time, the U.S. military's long-held competitive advantage has eroded. Our decisive victory in Operation *Desert Storm* was a wake-up call for our enemies; they observed that

our operational source of strength is the ability to project power where and when needed to advance U.S. interests and meet alliance commitments. This spurred dramatic tactical, operational, and strategic adaptations and accelerated modernization programs to asymmetrically counter our ability to project power. All the while, budget instability and the challenges of a decades-long campaign against violent extremism adversely affected our own modernization and capability development efforts required to preserve—or in some cases restore—our competitive advantage.

Additionally, the Joint Force lacks sufficient capacity to meet combatant command requirements. Over the past 16 years, we made a conscious choice to limit the size of the force to preserve scarce resources necessary for essential investments in immediate upgrades to critical capabilities. And requirements have not abated, as we assumed they would after major combat operations in Iraq and Afghanistan ended. As a result, global demand for forces continues to exceed the inventory.

Finally, as a nation that thinks and acts globally, the United States cannot choose between a force that can address IS and other VEOs and one that can deter and defeat state actors with a full range of capabilities. We require a balanced force that can address the challenges outlined in the recently published National Defense Strategy and has the inherent flexibility to respond to the unexpected.

## We Must Adapt to Maintain a Competitive Advantage

Advances in technology and the changing character of war require that our plans address all-domain, transregional challenges and conflict. In the past, we assumed most crises could be contained to one region. That assumption, in turn, drove regionally focused planning and decisionmaking processes. Today, this assumption no longer holds true. Our planning must adapt to provide a global perspective that views challenges holistically and enables execution of military campaigns with a flexibility and speed that outpaces our adversaries.

We must also be prepared to make decisions at the speed of relevance. While the cost of failure at the outset of conflict has always been high, in past conflicts there were opportunities to absorb costs and recover if something went wrong. Today, that cannot be assumed, and our strategic decisionmaking processes must adapt to keep pace. Senior leaders require routine access to synthesized information and intelligence to ensure their ability to see the fight in real time and seize initiative.

We must manage the force in a manner that allows us to meet day-to-day requirements, while maintaining readiness and the flexibility to respond to major contingencies and the unexpected. To ensure that the Joint Force provides viable options and is in position to execute when called on, our force posture must be optimized to strategic priorities and provide strength, agility, and resilience across regions and domains.

To arrest and, in time, reverse the erosion of our competitive advantage, our force development and design processes must deliver a Joint Force capable of competing and winning against any potential adversary. This future force must remain competitive in all domains, deny adversaries' ability to counter our strengths asymmetrically, and retain the ability to project power at a time and place of our choosing.

Finally, we must further develop leaders capable of thriving at the speed of war—leaders who can adapt to change, drive innovation, and thrive in uncertain, chaotic conditions. The nature of war has not changed, and, in a violent clash of wills, it is the human dimension that ultimately determines the success of any campaign.

## The How of Global Integration

To address these imperatives, we are adapting our approach to planning, decisionmaking, force management, and force design. These processes are interdependent and mutually reinforcing—intended to drive the changes required to maintain our competitive advantage. Over the past 2 years, we have made progress in each of these areas, but more work remains.

The National Defense Strategy establishes clear priorities for the Department of Defense, and the National Military Strategy is nested within to provide a global framework for the Joint Force to operate across regions, domains, and functions. We reoriented the Joint Strategic Capabilities Plan to operationalize the strategy and developed Global Campaign Plans to provide a framework for planning an all-domain, transregional approach to the challenges outlined in the National Defense Strategy. These plans are designed to bring coherence to operations of all functional and geographic combatant commands.

The Joint Force is also improving how it frames decisions for the Secretary of Defense in an all-domain, transregional fight. This begins by developing a common intelligence picture and a shared understanding of global force posture, which then serves as a baseline to test operational plans and concepts through realistic and demanding exercises and wargames. By testing our assumptions and concepts, exercises and wargames provide senior leaders with the “reps-and-sets” necessary to build the implicit communication required to facilitate rapid decisionmaking in times of crisis.

Our force management processes are evolving to support the objectives laid out in the National Defense Strategy. Setting the globe begins by allocating resources against strategic priorities—optimizing the way we posture capabilities globally to support our strategy, provide strategic flexibility, and ensure our ability to respond rapidly to the unexpected. Once the globe is set, we are applying the concept of Dynamic Force Employment to provide proactive and scalable options for priority missions while maintaining readiness to respond to contingencies. In a global environment that demands strategic flexibility and freedom of action, these adaptations enable the Joint Force to seize the initiative rather than react when faced with multiple challenges.

To ensure our competitive advantage, we are implementing a process for force design that provides the Secretary with integrated solutions to drive the development of a more lethal force. This process

begins by assessing our ability to execute the strategy and compares our capabilities and capacities vis-à-vis our adversaries. Assessment findings shape the development of comprehensive materiel and nonmateriel recommendations that inform the Secretary’s priorities for investment, concept development, experimentation, and innovation. This approach is designed to provide integrated solutions, across the Services, which ensure competitive advantage today and tomorrow.

Finally, we are reinvigorating strategic assessments to support all these efforts. Assessments provide the analytic rigor to inform our ability both to meet the current strategy and to develop a future force that maintains our competitive advantage. A cornerstone of this process is the Chairman’s Risk Assessment, which evaluates our current ability to execute the National Military Strategy and provides a global perspective of risk across the Joint Force. And, in 2016, we published the Joint Military Net Assessment for the first time in 20 years—benchmarking the Joint Force against near-peer adversaries today and comparing our trajectory over the next 5 years. These assessments are essential to provide an analytic baseline for everything we do—from planning to force management and from exercise development to force design.

There is no preordained right to victory on the battlefield, and today the United States faces an extraordinarily complex and dynamic security environment. To keep pace with the changing character of war, we must globally integrate the way we plan, employ the force, and design the force of the future. If we fail to adapt, the Joint Force will lose the ability to compete. *JFQ*

**GENERAL JOSEPH F. DUNFORD, JR.**  
Chairman of the Joint Chiefs of Staff





# Executive Summary

As I write, the new National Defense Strategy (NDS) has been released. The NDS is important for its core (and timeless) elements: build a more lethal joint force, strengthen allies and attract new partners, and reform the Department of Defense (DOD) for greater performance and affordability. It would be difficult to argue with this lineup; we have been reading reports for years about the combined impact of sequestration cuts to the force, the continuous combat and supporting operations in every command resulting in reduced readiness, as well as the seemingly endless multiplication of threats from the ground to space and cyberspace. But what kind of force does the United States need in order to meet its mission of protecting the Nation?

As we set our course on being the best in the world and maintaining that position for years to come, how do we preserve our working relationships with allies and partners? One of the growing keys to security that has been a bit rocky in recent years is our North Atlantic Treaty Organization (NATO) family. With conflict both actual and virtual on NATO's European northern and southern flanks, how do we simultaneously field a more modern force and bring our alliance partners up to our standards? This has been a constant question since NATO was formed, but I believe this issue has never been more critical.

Moreover, what about the ongoing issue of readiness needs versus force modernization? We are embarking on an important set of new and replacement weapons systems including more than

\$1 trillion to replace virtually all of our nuclear force structure. At the same time, we continue to buy new ships, fighters such as the F-35, and land systems. One wonders if a DOD budget of \$700 billion per year or more, while well above sequestration levels, will be sufficient to field and maintain this force.

As I mentioned at the end of my summary in the last *JFQ*, this edition brings a range of important articles from the Joint Staff and U.S. Central Command (USCENTCOM). In the Forum, we provide an introduction to information as the seventh and newest joint function. Information joins command and control, intelligence, fires, movement and maneuver, protection, and sustainment per direction of the Secretary of Defense. Alexus Grynkevich, deputy director for Global Operations (J39) on the Joint

Staff (and I am proud to say one of my former Joint Advanced Warfighting School students), provides us with a basic understanding of how information qualifies as a joint function. A key aspect of any joint function, as many joint professional military education graduates know, is how the function fits into operational art. Scott Thomson and Christopher Paul suggest that adding information as a joint function marks a paradigm shift for operational practitioners. For those in the joint force who will ultimately have to figure out the utility of information from a practical, pragmatic, and warfighting perspective, Gregory Radabaugh helps decode the doctrine inherent in a joint function. Along with this new function and its implications, the Chairman and the joint community have been working hard to better integrate the joint force. By planning and executing globally integrated exercises, Stephen Gallotta, Timothy Lynch, and James Covington argue the results will enhance command and control across the joint force.

Continuing our growing dialogue on the role of drones in modern warfare, Mark Newell discusses the difficulties of developing doctrine to counter these threats, given that Moore's Law is applicable to the explosion of such platforms globally. Along with drones, we are still engaged in countering threat networks of many different kinds, which David Doran believes have the joint force "outmatched."

We have a Special Feature dedicated to USCENTCOM in place of our JPME Today section. I met with General Joseph Votel, USA, at his headquarters to talk with him and his staff about their "by, with, through" (BWT) concept and about getting his views on a number of ongoing operations in that theater. He had just returned from Afghanistan where a major terrorist attack, claimed by the Taliban, had occurred in Kabul, killing 95 and wounding scores. General Votel noted this tragedy was important to acknowledge, but he stressed that progress is being made there, in part due to the focus on the BWT operational approach that he and his lead staff officer, Eero Keravuori, detail in their accompanying article. Adding a Service

perspective on the approach, Michael Garrett, William Dunbar, Bryan Hiltferty, and Robert Rodock describe how the U.S. Army intends to operate with it. As the lead U.S. tactical unit commander in the recent fight to retake Mosul in Iraq from the so-called Islamic State, J. Patrick Work tells us how by, with, and through made a difference in that victory. With the premise that great powers often get the ends and means of a strategy to assist host nations correct, John Richardson and John Bolton suggest the ways of carrying out such a strategy are often chosen poorly, resulting in failure to achieve success. They offer that recent successes in Iraq and Afghanistan are indications the United States is now getting this classic strategy element aligned correctly by applying the BWT approach. It is often said of military operations that logistics is key to success, and the BWT approach is no exception. Edward Dorman and Christopher Townsend lay out the case for achieving coalition logistics interoperability in a BWT operation.

Our Commentary section has a range of ideas from our friends on the Joint Staff and elsewhere, focusing on ideas of how to improve the joint force. After years of developing various approaches to helping partners with security needs, John Jakubowski believes the best way to permanently work these missions is through the establishment of a Joint Security Force Assistance Command. Next, Stephen Nowak offers us his thoughts on problem-solving. A team from J7, Gwendolyn DeFilippi, Stephen Nowak, and Bradford Baylor, has some interesting ideas on how best to use our lessons learned collection in order to develop the joint force.

This issue's Features section does not shy away from wrestling with controversial concepts, both old and new. Looking at the effects of climate and urbanization on security and stability challenges the joint force will face, Ronak Patel and David Polatty discuss how coordination between civilian and military authorities is key to finding workable solutions. Airpower is one of those commodities that everybody wants, but few can consistently agree on how it should be

delivered. Josh Wiitala and Alexander Wright suggest the issue is structural and have a few new ways to help land- and sea-based combat aviation work together. As we are beginning to see the contours of the power of big data in our lives, Paul Lester, Pedro Wolf, Christopher Nannini, Daniel Jensen, and Delores Davis team up to discuss how strategic leaders can best make use of it.

In Joint Doctrine, we have four important pieces from our friends at Joint Staff J7, both north and south, all focused on the future. Explaining the connections between joint concepts and future readiness, the deputy director for Future Joint Force Development, Andrew Loiselle, helps us to sort out the right balance between readiness and modernization. Jeffrey Becker and John DeFoor bring us insights on the world that the future joint force will operate in. Many recent JPME graduates will be familiar with the "Chairman's Challenges." Erik Schwarz helps us understand how the development of new joint concepts are being framed by them. George Katsos returns with another article on focusing on combatant commander campaign activities, this time discussing the challenges with environmental security. Along with our joint doctrine update, we bring you three fine book reviews by reviewers who will be instantly recognizable to most of our readers, and the books they discuss are as worthy of your attention as their reviews.

No matter how the future turns out, the United States and the joint force will continue to be central elements of how the world is shaped. Key to that success will be the people who are a part of that joint force, as they are what really matters when the hard problems come calling. Help them be ready. Write us when you think you have some ideas that will. *JFQ*

**WILLIAM T. ELIASON**  
Editor in Chief

Airmen from 116<sup>th</sup> Air Control Wing, Georgia Air National Guard, monitor surveillance data while flying night mission aboard E-8C Joint STARS, Robins Air Force Base, Georgia, July 2017 (U.S. Air National Guard/Roger Parsons/Portions of photo have been blurred for security and privacy concerns)



# Introducing Information as a Joint Function

By Alexus G. Grynkevich

In July 2017, the Chairman of the Joint Chiefs of Staff issued a change to Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States*, introducing information as a new and seventh joint function. This issuance portends significant changes in how the joint force will plan and execute transregional, multidomain, and multifunctional operations. As such, it represents an opportunity to

reimagine what “combined arms” means in 21<sup>st</sup>-century warfare.

While the underlying nature of warfare remains constant, the character of modern warfare continues to evolve. The economic and social revolutions wrought by the industrial age rapidly changed how wars were fought and won in the 19<sup>th</sup> and 20<sup>th</sup> centuries. Leaders who grasped the implications of those changes developed the strategies and designed operations that led to success, while those who did not were doomed to failure. Today, in the midst of an information age that has similarly transformed economies and societies, we must likewise adapt our thinking

and deepen our understanding if we hope to succeed in 21<sup>st</sup>-century conflicts. A key part of this adaptation is to develop a joint force that proactively uses and employs information across a wide range of activities. The incorporation of information as a joint function is but the first step toward enhancing joint warfighting and developing a future joint force able to dominate in the conflicts of tomorrow.

Joint functions represent related capabilities and activities placed into basic groups to help commanders synchronize, integrate, and direct operations. The original six joint functions as described in JP 1 are command and control,

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intelligence, fires, movement and maneuver, protection, and sustainment. The newly released JP 1 adds information to this list, stating:

*The information function encompasses the management and application of information and its deliberate integration with other joint functions to influence relevant-actor perceptions, behavior, action or inaction, and support human and automated decision making. The information function helps commanders and staffs understand and leverage the pervasive nature of information, its military uses, and its application during all military operations. This function provides [joint force commanders] the ability to integrate the generation and preservation of friendly information while leveraging the inherent informational aspects of all military activities to achieve the commander's objectives and attain the end state.*

The elevation of information in joint doctrine—the first addition to the list in 20 years—underscores the Department of Defense (DOD) focus on how to adapt in order to most effectively use the military instrument of national power in a changing strategic environment. Although conflict, violence, and war endure, the methods through which political goals are pursued are evolving due to technological changes.<sup>1</sup> Technologies such as autonomy and new forms of human-machine teaming have resulted in new concepts of operation that include data-focused intelligence, surveillance and reconnaissance, increased speed of decision, and enhanced lethality. The race to develop, leverage, and master such technologies and concepts poses a critical challenge.<sup>2</sup>

The joint force is rising to the challenge. As just one example, an Office of the Secretary of Defense artificial intelligence initiative—Project Maven—is examining how to find meaning in vast amounts of data at the speed of warfare.<sup>3</sup> The Department has also implemented a DOD Cybersecurity Campaign, developing a framework that integrates defensive cyberspace and information operations across the force. Furthermore, a newly

completed electronic warfare strategy is driving a renewed focus on the use of emerging electromagnetic spectrum systems and technologies.

Ultimately, of course, war is a uniquely human endeavor. While technology presents opportunities and challenges by itself, it is the transformative effect of technology on human societies that has had the most fundamental impact on the character of war. The ability of individuals to access information, from anywhere and at any time, has broadened and accelerated human-to-human interaction across multiple levels (person to person, person to organization, person to government, government to government). Social media, in particular, enables the swift mobilization of people and resources around ideas and causes. Coupled with the inability of humans to fully control the informational detritus that results from (and reveals) patterns of life in the information age, these trends present an opportunity for those most skilled in applying informational power. As the accompanying vignettes illustrate, potential adversaries are already applying their skills to influence relevant actors.<sup>4</sup>

Within the changing environment, information may prove to be the pre-eminent commodity and decisive factor in military operations. As such, the Chairman's JP 1 issuance is a call to action for the joint force to move rapidly to build information into operational art and design in order to deliberately leverage the informational aspects of military activities.<sup>5</sup> We have not always done this right. As the Joint Staff's *Decade of War* study of operations in Iraq and Afghanistan (2001–2011) revealed, policies, conventions, cultural mindsets, and approaches to leveraging information have sometimes hampered prior efforts.<sup>6</sup> Facing this new environment and the threats it presents—including crises and contingencies that cut across combatant commands; across the domains of land, sea, air, space, and cyberspace; and across capabilities including conventional, special operations, and deterrence forces—we cannot afford to repeat past mistakes.

The elevation of information as a joint function represents an important first step toward enhancing warfighting across all domains and the information environment. The Joint Staff and Office of the Secretary of Defense are working together to build a game plan that will follow through on across the breadth and depth of doctrine, organization, training, materiel, leadership and education, personnel, and facilities. In the end, however, it will be the efforts of the Services, combatant commands, and individuals in the field that will truly make this happen. Each of those entities will bring forward different perspectives, approaches, and experiences that will enrich the entire joint force. Our desire is that this collection of articles in *Joint Force Quarterly* will start an intellectual dialogue that will drive the community to experiment, exercise, and learn. I personally encourage all readers to bring their best ideas forward in future articles. Only together can we ensure information as a joint function will reach its full potential. JFQ

## Notes

<sup>1</sup> *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: The Joint Staff, 2016).

<sup>2</sup> Ibid.

<sup>3</sup> Cheryl Pellerin, “Project Maven to Deploy Computer Algorithms to War Zone by Year’s End,” *Defense.gov*, July 21, 2017, available at <[www.defense.gov/News/Article/Article/1254719/project-maven-to-deploy-computer-algorithms-to-war-zone-by-years-end/](http://www.defense.gov/News/Article/Article/1254719/project-maven-to-deploy-computer-algorithms-to-war-zone-by-years-end/)>.

<sup>4</sup> Joint Publication 3-13, *Information Operations* (Washington, DC: The Joint Staff, June 2016, unpublished draft).

<sup>5</sup> *Joint Concept for Operating in the Information Environment* (Washington, DC: The Joint Staff, August 2017, unpublished draft). Also see U.S. Senate Armed Services Committee, Subcommittee on Cybersecurity, Testimony of Rand Waltzman, *The Weaponization of Information: The Need for Cognitive Security* (Santa Monica, CA: RAND, April 27, 2017), available at <[www.armed-services.senate.gov/imo/media/doc/Waltzman\\_04-27-17.pdf](http://www.armed-services.senate.gov/imo/media/doc/Waltzman_04-27-17.pdf)>.

<sup>6</sup> *Decade of War, Volume I: Enduring Lessons from the Past Decade of Operations—Mistakes and Failures in the Iraq and Afghanistan Wars, Strategic Themes and Recommendations* (Suffolk, VA: Joint Lessons Learned Division, June 15, 2012).



Information Systems Technicians monitor communication systems aboard USS *Theodore Roosevelt*, January 2018, Arabian Gulf (U.S. Navy/Alex Corona)

# Paradigm Change

## Operational Art and the Information Joint Function

By Scott K. Thomson and Christopher E. Paul

As Brigadier General Alexus Grynkevich, USAF, states in the preceding article, the Chairman of the Joint Chiefs of Staff approved information as the first addition to the joint functions since the other six were codified in doctrine over 20

years ago. General Joseph Dunford's approval of this function is a vital step on the pathway to achieve the endstate articulated in the 2016 Department of Defense (DOD) *Strategy for Operations in the Information Environment* (SOIE): "Through operations, actions, and activities in the IE [information environment], DOD has the ability to affect the decisionmaking and behavior of adversaries and designated others to gain advantage across the range of military operations." The strategy correctly

explains that "Effects in the physical and informational dimensions of the IE ultimately register an impact in the human cognitive dimension, making it the central object of operations in the IE."<sup>1</sup>

The need for this addition to the joint functions has become increasingly obvious to military leaders over time. It reveals itself in the difficulty of addressing gray zone challenges, which often displace the strategic utility of physical power; the survival of violent extremist organizations (VEOs) despite sustained physical punishment; and in the rapid proliferation of, and the U.S. military's reliance on, information technology. During a recent effort by the Joint Staff to update Joint Publication (JP) 3-13, *Information Operations*, leaders recognized that the joint force was already attempting to use information as a function and that the time to institutionalize information as a function was therefore overdue.

This change in capstone doctrine is by itself insufficient to solve contemporary

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challenges. Without supporting efforts and adequate resourcing, little will change. The real work of institutionalizing and operationalizing information is in stride throughout various DOD components. If implemented boldly and thoughtfully, the new function will cause military commanders, strategists, and planners to revisit and revise their understanding of military operations and operational art. The information function will serve as a vital accelerant for various developmental efforts, such as the *SOIE, Capstone Concept for Joint Operations, Joint Concept for Integrated Campaigning, Joint Concept for Operating in the Information Environment, and Joint Concept for Human Aspects of Military Operations*.<sup>2</sup>

Indeed, the recently released 2017 National Security Strategy (NSS) and 2018 National Defense Strategy both repeatedly highlight threats to U.S. national security stemming from adversarial use of information. Skillful leveraging of information power has enabled competitors and adversaries such as Russia, China, and VEOs to realize important gains in ways that our traditional views of war and warfare struggle to answer. The NSS is particularly direct in admonishing that "U.S. efforts to counter the exploitation of information by rivals have been tepid and fragmented. U.S. efforts have lacked a sustained focus and have been hampered by the lack of properly trained professionals."<sup>3</sup> These documents mandate that DOD, as part of a whole-of-government effort, take the use of information power seriously. The information joint function is an important accelerant that, if properly implemented, should strengthen the joint force's ability to achieve strategic aims across the range of military operations.

This article briefly answers a number of questions that this new joint function has prompted across the joint force. First, why must the joint force perform the information function? Second, how must we change our thinking about objectives and endstates? Third, how must we change our thinking about information? We conclude by acknowledging and responding to a number of common

arguments against information as a joint function, discussing the way ahead, and highlighting the benefits of the new function to commanders.

## The Joint Force and the Information Function

There are at least five reasons to elevate information in joint force operations. First, the world has changed. Over the past few decades, the IE has seen significant changes driven by evolving technology. The contemporary IE can be characterized not only by its unprecedented breadth, depth, and complexity, but also by its ubiquity, hyperconnectivity, and exponential growth. Second, our adversaries' use of information has changed. Adversaries seek and find asymmetrical advantage over the joint force in and through the IE, both allowing near-peer competitors to become much more near-peers and allowing those who we still unambiguously overmatch to gain advantage under certain circumstances.

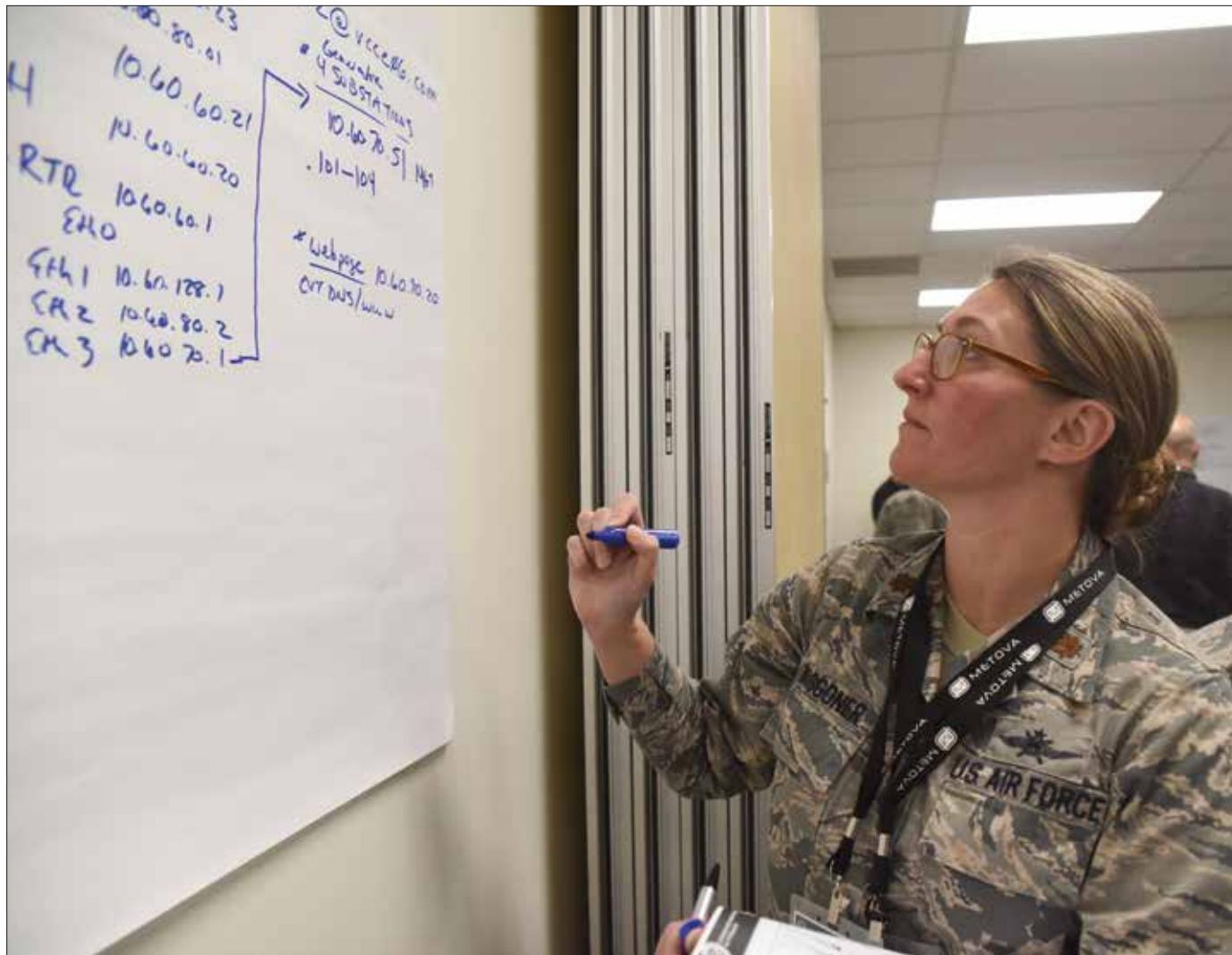
Third, the joint force is vulnerable to attacks in and through the IE—not only in our networks and technical communications, but also in our decisionmaking processes, perceptions, and will. Vulnerability to manipulation or degradation of will includes the will to fight and the political will of the American people, both of which are essential to the ability of the joint force to operate across the range of military operations. Fourth, we cannot *not* communicate, and actions speak louder than words. Every action and utterance of the joint force sends a message, intended or otherwise. This is part of the inherent informational aspects of all military activities. Furthermore, military actions are often much more powerful and influential communications than broadcast messages. If a picture is worth 1,000 words, then a Joint Direct Attack Munition is worth 10,000. Fifth, all outcomes and endstates of joint force operations hinge on the perceptions and decisions that lead to the actions and behaviors of relevant actors. Defeat of an adversary, by whatever mechanism, is a cognitive outcome. Very few battles or

engagements have concluded with the death or wounding of every combatant on one side or the other, but battles typically conclude with one side being defeated. Even the outcomes of operations without an adversary, such as humanitarian assistance and disaster relief, hinge on the perceptions, decisions, and resulting behaviors of the assisted civilian population. Perception, cognition, intention, and decision—these are the terrain of the information function.

## Changing Thinking about Objectives and Endstates

During the 1973 negotiations to end the Vietnam War, Colonel Harry Summers, USA, remarked to a Vietnamese officer that the United States never lost a battle in that war. The Vietnamese officer agreed, but retorted that while Summers's observation may have been true, it was "also irrelevant."<sup>4</sup> Indeed, Army Doctrine Publication (ADP) 1, *The Army*, acknowledges that "lethality, by itself, is not enough. If Army forces do not address the requirements of noncombatants in the joint operational area before, during, and after battle, then the tactical victories achieved by our firepower only lead to strategic failure and world condemnation."<sup>5</sup>

Both Colonel Summers's conversation and ADP 1 reveal a concern that many share about how the joint force understands planning and operations. Many DOD leaders focus primarily on lethality and battlefield dominance. However, strategic success—not tactical victory—is what leaders must emphasize. The Vietnam War vividly exposed a situation where physical power alone did not produce the desired results, and our recent experiences in Afghanistan and Iraq, where tactical victory has been common but strategic success elusive, echo that point. The relevance of lethality is further diminished in the contemporary operating environment where our adversaries can displace the utility of physical might by operating below the threshold of war (gray zone operations) or operate in loosely networked organizations that easily reorganize and are therefore immune



Airman analyzes coding necessary to maintain operational capabilities for power grid of simulated city as part of Cyber Security Incident Response Training (U.S. Air National Guard/Kayla K. Edwards)

to systemic collapse when their members are killed or captured (VEOs).

To avoid losing wars where we have won all our battles and to gain the full benefit available from the information joint function, we must change how we think about objectives and endstates. The descriptive language of the new joint function calls us to influence relevant actor perceptions, behavior, and action or inaction in pursuit of the commander's objectives and endstate. To do this, commanders must specify objectives and endstates in terms of required behaviors and actions: identify the relevant actors (the troops in enemy formations and their commanders, surely, but likely also enemy national leadership and supporting civilian constituencies) and

identify the actions necessary to enable shorter term objectives (inaction, orienting in the wrong direction, retreat, movement to a vulnerable position, waste of force or resources, civilian protest) as well as those necessary to the endstate (demobilization, withdrawal, cessation of force generation, abdication of leadership, entering settlement negotiations, suspension of legitimacy). Specifying behavioral objectives and endstates further enables mission command and mission tactics, as junior leaders can assess the likely impact of their choices on the actions and behaviors of the relevant actors and exercise initiative in the absence of specific guidance.

Changing the actions and behaviors of others is called "influence," and

influence must therefore become the lingua franca of operational art. By focusing on influence rather than simply "defeat" of an enemy (which is but one possible outcome of influence), we can avoid what Chief of Staff of the Army General Mark Milley has described as "the 'tacticization' of strategy."<sup>6</sup> If commanders express objectives and endstates in terms of actions and behaviors of relevant actors, the connections between tactical actions and strategic results become clearer.

We must emphasize that this approach is in no way intended to argue that the joint force does not require lethal overmatch. Such an argument would be counterproductive and foolish. Lethality can be incredibly influential and remains essential to national defense. Our

mandate is to better plan the influential effects of joint force activities to avoid unintended consequences and to better achieve strategic goals.

## Changing Thinking about Information

Realizing that the information joint function has vital technical implications in areas such as cyber and electromagnetic spectrum operations, it is the persuasive psychological aspects of information that remain frustratingly elusive to the joint force. We have identified the key terrain for implementing the information joint function as operational art—the way joint leaders plan, execute, and assess operations. While this realization is evolutionary in its origins, it is possibly *revolutionary* in its effect on military operations. The origin of calculus provides a useful illustration: rather than being the spontaneous discovery of profoundly new ideas, the invention of calculus was the result of incremental improvement over existing mathematical knowledge. Yet this incremental improvement had a profound effect on mathematical practice and application. General John Hyten, USAF, commander of U.S. Strategic Command, believes that the “military that figures out how to control information will be the most powerful military on the planet.”<sup>7</sup> General Hyten’s is but one among a chorus of senior leader voices expressing the joint force’s mandate to elevate the importance of information in plans, operations, and investments. Business as usual carries far too much risk to national security.

Most military leaders who hear “information” will instinctively equate the function with information operations (IO), but the two are not analogous. IO has been a joint capability for many years, but many continue to skeptically view it as a marginal military activity or as a failing enterprise.<sup>8</sup> If IO is marginal or failing, it is first a problem with the way leaders understand the importance and functioning of information, and second, a logical failure in doctrine.

Doctrinally, IO is simply a coordinating staff function that has no organic

capabilities. IO is intended to coordinate and deconflict the use of information-related capabilities (IRCs)—such as military information support operations (MISO), military deception, civil affairs, electronic warfare, and others—with each other and operations in general to achieve the joint force commander’s objectives.<sup>9</sup> Problems arise when we refer to information as an “operation,” separate from other operations. JP 1, *Doctrine for the Armed Forces of the United States*, defines *operations* as a “sequence of tactical actions with a common purpose or unifying theme.” Since the joint force generates information simply by operating, how can operations and IO remain logically separate?

Commanders and staffs frequently miss the inherent relation between physical capabilities and information—and misunderstand the largely intangible nature of information. Even if misunderstood, positive rhetoric from senior leaders illustrates their sincere appreciation for the importance of information. In practice, though, field-grade leaders who do the heavy lifting during planning frequently relegate IO to a segregated staff function. If the J6 can establish network operations, or the J4 can handle sustainment, both with minimal input from the J3, why can the J39 not similarly perform IO in a vacuum? On most staffs, IO remains a secondary effort that supports maneuver, is allocated minimal resourcing, holds minimal space in base orders, and is given little focus during operational updates to joint force commanders.<sup>10</sup>

This segregated application of IO typically focuses on the integration of a narrow subset of IRCs. The implicit thinking equates information with themes and messages, and assumes that the communication of themes and messages is something that happens separate from—and in a supporting role to—operations. However, all military activities have inherent informational aspects because they change the way adversaries, populations, and allies perceive and act on their environment. The use of information is ultimately about generating effects that achieve objectives, and as noted above, *you cannot not communicate.*

The way we (the joint force) view ourselves and think (Service cultures) overlays the use of operational art (planning and operating), and seems to produce a fairly predictable range of planning outcomes that inhibit our ability to competently leverage information. This unfortunately narrow range can prevent clear and creative thinking and critically impede achieving favorable strategic outcomes.

When the joint force uses physical power, it creates far more information (and potentially, influence) than any of the IRCs. The Air Force dropping a “MOAB” (GBU-43/B—the so-called mother of all bombs) in Afghanistan, the Navy maneuvering a carrier strike group off the coast of North Korea unannounced, or the Army or Marines conducting exercises in Europe near the Russian border all create large volumes of information—information that affects the perceptions, cognitions, intentions, and decisions of a range of relevant actors. The information function, once woven into operational art (and supported by important low-density expertise), stands to enable commanders to better anticipate the strategic effects of their actions.

Information is as vital tactically as it is strategically. Iraq and Afghanistan provide numerous examples of tactical operations working at odds with desired strategic outcomes because they did not contribute to the desired perceptions and behaviors of relevant actors. General Stanley A. McChrystal, USA (Ret.), observed that an “inability to understand our surroundings often left a burned-out building or a cratered road—a stark symbol of our shortcomings—and wasted precious time in the overall campaign. Waging such campaigns, *designed to persuade people to behave in a certain way* is complex.”<sup>11</sup>

It is imperative that we reorient our approach to operational art toward influencing relevant actor perceptions, behavior, action, or inaction in order to address this complexity. If we express objectives and endstates in terms of actions and behaviors desired of others, we will avoid many missteps and produce more predictable enduring strategic outcomes.

Information, along with the other joint functions, will support the pursuit of those outcomes.<sup>12</sup>

It remains unclear what the eventual fate of IO as a doctrinal construct will be. IO could remain in doctrine, or its purpose could simply be absorbed into the staff through other means. As DOD views on information power evolve, and as the Joint Staff works through the implementation of the information joint function, what is clear is that the elevated importance of information requires a new paradigm that far surpasses the traditionally limiting IO construct.<sup>13</sup>

The eventual fate of IO as a doctrinal or staff construct aside, a willingness to express commanders' objectives in terms of others' actions and behaviors and to bake informational considerations into base plans will not alleviate the need for information-related expertise. If anything, the new emphasis on the role of information increases the need for such expertise. As commanders and staffs seek to use all available military capabilities to influence the actions and behaviors of relevant actors, they will need to understand the predictable and common patterns in human behavior and the means by which information is collected, disseminated, and processed.

While all leaders will need to possess basic knowledge of the IE, information function, and IRCs, they will often also need the support of highly educated subject matter experts in order to realize the full potential of information. The fact remains that human behaviors are notoriously challenging to diagnose, understand, and change. Both the intelligence and IRC communities must possess the education and skills to assist the commander in the technical and psychological aspects of information as it relates to plans, operations, and assessment.

### Challenging the Strawman

When presenting an argument elevating the importance of information and behavior, routine objections surface:

- “This is not our job.”
- “This cannot be done.”

- “We already do this.”
- “This will cost the Services combat capability.”

***This Is Not Our Job.*** This assertion usually emerges when one mentions the word *influence*. But even conventional combat operations have a purpose larger than destruction. There, the purpose is to defeat the will of the enemy in traditional Clausewitzian terms. But “will” is incomplete by itself. It is *the will for somebody to do something*, and that means that any realization of will is actually some form of behavior. The will to resist or the will to fight are embodied in actions and behaviors. We only know we have broken an enemy’s will when it stops fighting or resisting, and it begins to engage in defeated behaviors, such as fleeing or surrender. If the behaviors of relevant actors define strategic success or failure, and objectives and endstates are specified in these terms (as they should be), then influence is the ultimate purpose of the joint force.

***This Cannot Be Done.*** Some critics deny the possibility of effectively specifying objectives and endstates in behavioral terms. Surely this is not how commanders and staffs habitually plan, but it is far from impossible. Planning toward behavioral outcomes is not only possible, but it is also routine for certain elements of the joint force. MISO already has an analytical process called target audience analysis, focused on understanding the behaviors of relevant actors, and which is used to plan and shape MISO efforts to influence (routinely including physical actions as well as communication).<sup>14</sup> Military deception, being behaviorally focused, is similar in nature. A rich body of literature reveals the effectiveness of applied behavioral planning approaches to policy implementation by governments around the world. Typically referred to as behavioral economics, these approaches rely on social and cognitive psychological research to dramatically improve policy outcomes defined by human behavior.<sup>15</sup> That the joint force has yet to adopt these methods makes them no less valid.

***We Already Do This.*** This statement usually refers to either operations

focused on a commander’s endstate or the relatively minor inclusion of information considerations in plans and operations. While planners inherently direct operations toward a commander’s desired endstate, the explicit behavioral component is typically absent. In those cases, planning toward behavioral outcomes that support strategy is implied rather than specified. Furthermore, the best routes to persuasion and influence are assumed rather than planned using valid behavioral analysis and informed by a knowledge of behavioral science. It is true that units “execute IO,” but, as stated earlier, IO is often a separate and supporting staff activity. To be effective, information must not only be understood as central to how objectives are stated, but also fully integrated with other capabilities (and functions) in pursuit of those objectives.

***This Will Cost the Services Combat Capability.*** There may be limited merit to this concern. For example, the Army does not have the MISO forces it needs to support long-term stability operations—something that became obvious during the heights of operations in Iraq and Afghanistan. Similarly, the Intelligence Community is simply not yet ready to support the information function, and this function will affect intelligence investments in all the Services and some defense agencies. However, two facts stand out. The first is that excellent tactics and physical capability are irrelevant if they do not achieve strategic aims. Physical destruction rarely defines strategic success. More often, strategic success is defined by collective social behaviors. Second, implementing the information function is not an argument for massive investment in influence capabilities. While new investments are necessary, the first and most effective approach is to better use the force at hand by improving the way the joint force employs its current assets. Information-related capabilities are less expensive than physical combat power capabilities. The Marine Corps is already reorganizing its information-related force structure into Marine Information Groups, showing a willingness to invest in new structure.



Airmen work with 179<sup>th</sup> Airlift Wing Communications Flight, presented with Air Force Lieutenant General Harold W. Grant award for best communication flight in Air National Guard, January 26, 2018, Mansfield, Ohio (U.S. Air National Guard/Joe Harwood)

It has even assigned a three-star deputy commandant for information. Service capability and capacity count, but ultimately, adopting the information joint function is about clearer thinking.

### The Way Ahead

Those involved in the efforts to implement the information joint function realize that they are trying to solve a strategically important, but inherently ambiguous, complex problem. The Joint Staff has already issued the change to JP 1 and is in the process of analyzing and implementing changes to down-trace doctrine such as JP 3-0, *Operations*, and JP 3-13, *Information Operations*. The decisive point for realizing the potential of information as a joint function will rest in improving two other pieces of doctrine, though. Sharpening JP 5-0, *Joint Planning*, specifically operational design and the joint

planning process, will largely define our ability to harness the power of information to enable strategic success. Simultaneously, we must improve the Joint Intelligence Preparation of the Operational Environment (JIPOE) process as contained in JP 2-01.3. Since JIPOE feeds course of mission analysis and course of action development, it must enable the staff to produce solid analysis of the drivers of human behavior so the commander understands how best to execute the information joint function. Vague statements in doctrine accomplish little. The Intelligence Community needs specific processes to assess the existing and likely behaviors of relevant actors. Perhaps making the MISO target audience analysis process an intelligence responsibility and integrating it as part of JIPOE would be a logical place to start. This could enable staffs to produce logics of behavior change that

inherently link tactical actions to strategic outcomes defined by relevant actor behavior.

Targeting and assessments are the final big pieces of the puzzle. Targeting must account for both a short- and long-term focus. Some concerns, such as countering propaganda or moderating crises to dampen negative effects, are immediate in nature. However, targeting must focus just as intently on long-term strategic objectives and account for the fact that enduring changes to human behavior are far more likely to take years than days. Therefore, we must consider modifying JP 3-60, *Targeting*, to support the information function. Evaluating campaign success remains an elusive problem to solve. A behavioral focus in plans and operations, enabled by the information function, may produce tangible progress toward this end.<sup>16</sup>

The way ahead for implementing the joint function is not purely doctrinal. The Office of the Secretary of Defense is revising policy to enable the joint force to better operate in and through the IE. Professional military education must thoroughly educate leaders at all levels—from initial entry through strategic-level education—on both technical and psychological aspects of information for both offensive and defensive operations. The Intelligence Community must devote resources to the analysis of social and individual behaviors as well as the technical aspects of the IE. The Services will need to make new investments to develop both human-focused and technically focused IRCs.

In April 2017, U.S. Army Special Operations Command (USASOC) hosted a senior leader forum composed of a large group of general officers and civilian equivalents to discuss expanding the way the Army views operations. The USASOC proposition is that schemes of maneuver should include cognitive objectives resulting in relevant actor behavior favorable to U.S. interests. Their commander, Lieutenant General Ken Tovo, challenged the group to begin to think differently. He lamented that while we do win the fights that we engage in, we still fail to achieve our campaign objectives. Furthermore, he stated, our planning systems too frequently tilt us toward battle when battle may not be the appropriate solution to our strategic problems. “The problem,” he continued, “is like IO, but it’s bigger.”<sup>17</sup> The solution he and other senior leaders seek is *informational*. Contemporary DOD organizational culture and planning systems are virtually blind to the proper importance, role, and function of information. Commanders, our educational institutions, and our training bases must move out absent enumerated guidance and pursue General Dunford’s intent when he signed the change to JP 1.

The potential benefit of information as a joint function to commanders is clear. Their staffs will be able to better support them by developing plans that do in fact link tactics and strategy.

Commanders will be able to measure campaign success by evaluating emergent behavior of relevant actors that defines strategic outcomes rather than focusing too intently on the physics of fighting. In 2009, then-General James Mattis stated that “capturing perceptions is the new ‘high ground’ in today’s conflicts, as the moral is to the materiel as three is to one.”<sup>18</sup> It is time to capture that ground.<sup>19</sup> JFQ

## Notes

<sup>1</sup> *Strategy for Operations in the Information Environment* (Washington, DC: Department of Defense, 2016), 2–3.

<sup>2</sup> Ibid.; *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: The Joint Staff, September 10, 2012), available at <[www.defenseinnovationmarketplace.mil/resources/JV2020\\_Capstone.pdf](http://www.defenseinnovationmarketplace.mil/resources/JV2020_Capstone.pdf)>; *Joint Concept for Integrated Training* (Washington, DC: The Joint Staff, February 1, 2017), available at <[www.arcic.army.mil/app\\_Documents/SLTF/Joint\\_Concept\\_for\\_Integrated\\_Campaigning\\_v0\\_25\\_14\\_Jan\\_2016.pdf](http://www.arcic.army.mil/app_Documents/SLTF/Joint_Concept_for_Integrated_Campaigning_v0_25_14_Jan_2016.pdf)>; *Joint Concept for Operating in the Information Environment* (Washington, DC: The Joint Staff, September 1, 2017, draft version 0.80); *Joint Concept for Human Aspects of Military Operations* (Washington, DC: The Joint Staff, October 19, 2016), available at <<http://nsiteam.com/social/wp-content/uploads/2017/01/20161019-Joint-Concept-for-Human-Aspects-of-Military-Operations-Signed-by-VCJCS.pdf>>.

<sup>3</sup> *National Security Strategy of the United States of America* (Washington, DC: The White House, 2017), 35.

<sup>4</sup> David Wood, “The Afghanistan War: Tactical Victories, Strategic Stalemate,” *The American Audacity*, February 14, 2011, available at <[https://theamericanaudacity.blogspot.com/2011/02/afghanistan-war-tactical-victories.html#\\_Toc308308308](https://theamericanaudacity.blogspot.com/2011/02/afghanistan-war-tactical-victories.html#_Toc308308308)>.

<sup>5</sup> Army Doctrine Publication 1, *The Army* (Washington, DC: Headquarters Department of the Army, September 2012), 1–7.

<sup>6</sup> Personal notes from small group discussion with General Mark A. Milley, USA, at Tufts University, Boston, November 10, 2017. In this discussion, General Milley lamented the need to develop higher level strategic thinkers on par with people like Henry Kissinger.

<sup>7</sup> Bill Gertz, “Stratcom Worried by Slow Pace of U.S. Nuclear Modernization,” *Washington Free Beacon*, July 31, 2017, available at <<http://freebeacon.com/national-security/stratcom-worried-slow-pace-u-s-nuclear-modernization/>>.

<sup>8</sup> Jerome Lynes, deputy director for Joint Education and Doctrine, Joint Staff J7, notes that “IO [information operations are], anecdotally, one of the most misused terms in the DOD Dictionary being used variously to mean the integration of the IRCs [information-related capabilities], public affairs, strategic communication themes, and talking points.” Email message to authors, August 24, 2017.

<sup>9</sup> Maneuver and fires, for example, as well as public affairs—an IRC that does not fall under IO.

<sup>10</sup> Isaac R. Porche III et al., *Redefining Information Warfare Boundaries for an Army in a Wireless World*, MG-1113-A (Santa Monica, CA: RAND, 2013), available at <[www.rand.org/pubs/monographs/MG1113.html](http://www.rand.org/pubs/monographs/MG1113.html)>.

<sup>11</sup> Stanley A. McChrystal, “Foreword,” in Andrew McKay and Steve Tatham, *Behavioural Conflict: Why Understanding People and Their Motivations Will Prove Decisive in Future Conflict* (Essex, United Kingdom: Military Studies Press, 2011), v. Emphasis added.

<sup>12</sup> The other joint functions are command and control, intelligence, fires, movement and maneuver, and protection. See Joint Publication 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: The Joint Staff, March 25, 2013, Incorporating Change 1, July 12, 2017), I-18–I-19.

<sup>13</sup> Mr. Lynes refers to this as a “seismic shift.” Email messages to authors, August 24, 2017.

<sup>14</sup> Special Text 33-01, *Military Information Support Operations Process* (Fort Bragg, NC: United States Army John F. Kennedy Special Warfare Center and School, 2014), 2-1–2-34.

<sup>15</sup> For example, see Alain Samson, ed., *The Behavioral Economics Guide 2017*, available at <[www.behavioraleconomics.com/the-behavioral-economics-guide-2017/](http://www.behavioraleconomics.com/the-behavioral-economics-guide-2017/)>.

<sup>16</sup> Christopher E. Paul et al., *Assessing and Evaluating Department of Defense Efforts to Inform, Influence, and Persuade: Handbook for Practitioners*, RR-809/2-OSD (Santa Monica, CA: RAND, 2014), available at <[www.rand.org/pubs/research\\_reports/RR809z2.html](http://www.rand.org/pubs/research_reports/RR809z2.html)>. While written toward information-related efforts, the methods in this study could easily apply to evaluating campaigns writ large.

<sup>17</sup> Conference discussion, Expanding Maneuver Senior Leader Forum, Tyson’s Corner, VA, April 5, 2017.

<sup>18</sup> James Mattis, “Launching NATO’s New Strategic Concept,” Brussels, July 7, 2009, available at <[www.nato.int/cps/en/natolive/opinions\\_56392.htm](http://www.nato.int/cps/en/natolive/opinions_56392.htm)>.

<sup>19</sup> On September 15, 2017, Secretary Mattis issued a memorandum to the Department of Defense endorsing the new joint function, and admonishing leaders across the Department to support efforts related to the function.



Soldier with 780<sup>th</sup> Military Intelligence Brigade sets up cyber tools overlooking mock city of Razish at National Training Center, Fort Irwin, California, May 5, 2017, as part of Army Cyber Command-led Cyber-Electromagnetic Activities Support to Corps and Below Initiative (U.S. Army Cyber Command/Bill Roche)

# The Practical Implications of Information as a Joint Function

By Gregory C. Radabaugh

The importance of understanding the informational aspect of the operating environment was underscored by the Chairman of the Joint Chiefs of Staff's addition of Information as a Joint Function (IJF) in a recent change to Joint Publication 1, *Doctrine for the Armed Forces of the United States*. This change comes

amid an erosion of the U.S. military's competitive advantage in a security environment marked by challenges from Russia, China, Iran, North Korea, and violent extremist organizations (VEOs). As the Chairman articulated in his 2016 posture statement, conflict with one—or a combination—of our adversaries will be transregional, multidomain, and multifunctional (TMM) in nature. This represents a marked shift from how past conflicts were fought and will put significant stress on the Department of Defense's (DOD's)

geographically based operational structure and associated command and control (C2) architecture. Future conflicts "will spread quickly across multiple combatant command geographic boundaries, functions, and domains. We must anticipate the need to respond to simultaneous challenges in the ground, air, space, cyberspace, and maritime domains."<sup>1</sup>

Among the many challenges affecting operations in and across all the domains are advances in information technology, which have significantly changed the

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Soldier with Expeditionary Cyber Electromagnetic Activities Team, 781<sup>st</sup> Military Intelligence Battalion, conducts cyberspace operations at National Training Center, Fort Irwin, California, May 9, 2018 (U.S. Army Cyber Command/Bill Roche)

generation, transmission, reception of, and reaction to information. As highlighted in the *Joint Concept for Operating in the Information Environment*, “these advances have increased the speed and range of information, diffused power over information, and shifted sociocultural norms. The interplay between these three provides our competitors and adversaries additional opportunities to offset the diminishing physical overmatch of the world’s preeminent warfighting force.”<sup>2</sup>

This three-way interplay affects each of the warfighting domains and their activities in the information environment (IE). For example, operations in the land domain will increasingly take place among, against (in the case of VEOs), and in defense of civilians. Civilians will be the information targets and the objectives to be won, as much as an opposing force.<sup>3</sup> Similarly, since deterring conflict also hinges ultimately on perceptions

and attitudes, the joint force will require an understanding of how relevant actors perceive and understand information. In all domains, every friendly action, written or spoken word, and displayed or relayed image has informational aspects that communicate a message or intent.<sup>4</sup> Commanders must also be alert that red actors will interpret blue activities through the lens of their personal world views, regardless of the intended message.

With JIF, commanders must now understand the centrality of dynamic integration of information with other joint functions (C2, fires, intelligence, movement and maneuver, protection, sustainment) in order to positively alter relevant actor perceptions and behaviors in a TMM security environment regarding national security objectives.

**Command and Control.** Information is integral to planning for and synchronizing operations involving disparate entities

(and their associated capabilities and processes); all require a collective understanding of the implications and character of the warfighting domains and IE. The Services are pursuing new ways of thinking and training and new technologies to collect and distribute data for situational awareness coupled with real-time reporting of the changing battlespace.<sup>5</sup> Mission command in the IE, for example, entails commanders giving subordinates the flexibility to adjust a theme, narrative, and message as the situation dictates.

**Fires.** Commanders will be more likely to consider the employment of *all* available weapons and other systems. The Marine Corps has recently established an Information Marine Expeditionary Force to build and sustain effective offensive cyber and electronic warfare operations and associated intelligence support. Fires and information also extend to the synchronization of information-related

activities such as military information support operations with hard assets like a GBU-43/B Massive Ordnance Air Blast (the so-called Mother of All Bombs) to blunt adversary uses of ideas, images, and violence designed to manipulate the United States and its allies.

**Intelligence.** Commanders can be expected to place increasing emphasis on the integration of intelligence disciplines and analytic methods to characterize, forecast, and assess the IE. Moreover, they will be more inclined to emphasize it early in the planning process due to the long lead time needed to establish information baseline characterizations and properly assess effects in the IE. A major challenge will be characterizing the informational battlespace in a way that enables commanders to visualize it in the same manner as the land, sea, air, space, and cyberspace battlespaces, enabling them to fully integrate informational and physical power.

**Movement and Maneuver.** This function includes moving or deploying forces into an operational area and maneuvering to achieve objectives. In developing plans ranging from freedom of navigation to those intended to prevent a crisis from worsening and allow for de-escalation (flexible deterrent options), IJF will provide a means for commanders to more tightly align the movement of forces with information activities to influence relevant actors. Every physical activity has an informational component.

**Protection.** The protection function in part includes conserving the joint force's fighting potential by making friendly forces difficult to locate and strike. Integration of protection and information—particularly regarding military deception and operations security (OPSEC)—will be critical to antiaccess/area-denial operations, where the joint force will have to maneuver undetected over strategic distances through multiple domains.

**Sustainment.** Sustainment is the provision of logistics and personnel services necessary to extend operational reach. Management of information and information systems is critical to sustainment and will be a significant target

of adversary attack. Thus, commanders must integrate OPSEC into sustainment planning as they do in planning other aspects of operations.

In addition to enhancing joint warfighting today, IJF in joint doctrine will play a significant role in three ways. First, while policy generally drives doctrine, on occasion a new application of an extant capability within doctrine may require the creation of policy. In the coming months, senior-level forums (for example, the Information Operations Executive Steering Group) comprised of policymakers, operators, and doctrine developers can be expected to work collaboratively to develop effective and integrated policy and doctrine for the joint force.

Second, joint doctrine provides the foundation for joint training and education. As such, curricula from precommissioning programs to general and flag officers continuing education programs will be revised to reflect the informational aspects of all military activities.

Finally, while not the explicit goal of IJF, its incorporation into joint doctrine opens the possibility for changing the way DOD programs and budgets for operations in the IE. Joint functions are generally aligned with Joint Capability Areas (JCA), which are collections of like-capabilities functionally grouped to support capability analysis and investment decisionmaking. JCAs are aligned with Functional Capability Boards, which assist the Chairman in accomplishing his statutory responsibilities of assessing risk and making programmatic recommendations. Now that information is a joint function, changes within the Planning, Programming, and Budgeting Execution process could follow, making needed investments for operations in the IE more visible (such as creating a separate Information JCA).

The integration of the IJF with the other six joint functions offers new opportunities for developing and conducting operational art and design. IJF will result in the development of executable plans to deal with future conflicts that are TMM in nature. Moreover, given the importance of joint doctrine to other

foundational aspects of combat power and the way in which DOD accomplishes programming and budgeting actions, IJF will serve to create a joint force of tomorrow more capable of and organized to leverage the inherent informational aspects of all military activities to achieve the commander's objectives and enduring strategic outcomes. The ultimate result will be that joint force commanders are able to dominate the informational aspect of their operating environment (the IE) the same way they dominate land, sea, air space, and cyberspace. *JFQ*

## Notes

<sup>1</sup> Posture Statement of General Joseph F. Dunford, Jr., before the Senate Armed Services Committee, March 17, 2016.

<sup>2</sup> *Joint Concept for Operating in the Information Environment* (Washington, DC: The Joint Staff, September 1, 2017, draft version 0.80).

<sup>3</sup> General Sir Rupert Smith described this construct as "war amongst the people." See Rupert Smith and Ilana Bet-El, "Military Capabilities for War Amongst the People," in *Adapting America's Security Paradigm and Security Agenda*, ed. Roy Godson et al. (Washington, DC: National Strategy Information Center, 2011).

<sup>4</sup> Joint Publication 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: The Joint Staff, March 25, 2013).

<sup>5</sup> David L. Goldstein, *Enhancing Multi-Domain Command and Control... Tying It All Together*, U.S. Air Force Focus Area (Washington, DC: Headquarters Department of the Air Force, 2017); and Mark A. Milley, *Multi-Domain Battle: Combined Arms for the 21<sup>st</sup> Century* (Washington, DC: Headquarters Department of the Army, February 2017).

Air Force pararescuemen assigned to 48<sup>th</sup> Rescue Squadron and French air commandos provide cover after moving simulated patient into Eurocopter EC-725 for aerial transport during personnel recovery scenario in southern Arizona, November 7, 2017, as part of Angel Thunder (U.S. Air Force/Andrew Lee)



# Globally Integrated Exercises

## Optimizing Joint Force C2 Structure

By Stephen M. Gallotta, James A. Covington, and Timothy B. Lynch

Increased complexity among emerging challenges in the strategic environment requires adjustments in how the United States prepares for future challenges.<sup>1</sup> Chairman of the Joint Chiefs of Staff (CJCS) General Joseph F. Dunford, Jr., recognizes not only the complexity of the environment, but also the challenges the joint force

faces responding to them.<sup>2</sup> A primary challenge, revealed in a brief examination of the joint force's history, is creating a clear approach toward global integration to enhance Department of Defense (DOD) strategic planning and execution. Taking on this challenge, the Chairman is creating a Globally Integrated Exercise (GIE) structure focusing

on combatant commander (CCDR) and higher authority integration. Despite a number of limitations, the CJCS GIE approach is the most proactive, effective, and innovative means to create the necessary planning and organizational changes to confront today's increasingly complex strategic environment.

### The Approach

Without the benefit of a definitive legislative mandate and lacking command authority, the Chairman is utilizing the GIE to drive the joint force toward understanding the requirements for

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global integration.<sup>3</sup> On January 12, 2017, General Dunford issued the 2017–2020 Joint Training Guidance (2017 JTG). CJCS Instruction 3500.1, *Joint Staff Joint Training Policy and Guidance*, transformed the emphasis in CJCS-sponsored joint force exercises. Unlike previous guidance focusing on exercising, and thereby developing functional capabilities (for example, cyber operations, targeting processes, fires, defeating antiaccess/area-denial networks, and interagency coordination), the 2017 JTG focuses on the “4+1” problem sets, cross-combatant command (CCMD) coordination, senior leader development, and global integration.<sup>4</sup> Furthermore, in the 2017 JTG, General Dunford uses his training authorities to align training requirements to his vision of strategic complexity, a vision characterized by the 4+1 problem set in a transregional, multidomain, and multifunctional (TMM) environment.

Establishing essential characteristics for exercises, the Chairman directs that joint training must

- reflect the strategic environment and its respective challenges
- emphasize global integration across the 4+1 problem set
- span the range of military operations
- enable the joint force to innovate.

These characteristics, and the eight associated required elements, introduce a new level of sophistication and challenge for CCDRs to fully integrate the strategic considerations of the real-world 4+1 problem set into their exercise programs.<sup>5</sup> Leading this effort, the 2017 JTG also directs that the

*Joint Staff will establish a training program designed to improve its ability to integrate global activities, resources, strategy, and risk management, and provide the best military advice. This program will involve a series of tabletop exercises, senior leader seminars, and wargames culminating in an annual event linked to a CCMD Tier 1 exercise that enables the Joint Staff to exercise internal strategic decisionmaking and global synchronization processes.<sup>6</sup>*

## Case Studies: JCS Evolution

The United States has a history of adapting the force to address emerging challenges. Two landmark pieces of legislation reveal the innovative, iterative, and effective transformation of the national security organization toward enhancing unity of command and unity of effort. The first case study, the National Security Act of 1947, enacted as a response to experiences of World War II and in anticipation of the challenges by the coming Cold War, laid the foundation for today’s national security framework, establishing DOD, with a Cabinet-level Secretary, Central Intelligence Agency, and Joint Chiefs of Staff, among other changes.

The second case study, the Goldwater-Nichols Department of Defense Reorganization Act of 1986, aimed at improving interoperability or unity of effort among the military Services. It mandated jointness in officer management and established a Joint Staff led by an officer who was the senior military officer, independent of any Service, and answered only to the President and Secretary. These transformative pieces of legislation demonstrate the continuing effort to streamline and improve force management, information use, and decisionmaking in the national security structure to better address security challenges.

### *National Security Act of 1947.*

Prior to 1941, the United States did not have a formal entity like the Joint Staff. The advent of World War II, however, brought change. Soon after Pearl Harbor, President Franklin Delano Roosevelt and Prime Minister Winston Churchill established the Combined Chiefs of Staff as the supreme military body for strategic direction of the Anglo-American war effort. To meet wartime demands, the United States informally established a JCS from the existing Service chiefs.<sup>7</sup>

The JCS quickly adapted and grew into a warfighting organization. Several committees, planning teams, and agencies, with the intent of tackling tough joint problem sets between Services and allies, developed almost immediately. Although the JCS held an unofficial role, it remained “directly responsible to

President Roosevelt.”<sup>8</sup> Still, the JCS was not a statutory body, and its members were still under the command of separate Cabinet officials.

With the impending threat of communist expansionism in the post-World War II strategic environment, President Harry S. Truman moved to streamline the national security system, pursuing what he called “unification.”<sup>9</sup> The resulting National Security Act of 1947 reshaped the U.S. national security framework and created some of the most important national defense institutions. It eliminated the Cabinet rank for the Service departments, making them subordinate to the Secretary of Defense. It also created the authority for and definition of combatant commands (called unified commands).

For the JCS, in particular, the act provided the “statutory standing, with a list of assigned duties, and it became a corporate advisory body to the President, the Secretary of Defense, and the National Security Council.”<sup>10</sup> Despite the act’s intent to provide unity of effort, it remained incomplete because it did not provide a single voice to represent the Services’ warfighters. The Service secretaries, although subordinate to the Secretary of Defense, remained the principal warfighters—building, training, and fighting their forces accordingly, and independently.

### *Goldwater-Nichols Act of 1986.*

Thirty-nine years after the 1947 National Security Act, Congress, again seeking to improve unity of effort, profoundly reshaped the national security structure. Goldwater-Nichols was a groundbreaking bill that significantly altered the organization and operation of DOD and its military components.<sup>11</sup> The impetus for Goldwater-Nichols was the recognition that inter-Service rivalries were creating command and control challenges for CCDRs and the Secretary. The system resulting from the 1947 act allowed counterproductive inter-Service rivalry to persist. These rivalries manifested themselves in myriad ways, and peacetime activities (such as procurement and creation of doctrine) were tailored for each Service in isolation. Similarly,

wartime activities of each Service were largely planned, executed, and evaluated independently. These practices resulted in division of effort, an inability to profit from economies of scale, and inhibited the development of modern warfare doctrine.<sup>12</sup> This contributed to significant underachievement of DOD capability and placed national security at risk. All the specific provisions of the bill were aimed at solving one problem: “the inability of the military Services to operate effectively together as a joint team.”<sup>13</sup>

The bill’s development, a result of almost 5 years of effort and analysis by Congress and the Pentagon, focused on improving interoperability among the Services at an operational level. The act made a number of significant structural changes to DOD, increasing the powers of the Chairman and the CCDRs, while removing the Service secretaries and chiefs from the operational chain of command. By requiring joint education and duty assignments, Goldwater-Nichols has, in the intervening years, created a force comprised of officers trained and experienced in joint operations. Ultimately, Goldwater-Nichols went beyond unity of effort to unity of command.

## The Challenge

Today, 30-plus years after the enactment of Goldwater-Nichols, there is a growing movement to reexamine the national security structure in light of the increasingly complex and different strategic environment.<sup>14</sup> Both Armed Services Committee chairmen, Senator John McCain (R-AZ) and Representative Mac Thornberry (R-TX), have voiced concerns about how well Goldwater-Nichols is performing.<sup>15</sup> In the Senate, the Armed Services Committee held hearings in mid-2016. It heard from a variety of commentators, gathering information about the current structure and improvements that could be made.<sup>16</sup> Comments ran the gamut of suggested reforms, from ending CCMDs and transforming DOD into three major commands (Global Strike, Defense, and Presence) to transforming CCMDs to threat-focused (rather than regionally focused) commands.<sup>17</sup> These

suggestions reflect an interest in transforming DOD structure from regionally based, with regional CCMDs, to threat-based. Other recommendations retain the regionally based structure but seek to create an apparatus to enhance globally integrated operations. What is needed, proponents argue, is “an organization that thinks and acts both globally and jointly”—but they differ on who should lead the organization, with recommendations running from the Chairman, Joint Staff J5, a civilian within DOD (such as the Under Secretary of Defense for Policy), to a new organization altogether.<sup>18</sup> All these ideas share one common characteristic: there is no precedent or experience to judge the potential to enhance global integration. What is needed then is a mechanism to evaluate how DOD would enhance globally integrated operations.

## Globally Integrated Exercises

That mechanism is GIE. To execute the Chairman’s direction in the 2017 JTG, the Director of Joint Force Development (J7) is developing the GIE program.<sup>19</sup> The program serves two functions: to assess and align Joint Staff processes as the global integrator and to “create opportunities for [senior leaders] to increase their understanding and experience for globally integrated operations and strengthen their ability to work effectively with the Joint Staff, CCMDs, Services, interagency, and Allies and partners, to address global integration/TMM threats.”<sup>20</sup> Ultimately, the intended endstate is to develop mechanisms to enable the Joint Force and Joint Staff/Office of the Secretary of Defense (OSD) to operate at the speed of war.

Because the GIE provides CCDRs and higher-level authorities the ability to exercise the joint force as a whole in time, space, and purpose while evaluating global risk, it addresses two major strategic-level concerns.<sup>21</sup> First, the inability of the joint force to execute as a whole undermines the Secretary and Chairman’s responsibility to provide the President and National Security Council

with the best military advice. Second, the strategic leadership’s capacity for timely military decisionmaking, which General Dunford argues is unable to “frame decisions and act in a timely manner,” must be improved by making some “fundamental changes . . . to our organizational construct.”<sup>22</sup>

The GIE structure envisions two types of exercises differentiated by the level of Joint Staff and joint force participation. Type 1 exercises “would involve Joint Staff developing events to rehearse DOD leaders against national strategic objectives with whole-of-government/whole-of-society focus.” In these exercises, Joint Staff and OSD leaders would be the “primary training audience with participation by all relevant combatant commands.”<sup>23</sup> Type 1 exercises would be Joint Staff led, with interagency senior-leader participation. Type 2 exercises are similar except that they will be CCDR led, with two or more CCMDs and the Joint Staff as the primary training audience, exercising a 4+1 challenge.<sup>24</sup>

In both constructs, the Joint Staff will be a primary training audience, and the scenarios, constructed from the real-world strategic and political environment, will involve the 4+1 challenges in a TMM environment. The lessons learned from these exercises will provide the Chairman with a body of evidence from which he can advise the Secretary about how best to execute globally integrated operations. By doing these events on no less than an annual basis, across the range of military operations and at different stages of the conflict continuum, the Chairman will establish the necessary conditions to experiment with different approaches toward achieving global integration. The current goal is for a Type 1 exercise, with all (or most) of the CCMDs, in fiscal year 2020.<sup>25</sup>

Lessons learned from the first GIE event that occurred in October 2017, where the Joint Staff and OSD participated in a U.S. Northern Command and U.S. Strategic Command exercise, demonstrated challenges in staff processes, structure, and tools, which are now being reviewed and addressed at the flag/general officer level.



Soldier assigned to 1<sup>st</sup> Battalion, 501<sup>st</sup> Aviation Regiment, transmits information via field radio during Exercise Combined Resolve VIII, at Hohenfels Training Area, Germany, June 8, 2017 (U.S. Army/Michael Bradley)

## Limitations

Working as limitations to the Chairman's approach is the existing process for exercises that are, first and foremost, a series of exercises by a single CCMD and focused on three things:

- exercising existing theater operation plans and operation plans in concept form
- CCMD staff processes
- component training objectives (which generally revolve around the warfight).

While these are not unworthy exercise objectives for the commands involved, this format routinely lacks the critical dialogue with a higher authority, or other interested same-tier actors. There are few exercises with multiple CCMDs involvement and even fewer with real-world strategic policymakers involved,

but the vast majority of CCMD exercises are limited to a single command and its components and, necessarily, provide no opportunity to conduct globally integrated operations.

The second limitation is capacity. A fully globally integrated exercise will require participants to step away from their assigned duties to engage in the exercise. These are busy people and organizations that do not have the bandwidth to perform their normal duties on top of participating in time-consuming exercises. This challenge will, inevitably, limit the scope and tempo of the program. The ideal, and the goal, is an annual global exercise involving all, or most of, the CCMDs, exercising a 4+1 crisis scenario along with senior interagency partners and allies.

A third, perhaps more fundamental, limitation is the role of the Joint Staff in

the chain of command. Under law, the Chairman is responsible for "formulating policies and technical standards, and executing actions, for the joint training of the Armed Forces."<sup>26</sup> This is broad authority within the sphere of joint training and includes the requirements set forth in the 2017 JTG. Regarding global integration, the law provides, in

*matters relating to global military strategic and operational integration—[the Chairman is responsible for] (A) providing advice to the President and the Secretary on ongoing military operations; and (B) advising the Secretary on the allocation and transfer of forces among geographic and functional combatant commands, as necessary, to address transregional, multi-domain, and multi-functional threats.<sup>27</sup>*



Amphibious assault exercise during Cobra Gold 2018, at Hat Yao, Thailand, February 16, 2018 (U.S. Marine Corps/Olivia G. Ortiz)

The Chairman, then, has a critical role regarding the deployment of forces to achieve global integration, but is not the decisionmaker. Indeed, as General Dunford frequently points out, there is only one “global integrator” within DOD, the Secretary of Defense.<sup>28</sup>

### Recommendation

The limitations in the GIE construct should not dissuade its utilization. Like any new concept, it requires the necessary time, space, and iterations to meet the Chairman’s intent. As noted, there is no shortage of recommendations for tackling the globally integrated operations challenges. The risk to these potential recommendations, while likely well informed, is that they remain untested. Placed into a military planning context, choosing one of these potential recommendations is similar to pursuing a course of action without analyzing it.

Any potential changes to optimize the joint force structure, or roles and

responsibilities, is not advisable without first testing them in a globally integrated exercise. Because the GIE introduces real-world strategic and operational challenges in an exercise environment, the lessons learned not only will uncover how CCDRs work best with one another, but also, through several iterations, create a shared understanding, as well as developing the processes, structures, and tools necessary to achieve global integration. Using the strategic exercises to develop methodologies to accommodate the requirement for globally integrated planning and operations creates an opportunity to help steer the joint force through this transition.

The Chairman’s GIE approach is the most deliberate, effective, and innovative means to drive the necessary planning and organizational joint force changes to confront today’s increasingly complex challenges. Although limitations exist in the current construct, it remains the ideal leadership laboratory to foster the

growth and innovation required to create and examine the necessary connective tissue across combatant commands, the interagency community, and with the Office of the Secretary of Defense. As the GIE series develops under CJCS stewardship, it will require buy-in, patience, and dedicated participation from the Joint Staff and combatant commanders to reorient the joint force. The timeline, with exercises programmed over the upcoming years, is aggressive but necessary to demonstrate to Congress that another reorganizational piece of legislation is not required or that a best solution has been exercised and found effective. JFQ

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### Notes

<sup>1</sup> Valerie Strauss, “The Difference Between ‘Complex’ and ‘Complicated’—and Why It Matters in School Reform,” *Washington Post*, August 8, 2014, available at <[www.washingtonpost.com/news/answer-sheet/wp/2014/08/08/the-difference-between-complex-and-complicated-and-why-it-matters-in-school-reform/](http://www.washingtonpost.com/news/answer-sheet/wp/2014/08/08/the-difference-between-complex-and-complicated-and-why-it-matters-in-school-reform/)>.

complex-and-complicated-and-why-it-matters-in-school-reform/?utm\_term=.fba311ad182e>.

<sup>2</sup> Chairman of the Joint Chiefs of Staff Notice (CJCSN) 3500.01, 2017–2020 Chairman’s Joint Training Guidance (Washington, DC: The Joint Staff, January 12, 2017), 1. General Dunford’s vision of this complexity is reflected in his view that future conflicts will be “increasingly transregional, multidomain, and multifunctional [TMM] as potential adversaries’ interests, influence, capabilities, and reach extend beyond single geographic areas and domains.”

<sup>3</sup> Joint Staff J7, Joint Force Development, *Globally Integrated Exercise Framework*, information paper, August 23, 2017. *Global integration* is defined as the “arrangement of cohesive joint force actions in time, space, and purpose, executed as a whole to address transregional, multidomain, and multifunctional challenges.” See also CJCSN 3500.01, 2–3.

<sup>4</sup> CJCSN 3500.01, 2. To confront the current challenges in the strategic environment, the Chairman reoriented joint force planning priorities through the adoption of the “4+1” problem-set paradigm, around which military planning for the four primary countries of concern—Iran, North Korea, Russia, and China—and the “+1” violent extremist organizations is focused. The 2018 National Defense Strategy prioritizes “long-term competition with China and Russia,” while deterring and countering North Korea, Iran, and violent extremist organizations. Accordingly, what was previously called 4+1 is now commonly referred to as “2+3.”

<sup>5</sup> Ibid., 2–5. The instruction outlines that “eight overarching required elements are operational areas that need focused attention within joint training programs to achieve desired effects within the joint operational and informational environment.” These requirements are transregional joint training, multidomain joint training, multifunctional joint training, partner integration in joint training, contested environments in joint training, conventional and special operations forces’ interoperability in joint training, joint force leaders in joint training, and countering weapons of mass destruction in joint training.

<sup>6</sup> Ibid., 5–6. The instruction states, “Reorienting from a regional construct to one that addresses our priority strategic challenges through a global lens enables the joint force to be better positioned to advance national interests.” Emphasis added.

<sup>7</sup> “Origin of Joint Concepts,” Joint Staff, available at <[www.jcs.mil/About/Origin-of-Joint-Concepts/](http://www.jcs.mil/About/Origin-of-Joint-Concepts/)>.

<sup>8</sup> *Organizational Development of the Joint Chiefs of Staff, 1942–2013* (Washington, DC: Joint History Office, 2013), 3, available at <[www.jcs.mil/Portals/36/Documents/History/Institutional/Organizational\\_Development\\_of\\_the\\_JCS.pdf](http://www.jcs.mil/Portals/36/Documents/History/Institutional/Organizational_Development_of_the_JCS.pdf)>.

<sup>9</sup> Andrew J. Bacevich, *The Long War: A History of U.S. National Security Policy Since*

*World War II* (New York: Columbia University Press, 2009), 267; William Inboden, “The National Security Act Turns 70,” *War on the Rocks*, July 25, 2017, available at <<https://warontherocks.com/2017/07/the-national-security-act-turns-70/>>.

<sup>10</sup> Peter J. Roman and David W. Tarr, “The Joint Chiefs of Staff: From Service Parochialism to Jointness,” *Political Science Quarterly* 113, no. 1 (1998), 92.

<sup>11</sup> Goldwater-Nichols Department of Defense Reorganization Act of 1986, Public Law 99-433, 99<sup>th</sup> Cong., October 1, 1986, available at <[http://history.defense.gov/Portals/70/Documents/dod\\_reforms/Goldwater-Nichols-DoDReordAct1986.pdf](http://history.defense.gov/Portals/70/Documents/dod_reforms/Goldwater-Nichols-DoDReordAct1986.pdf)>.

<sup>12</sup> Ronald H. Cole, “Grenada, Panama, and Haiti: Joint Operational Reform,” *Joint Force Quarterly* 20 (Autumn/Winter 1998–1999), 57–74.

<sup>13</sup> Justin Johnson, “2017 NDAA: Define the Goldwater-Nichols Problem Before Trying to Solve It,” Heritage Foundation, Washington, DC, July 12, 2016, available at <[www.heritage.org/defense/report/2017-ndaa-define-the-goldwater-nichols-problem-trying-solve-it](http://www.heritage.org/defense/report/2017-ndaa-define-the-goldwater-nichols-problem-trying-solve-it)>.

<sup>14</sup> National Defense Authorization Act for Fiscal Year 2017 (NDAA 2017), Public Law 114-328, 114<sup>th</sup> Cong., December 23, 2016, 1–2, available at <[www.congress.gov/114/plaws/publ328/PLAW-114publ328.pdf](http://www.congress.gov/114/plaws/publ328/PLAW-114publ328.pdf)>. The NDAA 2017 Executive Summary notes that the intent of Goldwater-Nichols was to ensure that the Chairman remain outside the chain of command in order to “guard against over-centralization of military power” in the Chairman’s office and maintain civilian control of the military. The Senate Armed Services Committee (SASC), however, believes that today’s environment undermines decisionmaking timeliness when all decisions must come from the Secretary of Defense. To mitigate this concern, the NDAA 2017 vests the Chairman with some, although not command, global integration authorities. The Executive Summary is available at <[www.armed-services.senate.gov/imo/media/doc/FY17%20NDAA%20Bill%20Summary.pdf](http://www.armed-services.senate.gov/imo/media/doc/FY17%20NDAA%20Bill%20Summary.pdf)>.

<sup>15</sup> Colin Clark, “First, Do No Harm: SASC Begins Goldwater-Nichols Review,” *Breaking Defense*, November 9, 2015, available at <<https://breakingdefense.com/2015/11/first-do-no-harm-sasc-begins-goldwater-nichols-review/>>.

<sup>16</sup> NDAA 2017 Executive Summary, 1.

<sup>17</sup> Shawn Brimley and Paul Scharre, “CTRL + ALT + DELETE: Resetting America’s Military,” *Foreign Policy*, May 2014, available at <<http://foreignpolicy.com/2014/05/13/ctrl-alt-delete/>>; Kelly McCoy, “The World the Combatant Command Was Designed for Is Gone,” *War on the Rocks*, October 7, 2016, available at <<https://warontherocks.com/2016/10/the-world-the-combatant-command-was-designed-for-is-gone/>>.

<sup>18</sup> Chad Pillai, “Reorganizing the Joint

Force for a Trans-Regional Threat Environment,” *Real Clear Defense*, January 4, 2017, available at <[www.realcleardefense.com/articles/2017/01/05/reorganizing\\_the\\_joint\\_force\\_for\\_a\\_trans-regional\\_threat\\_environment\\_110581.html](http://www.realcleardefense.com/articles/2017/01/05/reorganizing_the_joint_force_for_a_trans-regional_threat_environment_110581.html)>; Sydney J. Freedberg, Jr., “Joint Staff Must Boost Global Coordination; No New Powers Needed: J5,” *Breaking Defense*, April 27, 2017, available at <[https://breakingdefense.com/2017/04/joint-staff-must-step-up-global-coordination-no-new-powers-needed-j-5/](http://breakingdefense.com/2017/04/joint-staff-must-step-up-global-coordination-no-new-powers-needed-j-5/)>.

<sup>19</sup> Joint Staff J7, Joint Force Development. J7 was directed to focus globally integrated exercises (GIE) on “address[ing] the higher-level collaboration of the Joint Staff with [the Office of the Secretary of Defense] and coordination among [combatant commands], reflect[ing] the strategic environment and its respective challenges [and] emphasize[ing] global integration across the 4+1 challenges.”

<sup>20</sup> Ibid. GIE is intended to be “an exercise program designed to ensure the joint force is able to effectively operate as a true integrated force against TMM threats, and provide a full range of flexible and responsive options to decision makers.”

<sup>21</sup> Joint Staff J7, Joint Force Development.

<sup>22</sup> Joseph Dunford, Jr., “Gen. Dunford’s Remarks and Q&A at the Center for Strategic and International Studies,” Washington, DC, March 29, 2016, available at <[www.jcs.mil/Media/Speeches/Article/707418/gen-dunfords-remarks-and-qa-at-the-center-for-strategic-and-international-studi/](http://www.jcs.mil/Media/Speeches/Article/707418/gen-dunfords-remarks-and-qa-at-the-center-for-strategic-and-international-studi/)>.

<sup>23</sup> Joint Staff J7, Joint Force Development.

<sup>24</sup> Ibid.

<sup>25</sup> Ibid.

<sup>26</sup> U.S. Code, Title 10, Subtitle A, Part I, Chapter 5, § 153, “Chairman: Functions,” (3), available at <[www.law.cornell.edu/uscode/text/10/153](http://www.law.cornell.edu/uscode/text/10/153)>.

<sup>27</sup> Ibid. This language was added to § 153 by the NDAA 2017. The addition of this responsibility for the Chairman is likely the first legislative initiative, as Congress seeks to improve the Department’s globally integrated operations capabilities.

<sup>28</sup> Dunford.

Soldiers with 254<sup>th</sup> Regiment (Combat Arms), New Jersey Army National Guard, fly RQ-11B Raven small unmanned aircraft system at Joint Base McGuire-Dix-Lakehurst, New Jersey, July 11, 2016 (U.S. Air National Guard/Mark C. Olsen)



# Moore's Law and the Challenge of Counter-sUAS Doctrine

By Mark D. Newell

*As I reflect back on four decades of service in uniform, it is clear that the pace of change has accelerated significantly.*

—GENERAL JOSEPH F. DUNFORD, JR.

In 1965, Gordon Moore, co-founder of the Intel Corporation, made his now famous prediction that the “number of transistors incorporated in a chip will approximately double every 24 months.”<sup>1</sup> More than 50 years later, his prediction has not only held true, but also the implications of what is now called Moore’s Law define the combat environment for the joint force.

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The continual miniaturization, mass production, proliferation, and improvement of integrated circuits and microprocessors have introduced powerful computing technology into every aspect of modern life.

One of the many modern applications of the integrated circuit is in controlling small unmanned aircraft systems (sUAS). Commonly referred to by the name *drones*, commercially available sUAS have increasingly become a weapon of choice for nonstate actors with limited resources. Their rapid evolution and

innovative application have created several challenges for a joint force tasked to establish a defense against them. Not least among these challenges has been the development and dissemination of useful counter-sUAS (C-sUAS) doctrine.

## History and Context

At first glance, Moore’s Law appears to describe the potential growth of a single technology through miniaturization. What is unique about the exponential miniaturization of transistors, though, is their foundation. Transistors form the

basic building blocks of integrated circuits and microprocessors, which in turn act as the computational core of almost every piece of electronic technology. For each reduction in transistor size over the last five decades, computing capability has increased, while production costs have decreased. The increased affordability for consumers has resulted in broad market penetration. Today, transistor and microprocessor technology are ubiquitous; they touch every aspect of modern life including the weapons systems of the joint force and its adversaries. Although it is doubtful he understood it at the time, Moore predicted the dawn of a technological age no less significant than the industrial revolution in the 18<sup>th</sup> century.

Despite the fact that weapons technology in every sector has transformed rapidly over the last 50 years, the evolutionary pace of sUAS has been particularly startling. These systems seem to have burst onto the battlefield with remarkable and fully developed capabilities. In truth, this perception is not entirely accurate, as the capabilities of today's sUAS were nurtured in what amounts to a global cottage research and development program. While the weight of military effort was focused on replicating manned aircraft capabilities in larger UAS, anything under 50 pounds had been essentially relegated to the realm of hobbyists.

Quietly in garages and basements around the world, remote control aircraft enthusiasts incorporated each advancement in miniaturization and processing capacity into their hobby. Smaller radios allowed greater range with less weight. Miniaturized cameras were incorporated that could transmit real-time data to operators wearing virtual reality headsets. Powerful microprocessors and Global Positioning System receivers created aerodynamic stability and allowed complex propulsion configurations and the capability to preprogram routing beyond radio range. These advances, along with ever-decreasing entry-level costs, greatly expanded the global remote-control (RC) aircraft market.

In December 2015, the Federal Aviation Administration (FAA)

designated RC aircraft between 0.55 and 55 pounds as "sUAS" and began regulating their activities in an effort to manage the growing numbers operating in the United States. As one indication of the scale and pace of UAS growth, this year's *FAA Aerospace Forecast* predicts as many as 4.4 million sUAS will be registered in the United States by 2021.<sup>2</sup> If accurate, this would amount to a 400 percent increase over the next 5 years.<sup>3</sup>

### Terrorism and Budget

With the steady rise of international terrorism over the last two decades, bad actors around the globe have actively sought low-cost, readily available technology that can be weaponized for their purposes. Predictably, they have found and embraced the sUAS as an economical tool in their arsenal. The decade-long pursuit and evolution of terrorist organizations' use of sUAS is detailed in a 2017 report by the Middle East Media Research Institute.<sup>4</sup> What began in 2004 with a 20-minute sUAS reconnaissance over Israel by Hizballah<sup>5</sup> has evolved to a point where so-called Islamic State fighters routinely use sUAS to drop grenades on U.S. special operations forces in Iraq and Syria.<sup>6</sup>

Concerns for the future, however, lie much closer to home as the Department of Homeland Security has advised American citizens that terrorist groups are actively pursuing "new technologies and tactics, such as unmanned aerial systems and chemical agents that could be used outside the conflict zones."<sup>7</sup> While the technology and tactics to defend against larger UAS have existed in the form of antiaircraft capability since the dawn of aviation, sUAS pose a new and unique threat. Small and maneuverable enough to elude most surveillance and early warning radar systems, they are also quiet and therefore difficult to detect. In the United States, aside from FAA registration, there are no restrictions on the purchase of military-grade sUAS. People interested in acquiring a capability via the Internet will find that they can purchase a quadcopter with its own camera system, capable of 12-minute flights, controlled with a cell phone, and delivered to their home for

under \$180.<sup>8</sup> On the high end of the spectrum, 20 hours of endurance, cruising speeds of 50 mph, and a 22-pound payload can be purchased for just \$17,000.<sup>9</sup> Given the availability and capability of these systems, the joint force, along with the entire U.S. defense apparatus, has significantly increased its focus on countering their capability at home and abroad.

### Change and Challenge

In keeping with Moore's Law, the evolution of sUAS technology continues to accelerate. An examination of new, marketable ideas in the field makes one of the better illustrations of this point. A 2014 report showed a total of five new UAS patents were published in 2001.<sup>10</sup> The same report showed 12 new patents published in 2003, 22 in 2005, and a near perfect exponential increase every 24 months through the end of the reported period, where it indicated that 372 new patents were published in 2014.<sup>11</sup> Even if each of these patents only represents a small but measurable increase in capability, the rate of sUAS evolution is daunting.

The effort to establish and deploy C-sUAS capability within the joint force has been remarkably expeditious. Even a casual Internet search for "C-UAS" reveals a significant uptick in government outreach to industry in 2016. Phrases such as *Joint Urgent Operational Need*<sup>12</sup> and government-sponsored C-UAS competitions focused on evaluating "Hard Kill" technologies<sup>13</sup> are prevalent in the results. The same search also reveals an outpouring of industry response. Dozens of new technologies and adaptations of existing ones have been rapidly developed, and just as rapidly fielded for evaluation on the battlefield.

With the support of innovative industry partners, U.S. Central Command is meeting the C-sUAS challenge with deliberate action. In response to the immediate nature of the sUAS threat, the command has deployed over 100 different experimental C-sUAS systems throughout the theater.<sup>14</sup> Ranging from man-portable to large fixed-base systems, all are undergoing operational evaluation by the joint force in the combat



Marine with Company Bravo, 1<sup>st</sup> Battalion, 6<sup>th</sup> Marine Regiment, prepares to fly Mark-2 Instant Eye during Infantry Platoon Battle course as part of Deployment for Training on Fort Pickett, Virginia, August 15, 2017 (U.S. Marine Corps/Michaela R. Gregory)

environment.<sup>15</sup> Once sufficient data have been collected, the field will be narrowed and a subset chosen for larger scale production and deployment. Were it not for the evolutionary rate of sUAS, this process would be relatively straightforward.

Unfortunately, as the current experimental C-sUAS systems are being evaluated in the field, teams of designers and engineers are already working on the next generation. A thumb through the science and technology periodicals at any bookstore yields articles about artificial intelligence, autonomous systems, swarm tactics, and more. Given the current rate of evolutionary change, it is entirely possible that the next generation of sUAS technology will be deployed on the battlefield before evaluation of the

current C-sUAS systems has completed. This moving target, which is increasingly harder to hit, is the challenge implied by Moore's Law. If there is one aspect of the C-sUAS effort more difficult than keeping pace with sUAS evolution, it might be producing useful C-sUAS doctrine.

### **Doctrine and Adaptation**

The concept of military doctrine bears brief discussion because it often means different things to different people. There are essentially three levels of military doctrine: Service, multi-Service, and joint. Where multi-Service doctrine may be specific to two or more Services, joint doctrine is published by the Chairman of the Joint Chiefs of Staff for use by all the Services. Gener-

ally speaking, doctrine should be both aspirational and instructional. It should capture the best ideas and practices from across the formation, boil them down to their essences, clearly articulate them, and present them back to the formation as achievable goals and standard procedures. This description is in line with the Chairman's Memorandum 5120.01A, *Joint Doctrine Development Process*, which requires joint doctrine to reflect "extant practice" and capture "lessons learned."<sup>16</sup> It also illustrates how the efforts of the joint force are synchronized through common understanding and expectation.

One prerequisite to capturing, documenting, and disseminating extant practice is the establishment of the extant practice itself. In other words, it is difficult to describe how things are normally done when they are not done in any particular way. The same can be said for the durability of the extant practice. If the way things are done changes at an interval shorter than the doctrine development timeline, any doctrine produced will be of limited value. This is particularly challenging regarding joint doctrine, where new submissions are thoroughly vetted by a joint doctrine development community of 264 representatives from combatant commands, Services, and other stakeholders. Over the past 20 years, joint doctrine development timelines have been streamlined from 21 months in 1996, to 17 months, and again this summer to 12 months with the implementation of the Adaptive Doctrine initiative.<sup>17</sup> Even with these significant improvements, capturing rapidly evolving C-sUAS practices in joint doctrine remains a challenge.

The approach the C-sUAS doctrine community has taken is to balance specificity and accuracy while favoring timeliness. That is to say they have purposely provided an intellectual framework that allows efficient communication of ideas in the short term, while avoiding some of the specificity that might become inaccurate by the time it is published. Within the joint force, the Army gets full credit for the groundwork that it laid in C-sUAS doctrine. In October 2016, as the first experimental C-sUAS systems

were being deployed, the Army released an unclassified C-UAS strategy that had as its stated purpose “to integrate and synchronize C-UAS efforts across the Army, and to inform joint, inter-organizational, and multinational partners.”<sup>18</sup>

This was not the first C-sUAS discussion, but it was the first broadly disseminated and authoritative document to outline a course forward. Not only did it establish baseline terminology in its 13 pages, but it also laid out short- and long-term priorities in the development of C-sUAS capability. The value of the standard military terms and their definitions cannot be overstated as they establish the foundation of doctrine. Even before the first joint publication (JP) was printed, the Department of Defense Dictionary was created in 1948 to allow “the joint force to organize, plan, train, and execute operations with a common language that is clearly articulated and universally understood.”<sup>19</sup>

Armed with the baseline terminology and concepts from the Army C-UAS strategy, deployed forces established local procedures from which generic tactics, techniques, and procedures were written. These and other tactically oriented planning considerations were initially captured in Army Tactical Publication 3-01.81, *Counter-Unmanned Aircraft System Techniques*, and ultimately consolidated into the *Multi-Service Tactics, Techniques, and Procedures (MTTP) Manual for Air and Missile Defense*. Because joint publications are focused on operational- and strategic-level doctrine, the April 2017 revision of JP 3-01, *Countering Air and Missile Threats*, provides a brief C-sUAS discussion, but ultimately refers the reader to the MTTP where the majority of C-sUAS doctrine resides, pending the further development of higher level practice.

The end result of this effort is a framework of concepts, terminology, definitions, considerations, and generic procedures specific enough to be useful, yet vague enough to remain relevant as C-sUAS technology evolves. Although it is addressed at the joint, multi-Service, and Service levels, C-sUAS doctrine rarely refers to a *specific* C-sUAS

technology. By maintaining a conceptual approach, this framework is presented with the expectation that combatant commands and deployed forces will adapt it to their specific circumstances and experimental systems.

## Conclusions

Just as the sUAS is likely to remain on the battlefield for quite some time, so will the changes they have illuminated in the doctrine development process. If Moore’s Law continues to hold true, new technologies will increasingly be fielded in response to emerging threats with only the roughest outline of employment doctrine in place. Therefore, despite a continued and concerted effort to simplify doctrine development, the burden of adapting general guidance to new battlefield situations will remain heavy on the shoulders of the men and women engaged in the fight.

Effective C-sUAS doctrine is in the hands of deployed personnel today because doctrine developers did not wait for the environment to match their expectations; they adapted their expectations and the doctrine development process to the new environment. On the modern battlefield where the technology is evolving almost faster than it can be documented, matching that speed with non-technology based processes is not always an option. Going forward, flexibility and adaptation will be the joint force’s key to avoid being outpaced by its own technology or that of its adversaries. JFQ

## Notes

<sup>1</sup> “Moore’s Law and Intel Innovation,” *Intel.com*, available at <[www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html](http://www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html)>.

<sup>2</sup> *FAA Aerospace Forecast: Fiscal Years 2017–2037* (Washington, DC: Federal Aviation Administration, 2017), available at <[www.faa.gov/data\\_research/aviation/aerospace\\_forecasts/media/FY2017-37\\_FAAs\\_Aerospace\\_Forecast.pdf](http://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2017-37_FAAs_Aerospace_Forecast.pdf)>.

<sup>3</sup> Ibid.

<sup>4</sup> Steven Stalinsky and R. Sosnow, *A Decade of Jihadi Organizations’ Use of Drones—From Early Experiments by Hezbollah, Hamas, and Al-Qaeda to Emerging National Security Crisis*

*for the West as ISIS Launches First Attack Drones* (Washington, DC: Middle East Media Research Institute, February 21, 2017), available at <[www.memri.org/reports/decade-jihadi-organizations-use-drones-%E2%80%93-early-experiments-hizbullah-hamas-and-al-qaeda](http://www.memri.org/reports/decade-jihadi-organizations-use-drones-%E2%80%93-early-experiments-hizbullah-hamas-and-al-qaeda)>.

<sup>5</sup> Ibid.

<sup>6</sup> David Von Drehle, “The Security Threat We’ve Been Ignoring: Terrorist Drones,” *Washington Post*, September 29, 2017, available at <[www.washingtonpost.com/opinions/the-security-threat-were-ignoring-terrorist-drones/2017/09/29/3fdb1374-a51f-11e7-b14f-f41773cd5a14\\_story.html?utm\\_term=.082cd6cbdd7c](http://www.washingtonpost.com/opinions/the-security-threat-were-ignoring-terrorist-drones/2017/09/29/3fdb1374-a51f-11e7-b14f-f41773cd5a14_story.html?utm_term=.082cd6cbdd7c)>.

<sup>7</sup> “Summary of Terrorism Threat to the U.S. Homeland,” bulletin, National Terrorism Advisory System, November 9, 2017, available at <[www.dhs.gov/sites/default/files/ntas/alerts/17\\_1109\\_NTAS\\_Bulletin.pdf](http://www.dhs.gov/sites/default/files/ntas/alerts/17_1109_NTAS_Bulletin.pdf)>.

<sup>8</sup> “Parrot AR.Drone 2.0 Elite Edition,” available at <[www.parrot.com/us/drones/parrot-ardrone-20-elite-edition](http://www.parrot.com/us/drones/parrot-ardrone-20-elite-edition)>.

<sup>9</sup> “Unmanned Platforms and Subsystems,” available at <[www.uavfactory.com/product/46](http://www.uavfactory.com/product/46)>.

<sup>10</sup> “Hovering Over the Drone Patent Landscape,” *ifClaims Patent Services*, November 19, 2014, available at <[www.ifclaims.com/news/view/blog-posts/hovering-over-the-drone.htm](http://www.ifclaims.com/news/view/blog-posts/hovering-over-the-drone.htm)>.

<sup>11</sup> Ibid.

<sup>12</sup> Jonathan W. Dickens and Terry Carter, “Joint Urgent Operational Need (JUON) Phase 1A,” *GovTribe.com*, available at <[www.govtribe.com/project/joint-urgent-operation-al-need-juon-phase-1a/activity](http://www.govtribe.com/project/joint-urgent-operation-al-need-juon-phase-1a/activity)>.

<sup>13</sup> “Counter-Unmanned Aerial System (C-UAS) Hard Kill Challenge,” *Challenge.gov*, available at <[www.challenge.gov/challenge/counter-unmanned-aerial-system-c-uas-hard-kill-challenge/](http://www.challenge.gov/challenge/counter-unmanned-aerial-system-c-uas-hard-kill-challenge/)>.

<sup>14</sup> *Combined Joint Task Force—Operation Inherent Resolve Leaders C-UAS Handbook* (MacDill Air Force Base, FL: U.S. Central Command, August 12, 2017), 3.

<sup>15</sup> Ibid.

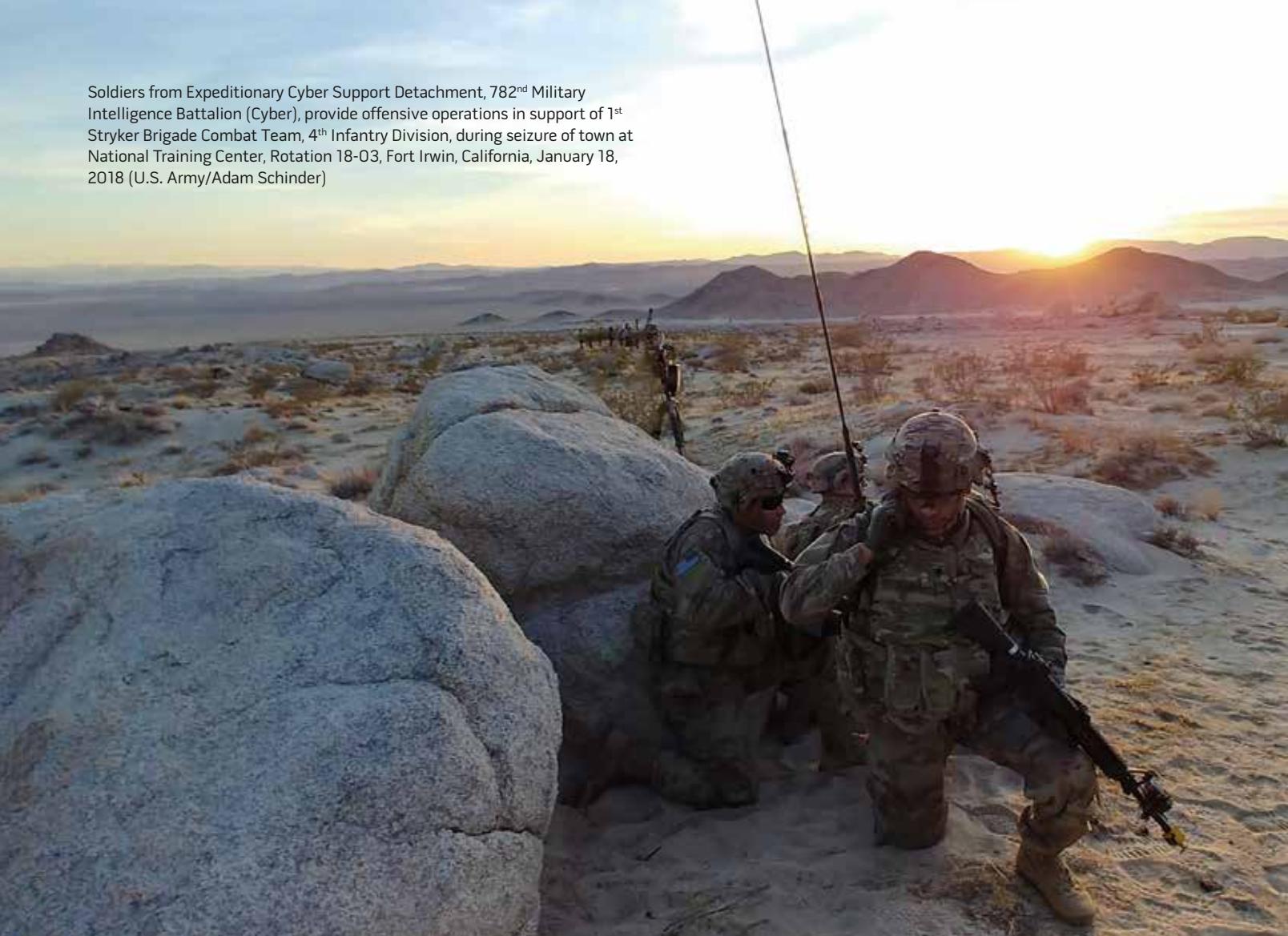
<sup>16</sup> Chairman of the Joint Chiefs of Staff Memorandum 5120.01A, *Joint Doctrine Development Process* (Washington, DC: The Joint Staff, 2014), B1.

<sup>17</sup> Gregory E. Browder and Marcus J. Lewis, “Adaptive Doctrine: Infusing the Changing Character of Warfare into Doctrine,” *Joint Force Quarterly* 86 (3rd Quarter 2017), 120–121, available at <[ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-86/Article/1223847/adaptive-doctrine-infusing-the-changing-character-of-warfare-into-doctrine/](http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-86/Article/1223847/adaptive-doctrine-infusing-the-changing-character-of-warfare-into-doctrine/)>.

<sup>18</sup> *Counter-Unmanned Air Craft System (C-UAS) Strategy Extract* (Washington, DC: Headquarters Department of the Army, October 5, 2016), available at <[www.arcic.army.mil/App\\_Documents/Army-CUAS-Strategy.pdf](http://www.arcic.army.mil/App_Documents/Army-CUAS-Strategy.pdf)>.

<sup>19</sup> Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, August 2017).

Soldiers from Expeditionary Cyber Support Detachment, 782<sup>nd</sup> Military Intelligence Battalion (Cyber), provide offensive operations in support of 1<sup>st</sup> Stryker Brigade Combat Team, 4<sup>th</sup> Infantry Division, during seizure of town at National Training Center, Rotation 18-03, Fort Irwin, California, January 18, 2018 (U.S. Army/Adam Schinder)



# Outmatched

## Shortfalls in Countering Threat Networks

By David Richard Doran

Our adversaries employ threat networks to create conditions in the operating environment that undermine international order and rule of law—without triggering a decisive military response. Taking a

cue from Sun Tzu, in many areas they are winning without fighting, but by employing means that we consider nonmilitary. These persistent simultaneous efforts unbalance joint force footing by causing regional instability, damage to legitimacy, degraded access, conduits for weapons and fighters, and ultimately pathways for attacks against the homeland. Understanding how adversaries use threat networks globally

to compete with us below the threshold of traditional armed conflict is a critical first step to identifying opportunities to exploit, disrupt, or degrade threat networks. However, the increasing convergence of legitimate and illicit networks complicates our ability to gain the level of understanding required to do this effectively. A dilemma thus ensues: Commanders are encumbered with problems for which the optimal

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(or only) solutions are often nonmilitary, representing a condition that is anathema to our culture and, as such, incongruent with our processes.

The joint force is not postured to effectively counter these threat networks at a level that matches, or much less over-matches them. Historically, when faced with emerging challenges that could not be addressed using extant practices, processes, or capabilities, such as the proliferation of improvised explosive devices or weapons of mass destruction, we did not accept a casual, disjointed approach to countering them. Accordingly, we should not attempt to counter threat networks through ad hoc ways and means but rather adopt a deliberate approach, rooted in policy, enshrined in doctrine, instilled in our institutions, and understood throughout the joint force.

Leaders and planners must embrace a deeper understanding of the role that threat networks play in shaping the global environment so that they can effectively counter them and prevent adversaries from threatening U.S. interests. Achieving this seismic shift in how we think about threat networks will allow us to harden our blue network, closing gaps and seams that adversaries are otherwise able to exploit. It requires a comprehensive approach—spanning organizational, functional, and institutional boundaries—to develop an integrated framework for countering threat networks (CTN).

*Threat networks* are described in joint doctrine as those whose size, scope, or capabilities threaten American interests. These networks may include the underlying informational, economical, logistical, and political components to enable these networks to function. These threats create a high level of uncertainty and ambiguity in terms of intent, organization, linkages, size, scope, and capabilities. They also jeopardize the stability and sovereignty of nation-states, including the United States.<sup>1</sup>

Consider Russian organized crime, Chinese drug trade, North Korean weapons proliferation, Iranian terror exportation, financing, and recruiting by the so-called Islamic State. What do all of these have in common? Among other things, they actively employ nonmilitary enabling networks to achieve strategic objectives within what we call the Gray Zone, Phase 0, and competition short of armed conflict.<sup>2</sup> Joint planners must navigate an operating environment made increasingly more complex by the deliberate employment of these networks. Decisionmakers rely on analysts and planners to develop comprehensive threat pictures and associated response options and plans, but these are often incomplete for several reasons. First, these networks often manifest across the spectrum of threat activities as decentralized, fluid, and resilient webs of loosely connected nodes, making them hard to illuminate. This is further complicated by the diverse natures of these networks, which range from illicit to legitimate or somewhere in between, making them difficult to target.

Finally, military adversaries use them to avoid direct military engagement (even attribution) while gaining relative advantage against the joint force, making them hard to defeat.

As a military function, CTN is somewhat of an orphan. It is not exclusively a problem that the joint force owns outright, but one requiring integration of military and nonmilitary applications of national power. Threat networks are not exclusively a counterterrorism problem. We cannot waive it off as an unconventional warfare problem or one with a special operations forces solution. We certainly cannot shrug it off as simply a diplomatic or law enforcement problem. We also cannot afford to pigeonhole CTN into one or two lanes or job jars; there must be *cross-functional* ownership.

We have to operationalize key players from within each element of national power to work together in a concerted effort, combining their unique skills and authorities. It is this constellation of organizations and entities that makes up the enterprise involved in countering threat networks. While there is a broad range of capabilities that can be brought to bear in the effort, CTN skill-sets generally fall into the following disciplines:

- threat network targeting
- counter-threat finance
- law enforcement
- counter-message
- counter-transnational organized crime
- counternarcotics
- counterinsurgency
- counter-weapons of mass destruction
- friendly network engagement
- counterterrorism
- social network exploitation
- publicly available information exploitation
- cyber operations
- information management
- counterintelligence.

## 2017 CTN Study

The Joint Staff J7 Office of Irregular Warfare (OIW) conducted a study to review and optimize the enterprise

## From Coordination to Collaboration to Integration

"After 9/11, the U.S. Government was compelled to confront its weaknesses in interagency coordination, and while we have made tremendous progress in the intervening years, I believe we have mostly exhausted the strategic value we could derive from improved coordination. This explains why, over the past several years, we have increasingly been using the word *collaboration*—which requires far more than just information-sharing and operational synchronization. It requires doing things together as an interagency team for temporary but important purposes. We have made even more strategic progress because of our transition to collaboration, but I believe we are starting to see the limits of how far interagency elements temporarily doing things together can take us."

"My personal view is that the next necessary phase, which will admittedly be harder than both coordination and collaboration, is integration. This will require us to more permanently bring previously disparate elements and efforts of the interagency community together into enduring structures and strategic missions, where more government elements spend large portions of their careers working outside of their originating organization or agency. This will be both difficult and uncomfortable for many of us, but I believe that a world in which our future adversaries and challenges will defy both our geographic models and our department-by-department practices on a global (as opposed to country or even regional) scale demands this of us."

—Lieutenant General Michael K. Nagata, USA  
Director for Strategic Operational Planning  
National Counter Terrorism Center

deliberate approach designed to maximize the benefits of combining joint force and partner capabilities. We tend to look at individual aspects and segments of threat networks through functional "soda straws." We orient and fixate on the commodity and do not pay sufficient attention to the enabling networks. This is akin to treating the symptom and ignoring the disease. Moreover, a holistic regimen for treating a disease should take advantage of all appropriate approaches, not only those remedies that relieve the symptom for a time. Threat networks are like complex, adaptive, and resilient organisms that evolve in order to survive. The approach to treat them must be robust enough to be formidable, yet agile enough to keep up with their changing modes and methods. This requires an organizational construct that coordinates policy and processes, prioritizes resources, and integrates with other departments, agencies, international partners, and even the private sector and academia.

Third, we should become comfortable in supporting roles. The joint force cannot defeat threat networks alone. In the same vein, we cannot effectively compete with our military competitors without addressing the threat networks they employ. Traditionally, we have a bias for immediate, decisive action on the objective. However, defeating threat networks often requires a modicum of patience and will not normally result in a military finish. Thus, we have to depend on our partners and allies to fill roles that we cannot. Interagency teaming is critical to countering and defeating threat networks.

The joint force must become comfortable with bringing resources to bear in support of an interagency partner because the optimal finish might be an arrest and prosecution—and the action arm might be a law enforcement agency. This requires enormous trust and confidence across organizational lines. It cannot be surged, but rather, it must be cultivated over time in an environment that compels something more than coordination and collaboration—true *integration*. Furthermore, planners cannot develop the full range of options available against

involved in countering threat networks.<sup>3</sup> The director of the Joint Staff tasked OIW to examine joint force CTN operations and activities, with the goal of strengthening transregional collaboration and integration with U.S. Government and other mission partners.<sup>4</sup> The study included a literature review and an extensive series of site visits and stakeholder engagements with representatives from the combatant commands and other governmental organizations.

The study identified five areas in which the joint force is not optimized to empower our components, institutions, and partners to work in concert in a deliberate, integrated approach to address the global array of threat networks. In short, while there are eddies of CTN excellence within the joint force, our collective efforts to confront threat networks remain mostly aspirational and our commitment to be a good partner in this endeavor is imperfect at best.

First, we are not adequately integrating CTN into strategy and plan development. A common misstep by

joint planners is to lump CTN and its associated activities into some sort of catch-all subset of counterterrorism. As demonstrated in previous examples, CTN applies to all challenges within the current threat framework and conceivably any that might emerge. Given this common link that spans the challenges presented in the National Military Strategy, it is critical to infuse both the approach and the capabilities into our overarching strategy guidance and ensure effective translation and nesting in subordinate plans at all levels.<sup>5</sup> These plans (for example, global as well as combatant command campaign plans) should effectively address the ways our adversaries have successfully operationalized military and nonmilitary instruments of national power to achieve objectives. Once CTN is firmly rooted in plan and campaign development, regular assessment of how we are doing should follow.

Second, we are employing an ad hoc approach to CTN. The joint force, and the U.S. Government generally, does not organize CTN activities through a

threat networks without meaningful partner involvement in all phases of planning. We need cross-cutting, specific policy guidance directing increased integration with partners across the range of activities, exercises, planning, and execution. Most important, we need authority, flexibility, and permission to support, rather than lead, in most CTN efforts.

Fourth, we do not educate, organize, train, and manage people to conduct CTN activities. Joint force leaders and planners often fail to link threat network activities directly to national security interests. Consequently, they fail to see how countering these networks can achieve military objectives. This may be because we have not educated our people about the importance of these adversaries or the capabilities resident in the joint force and its partners. Additionally, there is no meaningful demonstration or wargaming as to how these capabilities can be integrated into operational planning to achieve desired outcomes, such as a scenario where the finish is not a major military operation, but one that still achieves its military objectives.

We do not invest in the development of joint force personnel with specialized CTN skills as we do with more conventional or special operations specialties. In the few areas where we have invested in training (for example, counter-threat finance, counternarcotics, border security), we have not developed career tracks and incentivized our people to stay in them long enough to become experts. Furthermore, we do not prioritize or synchronize liaison officer (LNO) placement to or from our partners and allies. This means that the person representing DOD to our partners may not be properly qualified to deliver a message consistent with Secretary of Defense and Chairman of the Joint Chiefs of Staff guidance. Likewise, LNOs whom our partners embed with us may or may not be in the best position to effectively represent their organizations' capabilities or authorities within critical processes, such as campaign development or operational planning.



Air Force KC-10 Extender aircraft refuels F-22 Raptor aircraft over undisclosed location, September 26, 2014, before strike operations in Syria (DOD/Russ Scalf)

We need to improve joint doctrine, training, education, and leader development to institutionalize general and specialized CTN knowledge and better integrate CTN into professional military education. Likewise, we need to improve career management in these skill-sets. We also need to optimize our LNO exchanges through a coordinated

process that ensures the messenger, and thus the message, are properly placed.

Fifth, we do not manage and share information well. This is not exclusively a joint force problem, but we can at least improve our own foxhole. The lack of common data management across combatant commands, between commands and Service components, and with



Sailor stands watch in combat information center on dock landing ship USS *Harpers Ferry* in South China Sea, August 4, 2016, supporting security in Indo-Asia-Pacific region (U.S. Navy/Zachary Eshleman)

partner organizations at best impedes efforts to synchronize plans, activities, and assessments. At worst, it is the critical point of failure in successfully illuminating and dismantling threat networks. Because these networks operate across functional and geographic boundaries, they stress the Intelligence Community's collection and analysis networks, challenging our capacity to triage and disseminate meaningful intelligence. Vital intelligence then dies on the vine of disjointed information structures and outdated data management and sharing policies.

This severely degrades the most elemental CTN function: illumination of the networks we need to target. Consequently, it prevents planners and leaders from seeing the entirety of a given threat, including its connections to enabling networks. We need an in-depth study of DOD information management policies, practices, and capabilities that looks across communities (intelligence,

diplomatic, law enforcement, military, and so forth), anticipates technological advancement, and is concerned with enabling a globally connected joint force—and mindful of a globally connected and unconstrained threat.

### How to Strengthen a Broader CTN Effort?

It is important to recognize that the joint force is not required or expected to do it all when it comes to CTN; it would be impractical to try. Interdependence with our partners should be part and parcel of our paradigm. However, we must be willing to bring to bear our strengths that serve to empower partners, even if it seems like the heaviest lift in the effort at times. This does not obligate us to take on a leading role every time, despite expectations to the contrary.

At the same time, however, we should leverage our ability to put a problem on

the table and pull in relevant stakeholders to do more than just admire the problem together, but, rather, coalesce around it and form viable solutions. Joint force leaders should capitalize on this capacity and look for opportunities to gain consensus regarding various problem sets and elucidate their potential as serious national security threats.

The joint force has inherent strengths that include the capabilities to provide force protection; mobility; secure communications; intelligence, surveillance, and reconnaissance support; operational planning; and logistics. The joint force can apply these capabilities to contribute to the effectiveness of a friendly network by

- providing planning frameworks and support
- identifying, locating, understanding, illuminating, and targeting threat networks

- assisting mission partners in counter-threat finance
- building partner capacity
- denying safe haven
- conducting direct action, including capture operations and the use of lethal force against lawful targets
- assisting mission partners in countering threat mobility and cross-border movement, including detection and interdiction
- identifying and understanding the capabilities, interests, will, and intent of friendly networks
- conducting information operations that attack, disrupt, sabotage, subvert, and deceive adversary capabilities
- conducting offensive and defensive cyber operations
- supporting and complementing U.S. strategic messaging and communication activities.<sup>6</sup>

## Conclusion

Our adversaries purposefully use threat networks in diverse and innovative ways to unbalance military efforts and hold at risk our partnerships, objectives, and even our national interests. But where there is risk, there is often opportunity. The joint force can take advantage of the complex and chaotic operating environment by pushing hard for increased integration of efforts across the U.S. Government and with international partners. This enhanced state of interorganizational integration will pay dividends in the long term, particularly against state adversaries who can force their own whole-of-nation unity of effort. Operation *Gallant Phoenix* demonstrates how we can capitalize on an opportunity to bring diverse functional and organizational capabilities to bear on a problem, and then apply this model across numerous threat networks, irrespective of the commodity the network moves. The expansion and convergence of global threat networks demand that we adapt, and the joint force is in the best position to lead that effort to shift the collective paradigm. We can bring great operational capacity

## CTN in Action

Operation *Gallant Phoenix* is a task force comprised of law enforcement, military, and intelligence professionals from the United States and over 20 partner nations. International and interagency mission partners are collocated in a fusion center where they benefit from the diversity of functional experts, a collective of legal authorities, and an environment conducive to real-time information-sharing. Stakeholders all share a common purpose and build enduring relationships based on trust. The operation leverages unique partner capabilities, authorities, and access in order to develop intelligence into usable information or unclassified legal process that enables partners to finish a target through the application of appropriate mechanisms. While the joint force leads and facilitates this model, the interagency and international partners are included at every opportunity to develop the greatest and broadest impacts against adversaries.

and a coalescing propensity to the table, laying the foundation for a formidable network of cross-functional partnerships. Some organizational introspection is certainly required before we can truly embrace a more integrated model. To prevail against our adversaries in this ubiquitous struggle, however, we need to be open about our limitations, address our shortcomings, and become comfortable with and proficient in our role as the best enabler we can be, propelling our partners to score the big wins. JFQ

## Notes

<sup>1</sup> Joint Publication 3-25, *Countering Threat Networks* (Washington, DC: The Joint Staff, December 21, 2016), 1-1.

<sup>2</sup> David A. Broyles and Brody Blankenship, *The Role of Special Operations Forces in Global Competition* (Arlington, VA: Center for Naval Analyses, April 2017).

<sup>3</sup> *Countering Threat Networks Study, Phase I Report* (Washington, DC: The Joint Staff, November 17, 2017, draft report ver. 7).

<sup>4</sup> The Office of Irregular Warfare team visited over 40 commands and organizations. Engagements with larger organizations generally included multiple discussions with subordinate staff elements to gain both executive and mid-level perspectives. The following lists many of the key engagements: U.S. Africa Command, U.S. Central Command, U.S. European Command, U.S. Northern Command, U.S. Pacific Command, U.S. Southern Command, U.S. Special Operations Command, Special Operations Command-Africa, Special Operations Command-Central,

Special Operations Command-Europe, Special Operations Command-North, Special Operations Command-Pacific, Special Operations Command-South, Central Intelligence Agency, Defense Intelligence Agency, Drug Enforcement Administration, Drug Enforcement Administration-Special Operations Division, Joint Special Operations Command, National Counter Terrorism Center, National Guard Bureau, Joint Task Force (JTF) Ares (U.S. Cyber Command), JTF-North, JTF-West (Department of Homeland Security), Joint Interagency Task Force (JIATF)-National Capital Region, JIATF-South, JIATF-West, Joint Improvised-Threat Defeat Organization, Joint Information Operations Warfare Center, Joint Intelligence Operations Center (U.S. Pacific Command), Joint Intelligence Operations Center-Europe, Global Engagement Center (Department of State), Narcotics and Transnational Crimes Support Center (Department of Defense), National Joint Terrorism Task Force (Federal Bureau of Investigation), National Targeting Center (Customs and Border Protection), Organized Crime and Drug Task Force (Department of Justice), Army Terrorism and Crime Investigative Unit, Center for Advanced Defense Studies, Counter-ISIL Finance Cell, El Paso Intelligence Center, National Intelligence University, Operation *Gallant Phoenix*, U.S. Council on Transnational Organized Crime.

<sup>5</sup> The Chairman of the Joint Chiefs of Staff's Five Priority Challenges: 4+1 refers to China, Russia, Iran, North Korea, and violent extremist organizations.

<sup>6</sup> *Countering Threat Networks Campaigning*, White Paper (Washington, DC: The Joint Staff, December 8, 2016).



General Joseph L. Votel, USA,  
Commander, U.S. Central Command

# An Interview with Joseph L. Votel

**JFQ:** You state that “by, with, and through” is not a doctrine, but more of an operational approach. Does there need to be a doctrine, or would that inhibit the flexibility of the approach?

**General Joseph L. Votel:** First, the way that I think of by, with, and through is

another way to talk about ends, ways, and means. I look at this idea as a way to approach some of this. That’s where we arrive at the discussion of by, with, and through as an operational approach. We apply it on a broad scale now, and I do think that it merits becoming doctrine. When there are not a lot of other things

going on in the world, we can afford to take a brigade and get it to focus on something unique and let it go. But given our commitments around the world right now, particularly on the Korean Peninsula, we really do need to make some investments in how we do this. I think what we’ve learned in [U.S. Central Command] is that the application of by, with, and through is really situation-dependent. There isn’t a one-size-fits-all model, but there are some basic precepts. Adding a little rigor would be helpful.

**JFQ:** Do you believe the current concept of the by, with, and through approach is broadly applicable to the point where the joint force should examine its DOTMLPF [doctrine, organization, training, materiel, leadership, personnel, and facilities] development?

**General Votel:** I do. The scale on which we’re doing this approach in the USCENTCOM AOR [area of responsibility] merits looking at it in a broad manner like DOTMLPF. With the Army standing up its Security Forces Assistance Brigade [SFAB], I think we see leadership aspects, equipping aspects, relationship-building aspects, and situational training—and the logistics aspects that go along with that—so I think that it is not a one-off, but requires a much broader approach to understand and implement.

**JFQ:** Who bears the cost of this approach?

**General Votel:** The Services. They certainly absorb a significant cost in their training base and force structure and all of the things that go along with that. But I think the combatant commanders also share a burden in this—informing the process and making it clear in terms of what we need out in the theater to do this and what the peculiarities are that ought to be driving this. There is certainly a shared responsibility between the combatant commands and Services. I acknowledge that the Services pick up the heavier burden on the development of the capability.

**JFQ:** What gaps do you see in the command to be able to meet this approach?

**General Votel:** One of the gaps is having the best-trained forces for the mission. Our approach in Iraq and Syria has been by, with, and through—and it has been advising. We have leveraged good people, really great officers, great NCOs [noncommissioned officers] who had to try to understand the situation and adapt to it as much as possible. What we ignored was all of the other stuff that went along with making this successful: How do our partners operate in a by, with, and through approach? How do they orchestrate communications? How are they tied into enabling capabilities to really make advise and assist work? There are some significant gaps in that. I think whenever we look at something like by, with, and through and we look at that as an extra duty or something that somebody morphs to in a combat situation, we are suboptimizing. Professionalizing the approach, “doctrinalizing” the approach, is an important step to take.

**JFQ:** If by, with, and through can be resource-intensive in training operations and it subordinates our interest, why is this the way forward?

**General Votel:** One of the key things we've learned about by, with, and through is that he who owns the effects owns the impact these operations generate. What we strive to do through this approach is to keep the ownership of the problem, and its aftermath, with the affected people. In Iraq, it's the Iraqi Security Forces, and in Syria, it's the Syrian Democratic Forces [SDF]. In many ways, that's the more burdensome aspect of military operations. How do we transition to local governance, local security for consolidation, stability, and reconstruction? The earlier we can get the local or host-nation forces involved, the better. That's really key. But to do that, the approach requires advisors in the right locations, sometimes fixed sites, sometimes with our partners forward. There are a variety of ways to do this. It really is about enabling them and making

them successful. As we often talk about it, in Iraq, our job was to help our partners fight—not fight for them. The capabilities to do that—whether it's ISR [intelligence, surveillance, reconnaissance], the intelligence system, targeting system, strike capability, or route clearance packages to move stuff around, plus medical capabilities to take care of our people and make sure we can respond—all have to be built into this approach, so it is not cheap. It is not an economy of force, but it does remove some of the aspects of us owning it as opposed to our partners owning it, which is what we want.

**JFQ:** How do you know you have arrived at “mission accomplished”?

**General Votel:** We have to identify end-states. For example, how do we know we've accomplished something in Raqqah, in northern Syria? We know because, in the wake of our operations, the Raqqah Civil Council, demographically representing the people, has emerged, and *they* are driving the majority of the stability operations. There is a Raqqah Internal Security Force designed not only to support stability operations but also to protect the population and prevent a resurgence of [the so-called Islamic State]. When we transition and see such indicators, that's what shows the approach worked. These types of overt indicators of ownership and moving forward with stabilization are the strongest signs of progress.

**JFQ:** In 2008, General [David D.] McKiernan's staff showed him a curve on how we were improving force structure for the Afghan police and army. It was a hyperbolic curve and at some point, the United States would depart, and the Afghans would have their own security. The problem was that they were never able to show they were making progress on the curve. Ultimately, the locals have to own this.

**General Votel:** That's right. One of the things we have to understand is that locals call the shots. In Iraq, we can have a view in our mind of what the campaign

looks like and how it should unfold, but ultimately, it's the prime minister and leadership who are going to make decisions. While in that case they were receptive to our advice, they didn't always take it in terms of where we should go now and where we should go next regarding the nature of types of operations we were doing. We have to recognize that they are calling the shots, and in the context of the broad campaign plan, we have to recognize the proper path to success, even if it's not the ideal path. We have to be willing to endorse that.

**JFQ:** How would you reconcile the competing national interests between the United States and its partners? When does this come into consideration when developing this relationship?

**General Votel:** In terms of balancing our interests versus their interests, [one way] might be in developing a partnership. First and foremost, it is about making sure we know what their true motives and intentions are—and in the areas where we diverge, making it clear the areas we can or cannot support. I think that's very important. One of the things we always talk about is the critical skills people need in order to apply this approach effectively. There are three of them. One, we have to communicate effectively with our partners—candidly and frankly—about the things happening and things we can and cannot do. Second, we have to build trusting relationships. This is the foundation of everything. They must be able to trust that we are going to follow through on commitments. Third, we have to develop an ability to provide advice. That's advisors providing advice at multiple levels. Those three attributes are important for forces and particularly for leaders in this environment.

**JFQ:** Are you able to get a sense of other nations' by, with, and through operations in your AOR, and how does this construct apply to operating within the coalition? In some cases, it is not a single country you are dealing with, but it's a group of countries.



Afghan National Security Forces role players talk to combat team leader assigned to 1<sup>st</sup> Security Force Assistance Brigade during simulated event at Joint Readiness Training Center, Fort Polk, Louisiana, January 13, 2018 (U.S. Army/Zoe Garbarino)

**General Votel:** With the coalition in Iraq and Syria, we have nearly 70 countries and entities involved. Everybody understands and gets the by, with, and through approach by combat advising, and they generally understand the concept. It is important to understand the various national caveats. There are national restrictions that countries put on their forces in terms of where they can operate or the type of operations they can do. I will refer back to the *Inherent Resolve* coalition in Iraq and Syria, understanding the strengths and the limitations—the caveats—for our partners was really important. And then being able to leverage those contributions in a way that kept them a part of the coalition in a valued way. We have nations whose contributions are key because they stay in fixed locations and do training for organizations we bring to those locations. This allows U.S. forces, once we understand coalition capabilities, to focus on the things they can do, which often is combat advising. Part and parcel are national authorities. Frankly, we've been well-supported in the authorities, so we want to employ the different parts of the coalition in optimal ways.

**JFQ:** *In the same vein, what do you consider a suitable partner to do by, with, and through? What are the national-level sensitivities under consideration? Can you take us through the calculus of your partnership with, for example, the Syrian Democratic Forces?*

**General Votel:** I think the SDF is a good example of how the by, with, and through operational approach works. We do have to go back to 2014 when we first had contact with the small Kurdish element around Kobani, with their backs against the border absorbing a vicious assault from the Islamic State at their prime—when they were powerful and moving to seize terrain. Our recognition of that element and our assistance to it in its breakout from Kobani was the start. From there, the fighters expanded into what had been historical Kurdish areas and we continued to support them. We learned this was a competent, well-led force. They were fighting on their own land, so they were motivated and organized with their own equipment and capabilities. They were receptive to support. As they

continued to gain momentum, it became apparent that this was something we could build on. We knew our Kurdish partners would need Arabs to operate in areas outside of traditional Kurdish lands. What we saw was a really interesting dynamic with Arab groups recognizing Kurdish success. We had this alignment that came together between Kurds and Arabs because they knew they were joining a successful organization. We built on this, which was about the time we began to recognize the nature of this organization isn't defined by ethnicity, but a common enemy—the Islamic State. That's how we ultimately partnered with the SDF.

Eventually, we pushed down into the areas with Arab majorities, and we saw the composition of the force change. It became more Arab than Kurdish. If we looked at the force that took Raqqah, an Arab city, it was about 80 percent Arab and 20 percent Kurd. Syrian Kurds always played a key role in leadership—one of their strengths. They communicated, they had a broader view, and they had good, solid coalition relationships. We build on that. They have been very receptive to the

advice and approach we recommended, which was the annihilation of the Islamic State, requiring a detailed clearance of these areas. This was something both of us wanted to do, so there was a natural and successful alignment.

Obviously, the friction has been with our [North Atlantic Treaty Organization] partner, Turkey. Turkey does not view the YPG [Yekîneyê Parastina Gel, or People's Protection Units] or the Syrian Kurds the same way. They view them as part of a broader terrorist group, the PKK [Partiya Karkerê Kurdistanê, or Kurdistan Workers' Party], which they've been fighting for a long time. Turkey has a legitimate concern about its border security, which goes toward understanding the dynamics and reconciling these as we go. We see this in activities going on today; this is not something completely resolved. It requires a careful and deliberate balance. Today, we have two principal objectives: Support Turkey in its legitimate concerns about its border security to protect it from terrorist organizations while, at the same time, complete the military defeat of the Islamic State. Balancing these requires a full-court press, not just militarily but also diplomatically and politically.

**JFQ:** How do you keep such a force from shifting its mission, such as from going against the Islamic State to doing something else counter to what the Syrian government might like?

**General Votel:** I think it goes back to communication and relationships and making sure we lay out the left and right limits of the relationship and what we are willing to do. We had to make some things very clear with our partners; we would not support operations against the regime. That was not our mission. Our mission is to defeat the Islamic State. We would not support the unilateral political ideas they wanted outside that mission. This requires constant discussion. We have tried to keep the focus on the defeat of the Islamic State. Keeping ourselves aligned on that has helped keep our partners aligned as well.

**JFQ:** How do your chosen partners gain legitimacy, especially after conflict, when the military element of national power has essentially completed its main task? How do you transition from a warfighting role back to peacetime?

**General Votel:** It goes back to legitimacy, and, certainly in Iraq, the government there has exerted its writ in these areas. What we look for is a transition after major combat operations have ended, with local governance stepping forward and local security coming into place. This is actually a little easier in a place like Iraq than it is in some other areas because there is a recognized sovereign government, there is a structure in place, and there are provincial, district, and local government structures. Where it does become more of a challenge are places like Syria or Yemen where we don't have those, and we have ungoverned spaces. Then we have [to] try to develop demographically appropriate local government structures. That's what we've tried to do, particularly in Syria. You can see this in Raqqah, Manbij, and Deir ez-Zor. In a number of other locations we see local governance structures stand up and take responsibility supported by local security forces. It's important to transition security responsibilities from the broader fighting force to local security forces focused on protecting the population and helping bring stability. It is a challenge in places where there isn't a recognized governance structure. While that may not be the final form that governance takes, in my view, it's how it begins and we have to build on that.

**JFQ:** From an American tactical point of view, how does the American unit deploying go from no understanding of by, with, and through to being ready to go forward and pick up where others left?

**General Votel:** That is a great question. I will just speak for my Service, the Army. We have done a really good job of this. When we identify replacement units, we often see leaders communicating back and forth to understand and gain situational awareness and an understanding of

the environment. Incoming leaders will monitor VTCs [video teleconferences] to get a head start. But the most important aspect is training. This is the doctrinal approach. A couple of weeks ago, the sergeant major and I visited the Fort Polk Joint Readiness Training Center to see the Army's first Security Forces Assistance Brigade going through training. What we saw was quite impressive. It was a purposely built exercise designed to create a number of situations and scenarios that these advising teams would experience. They do it multiple times, so they can learn, get after-action reports, and then move on to the next situation. Out of that training, the advisor teams begin to understand the basic precepts, the basic things they have to do. They start developing a capability before they actually deploy. This is the most important thing—to make sure we have a deliberate training path for our deploying forces. It also requires patience. You can't expect to go in and have relationships immediately; they have to be developed. Their approach may be a little different from ours, which requires patience.

**JFQ:** What about this approach would be applicable in some other way in a more conventional war? In any way does it diminish the ability to deter a conventional fight?

**General Votel:** I am sure it could. If we have just taken a U.S. infantry brigade and we have now given them an advise-and-assist mission, it is a leader-intensive approach. What we end up doing is paying the price in readiness for that organization. That is why it's so important for the Services to look at how we doctrinally and organizationally do this. The first SFAB is purposely organized. It is more efficient, and it is more effective as to what it's going to do. It will help the Army preserve readiness for the other things it needs to do.

**JFQ:** What have you seen in the evolution of by, with, and through in several theaters, that is, Iraq, Syria, and Afghanistan?



Syrian Democratic Forces trainees, representing equal amount of Arab and Kurdish volunteers, stand in formation at graduation ceremony in northern Syria, August 9, 2017 (U.S. Army/Mitchell Ryan)

**General Votel:** In our article [immediately following this interview], we talk about three examples. Yemen, Iraq and Syria, and Afghanistan. I am not so sure it is as much about evolving as about adapting. If we look at a place like Yemen, our interests are principally focused on CT [counterterrorism]. It just so happens there are Arab nations down there that share the same objectives. They have relationships with Yemen forces on the ground. What we see is an approach using unique U.S.-enablers. We are providing advise and assist to Arab partners who, in turn, are providing advise and assist to Yemen partners. Again, we are drawing on their language capabilities, their cultural sensitivity, their deep understanding of tribes and history, to help them do the CT mission. At the same time, we bring our capabilities. That has helped build the capability of our Arab partners. Yemen presents a unique hybrid approach where we enable a partner, who in turn, enables another partner. We have had some success.

In Iraq, there is an established army that, when we left in 2011, had been trained largely in counterinsurgency. In 2014–2015, they found themselves in major combat operations. Their training and development had to change. We had to make them into a force that could go in and do a 9-month operation in a city of nearly 2 million people, Mosul, and be able to sustain. That required a different approach. Now that Islamic State-controlled territory has been liberated, we are going back to ensure they cannot reemerge. We are moving from a force doing major urban combat operations to one doing wide-area security. We have to be adaptable and help our partners. The good thing is we did all of that against the backdrop of an established military that had a Ministry of Defense, processes, schools, and camps that we could leverage.

In Syria, we are working with a completely indigenous capability that does not have the backing of a state and is very localized. This requires a different approach. We have to build some institutional capability, places where we can

train and organize, bringing together a number of different entities in order to create this hybrid organization we have referred to as the SDF. In Lebanon, where we work with the Lebanese Armed Forces, we take a different approach, mostly focused on training and developing processes and capabilities to make them able to conduct operations as opposed to U.S. forces being with them. The approach is adaptive in the sense that we are learning more about the underpinnings and precepts of by, with, and through. Adaptability is being able to understand our partners, the environment, the objectives, and then being able to devise the optimized approach.

*JFQ: I would like to talk about Afghanistan. What hope do you have this approach will improve our chances of getting to some sort of peaceful resolution?*

**General Votel:** I am always hopeful. Regarding our advisory efforts, what we are building on is an investment over a long period of time in the Afghan National Security Forces. We are building on some exquisite capabilities they have. The Afghan special operations capability is first class. They are effective. They rely on the coalition to help them, but they are aggressive, and, frankly, they have not lost a fight—and they are doing the majority of it. We are building on that, we are expanding that capability, and we will continue to provide advisory capability to them at a tactical level that will help them stay that way. The broader Afghan forces have improved as well. They are offense-oriented, and the leadership in charge of them is much younger. They have trained under a Western standard, as opposed to a mujahideen or an old Soviet model. There is a generational change of leadership here that is much more accepting of the type of warfare we're teaching. We have things like the Afghan Air Force. It is small, it is capable, and it is growing. I would not want people to think the advisory capability is all about the ground; it is also about the air. If you want to see Afghans really happy, it is when their A29s are supporting their forces. This is success.

It also translates to the maritime environment, such as the work we do with some of the coastal forces in the Arabian Gulf.

**JFQ:** *Are there cyber and information-sharing challenges with this approach?*

**General Votel:** There are cyber security challenges in technology and certainly in the information- and intelligence-sharing areas. We have made improvements over time, but we have a long way to go. I would share with you that recently we concluded a CIS-MOA [Communications and Information Security Memorandum of Agreement] with the Egyptians that allows us to have commonality with information processes. This is a pretty big deal. It has taken us 20 to 25 years to get in place. This will be a watershed for us. We have to recognize some of our really good partners still communicate over unsecured, unclassified Internet. That is how they pass their information, and we are trying to interface with that. That poses a significant challenge.

The sharing of information through technology is important. If we looked at some of our teams forward, we would see a lot of tablets and technology, and that is how we are communicating. There is a training aspect to this, and there is a network aspect. We have a lot of bilateral relationships. Sometimes these relationships do not work as well in a coalition where we have many partners. This is an area where we do have to continue to work to reduce the obstacles and frictions. There are good reasons why we have these prohibitions and other sharing arrangements in place. We should have those. But we have to recognize when we principally rely on a by, with, and through approach, part of that is to enable our partners with intelligence.

When I went to talk with [Colonel J. Patrick] Work, who led our advisory team in Mosul, about his concerns, he discussed managing bandwidth and power—power generation for their teams. Our teams are mobile and forward, and we had to get power generation capacity to them. (By the way, we have to make sure we logically support

all of our forces over a broad area.) We also need to take care of them medically. These things add up. This is the cost we pay for any military operation. Soldiers still have to eat and move, even with a by, with, and through operational approach.

**JFQ:** *Is this just SOF [special operations forces] on steroids? How is this different from proxy warfare?*

**General Votel:** I do not think so. We have drawn on the SOF experience of the Green Berets. This has been part and parcel of their mission since they have come into existence, so they have developed some doctrines, some real keen approaches, and we should leverage those. When we look at an organization like the Iraqi army, we simply do not have enough SOF elements to meet all of the partnering needs. We have to rely on our conventional forces. It is not a replication of SOF; it is an operational approach we are applying in different areas.

**JFQ:** *What about the role of women? Several of the female commanders of the SDF are brigade commanders of those units doing the fighting. In the future of by, with, and through, do you see more roles for female infantry commanders?*

**General Votel:** This is important. It took us a little while to recognize that we were missing 50 percent of the population because we did not have anybody who could communicate with women and children or communicate our objectives effectively. As we set up the Cultural Support Team and Marine Lioness programs, we basically increased our ability to talk to the people, and we doubled it immediately because we could talk with everybody. The role of women commanders in the SDF is prominent, and, moreover, the lead commanders in several of these prominent areas were women. I do not necessarily know we have to correspondingly have a female advisor do that, but it does require an understanding of the culture. We have had some effective programs with the Afghans, helping

them develop their Cultural Support Teams and professionally develop some of the women in these organizations. The program has been well accepted and sustained. In my last AOR trip, which I do every month, we spent some time in Jordan. One of the events I went to was our delivery of the top-of-the-line UH-60 Blackhawk helicopters. They had a demonstration as part of the ceremony, and they had some of their pilots standing by, and they were proud of the fact that two of the pilots in these cutting-edge helicopters are women. They see that and embrace it themselves. I think it is an important thing to reinforce.

Our partners also emulate us. One of the key things we do and that comes out in our by, with, and through approach is the example we set of professionalism, the example we set of values-based approaches to the things we do. I have had partners tell me they want us to come and help them with an operation. When I ask them why, they say we bring a level of legitimacy, and they know we are going to hold them to a high standard, and they will be better for it. I do not think we can underestimate what may be perceived as an intangible aspect of these relationships. Our partners do emulate us without necessarily trying to recreate us in their own image.

**JFQ:** *Do you have any closing remarks?*

**General Votel:** Thanks, Bill. We appreciate your coming down and supporting us. This is a unique way of approaching operations, particularly in USCENTCOM. Even as good as we are, we cannot replicate what our partners bring. The idea of by, with, and through is one that resonates in this area. It has become the principal way we approach things. We need to begin a professional discussion of this and share ideas. Ultimately, the Services will have to want this and buy into it. Part of my responsibility, part of my burden, is to contribute to the intellectual discussion of this approach. That is what *Joint Force Quarterly* is helping us do right now. We are very grateful for that. JFQ



Explosive Ordnance Disposal Technician assigned to Commander, Task Group 56.1, explains underwater navigation system to Kuwait naval force technicians during training evolution as part of exercise Eager Response 18, Mohammed Al-Ahmad Naval Base, Kuwait, January 8, 2018 (U.S. Navy/Louis Rojas)

# The By-With-Through Operational Approach

By Joseph L. Votel and Eero R. Keravuori

*Our approach is by, with, and through our Allies, so that they own these spaces and the U.S. does not.*

—SECRETARY JAMES N. MATTIS

The U.S. Central Command (USCENTCOM) definition of the *by-with-through* (BWT) operational approach is that operations are led by our partners, state or nonstate, with enabling support from the United States or U.S.-led coalitions, and

through U.S. authorities and partner agreements. By, with, and through has proved agile, adaptive, and tailororable in pursuing American interests in the USCENTCOM area of responsibility (AOR). Moreover, this approach will become increasingly useful *globally* in a complex, resource-constrained environment with advantages from use before, during, and after conflict. The U.S. military must organize, resource, and train the joint force to operate by, with, and through with greater efficiency and effectiveness with various types of partners and whole-of-government involvement. Executing this approach in current and future multipolar and resource-constrained environments requires common understanding and the development of joint force doctrine.

## Overview

Regional conflicts can arise when state or nonstate actors do not have the capacity and resources to resolve their

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conflicts locally, potentially putting U.S. interests in the region at risk. Traditional U.S. military solutions can inhibit local responsibility for resolving those problems and may even provide opportunities for adversaries to challenge and reverse the legitimacy of “foreign power” solutions. Also, despite an invitation of the host government, a large and protracted U.S. military presence is often perceived as an invasion or an occupation by significant numbers of the host-country’s citizens. Aware of these challenges, Secretary of Defense James Mattis stated, “U.S. forces have evolved to work by, with, and through our allies”<sup>1</sup> and would defeat the so-called Islamic State (IS) “by, with, and through other nations.”<sup>2</sup> The current USCENTCOM *Theater Strategy* states, “‘by, with and through’ is an important component of our strategic approach,”<sup>3</sup> and “we choose to prevail ‘by, with and through’ . . . nations that share our interests.”<sup>4</sup>

As this approach gains increasing usage, it is important to address what it entails and its implications for the joint force. The phrase has many potential interpretations; therefore, along with the definition above, a conceptual framing of its meaning is necessary. The BWT operational approach seeks to achieve U.S. national interests by engaging and enabling partners’ local and regional capabilities and leadership. Through American authorities and partner agreements, joint force enablers can support, organize, train, equip, build/rebuild, and advise partners’ security forces and their supporting institutions from the tactical to ministerial levels.

By, with, and through is not yet a doctrine or a strategy or a formal military program. Instead, it is considered an operational approach to be used during the course of security cooperation activities or military campaigns. The approach pursues more culturally acceptable and durable solutions by developing and supporting partner participation and operational ownership. By, with, and through is a way of conducting military activities and operations with less direct combat employment of U.S. forces.

Although for USCENTCOM it is militarily focused, by, with, and through complements the whole-of-government approach to regional conflicts that implicate U.S. national interests.

With this definition and broad concept, the discussion is presented in two parts. In the first part, several USCENTCOM examples are discussed to develop a better understanding of the BWT approach. These examples assist the explanation of essential components in decisions on where, when, with whom, and how the BWT approach is used. Based on USCENTCOM experience, the second part identifies strategic and operational selection criteria, advantages, and risks that must be considered at the onset and reassessed throughout execution. Ultimately, how this approach impacts the joint force and considerations for current and future doctrine and readiness are presented.

## The USCENTCOM AOR

Current examples in the USCENTCOM AOR of BWT operational approaches include:

- Multilayered approach to counterterrorism in Yemen
- U.S. Forces–Afghanistan’s Operation *Freedom’s Sentinel* (OFS)
- North Atlantic Treaty Organization (NATO) Operation *Resolute Support* (ORS) in Afghanistan
- Operation *Inherent Resolve* (OIR) in the campaign against IS.

After several interviews and discussions with the leadership involved in these operations, the recognized value of a BWT operational approach is consistent, as are some of the concerns. The composition and application of U.S. support to each of these conflicts are not identical. In each, U.S. force structure and employment reflect the agile and tailororable nature of a BWT approach and illustrate the unique challenges that develop in the various conflicts.

**Yemen.** Before exploring larger scale efforts in Afghanistan, Iraq, and Syria, it is worth exploring the operational approach supporting counterterrorism

in Yemen. The BWT approach in this case is a hybrid or multilayered example involving a stable ally as the regional partner, who in turn is enabling a local partner in Yemen. This is also an example of using the BWT operational approach in support of aligned regional interests: countering al Qaeda in the Arabian Peninsula (AQAP). Specifically, the United States contributes counterterrorism advising, intelligence, and logistics capabilities to the UAE as part of an Arab coalition targeting AQAP in Yemen.<sup>5</sup> In an additional layer, U.S. military support enables UAE, with its greater cultural, historical, and tribal knowledge, in its own BWT approach to enhance the capabilities of local Yemeni counterterrorism forces in the common fight against AQAP.<sup>6</sup> Supporting allied missions by, with, and through our regional partners is one way to secure common interests and share responsibility and resource burdens. Furthermore, it exemplifies how the joint force could use the approach to reassure and strengthen existing alliances and deepen interoperability as envisioned in the 2018 National Defense Strategy.<sup>7</sup>

**Afghanistan.** Contrastingly, the Afghanistan mission gradually evolved into a BWT approach as recognition of the need for domestic legitimacy and ownership increased. In 2001, the United States entered Afghanistan to destroy al Qaeda and defeat the Taliban without an accurate appreciation for the Afghans’ capacity to retain these gains.<sup>8</sup> General Stanley McChrystal, USA (Ret.), reflected that in Afghanistan, as in Vietnam, the adversary was able to ratchet up and down both the size and composition of its forces to counter U.S. strengths. The U.S. military was employing greater numbers of conventional forces and gaining increasing ownership of the problem.<sup>9</sup> In Afghanistan, this cycle culminated with the conclusion of Operation *Enduring Freedom* and the start of OFS and ORS, both taking a BWT approach to the problem.

ORS is established under a Status of Forces Agreement (SOFA) between the Afghanistan government and NATO. The SOFA authorizes NATO forces to provide noncombat training, advising,

and assistance to the Afghan National Defense and Security Forces (ANDSF).<sup>10</sup> The United Nations Security Council adopted Resolution 2189, welcoming ORS as an expression of the international commitment to Afghanistan stability and the financial sustainment of the ANDSF through 2020.<sup>11</sup> The execution of the current BWT approach in support of the ANDSF fosters domestic legitimacy and ownership of Afghan security by its indigenous security institutions and bolsters international legitimacy for the mission.

Even so, in 2016 and 2017, it was recognized that the mission and ANDSF were still facing challenges in maintaining consistent progress against the Taliban. Several of the commanders we interviewed, with multiple tours in Iraq and Afghanistan, noted that the limited military progress of a BWT approach was not based on the method but on the means. The preponderance of USCENTCOM enablers were committed to the priority mission in Iraq and Syria, and the mission in Afghanistan was conducted as an economy of force.<sup>12</sup> Senior leaders determined that, in order to achieve more durable operational success, advisor teams were needed at lower headquarters echelons of the ANDSDF. While defeating the IS remained the priority, there were not more advising and enabling forces for the Afghanistan mission. Additionally, the SOFA initially limited advising to the ANDSF corps or corps-equivalent level.<sup>13</sup> In a unilateral approach, the change in advising levels would simply be a subject of resource availability. In a BWT approach that included a host-nation partner and broad coalition of NATO Allies and partners, additional negotiation to modify the NATO and U.S. bilateral agreements with Afghanistan, and revision of coalition governments' commitments to ORS, were necessary preconditions to increase advising and enabling resources.

The BWT operational approach is adaptive to evolving operational and tactical conditions as well as the partner's capabilities and limitations. In Iraq, U.S. and coalition forces had reevaluated the location and echelon of their support. The result was the transition from static

forward operating base advise-and-assist programs to expeditionary advising programs that accompanied Iraqi Security Forces into its operations to liberate Iraqi territory. Similarly, U.S. and coalition special operations forces (SOF) in Syria operated near the forward line of troops with the partner unit of action. In Iraq, force-protection concerns initially limited the influence that our enablers could provide.<sup>14</sup> It is now recognized that partnering at the right level with the unit of action creates better use and influence from the enabling assets.

In the USCENTCOM AOR, this is often, but not always, at the brigade level. Advising with a broader set of expertise and down to the *kandak* (battalion) level in Afghanistan will be the third evolution of this lesson, integrating the support into echelons closer to the unit of action to create even more proficiency and efficiency from a BWT approach. The impending military defeat of IS in Iraq and Syria, and the subsequent availability of enabling capabilities, allows for prioritizing resource increases in Afghanistan. With increased enabling resources at lower levels, the Afghanistan operational realignment aims to further capitalize on the BWT approach and help the ANDSF better secure the gains on the ground.

**OIR.** While U.S. involvement in Iraq started in a similar way to Afghanistan, the operation against IS represents a distinct change from the preceding operations. The BWT approach included ground combat by Iraqi Security Forces (ISF) and Syrian Democratic Forces (SDF) supported by a 60-country U.S.-led coalition. The coalition role included building partner capacity for ground combat and advise, assist, accompany, and enable missions. Additionally, coalition fires and precision airstrikes targeted all aspects of IS leadership, formations, infrastructure, and resources. Backing all this was joint sustainment, communication, and intelligence, surveillance, and reconnaissance forces and assets.

**Iraq.** In Iraq, with the U.S. announcement of OIR in 2014, the United States also announced that the coalition there would be supporting, not directing, operational objectives. This was a

significant change from the previous military involvement. As Brigadier General John Richardson points out, in 2008 the U.S. military was still telling the Iraqi military what to do and when to do it, even when the Iraqis were the lead element. Although the United States and its coalition partners were building ISF capacity, their ownership of the conflict was inhibited by our lack of tactical patience to let them lead.<sup>15</sup> Lieutenant General Stephen Townsend further notes that in 2007, the Iraqis did not ask for the surge of U.S. troops to fight the insurgency. In 2014, by comparison, the Iraqi government asked the world for help. The difference in operational success, Lieutenant General Townsend states, was not in ISF capability from 2007 to 2014. No Iraqi unit was fully manned, equipped, or trained in 2014, but in marked contrast with the Iraqi units of 2007, many units partnered with U.S.-coalition enablers were now fully willing to fight.<sup>16</sup> The alignment of interest, their confidence in our support, and the investment of the host nation have been key to this change.

Iraq also serves as an example that the BWT approach is not inexpensive and not necessarily less resource-intensive regarding enabling support than a comparable unilateral action undertaken by the U.S. joint force. The capacity of the partner and type and stage of conflict determine the enabling resource requirements. Operations like Iraq, Syria, or Afghanistan, however, require a sufficient level of resources for the problem to both provide the partner an operational advantage and sustain it until conflict termination. Thus, the appropriate mix and availability from a large spectrum of enablers including airpower, artillery, intelligence, cyber, and sustainment, as well as possible civil, infrastructure, and humanitarian capacities, need to be considered before taking a BWT operational approach.<sup>17</sup> In supporting the ISF joint force, the cost included persistent overwhelming support from all those capabilities in higher levels to compensate for the developing ground force capabilities and longer operational timelines. The resourcing cost was high, but considered acceptable given the increased partner



Iraqi soldier assigned to 7<sup>th</sup> Iraqi army division participates in assault movement training at Al Asad Air Base, Iraq, January 13, 2017, as part of Combined Joint Task Force—Operation *Inherent Resolve* (U.S. Army/Lisa Soy)

confidence, ownership, and success and the much-diminished risk of U.S. casualties.

Just as the partnerships may need initial robust support as in Iraq, or right-sizing increases in U.S. and coalition advisor teams as in Afghanistan, there can also be a transition to decreased numbers. As mentioned, with the military successes in Iraq, the need for U.S. forces partnering below the division level is diminishing.<sup>18</sup> Compared to Operation *Iraqi Freedom* and Operation *Enduring Freedom* missions that debated the amount and length of U.S. force presence needed for long-term stability, in OIR the domestic Iraqi forces are the hold, build, and stabilize forces that can remain indefinitely. As this continues, the transition from the BWT operational approach suggests evolving from a BWT partnership for a specific interest to a traditional

military-to-military partnership for a range of common interests.<sup>19</sup>

**Syria.** A significant difference in the BWT approach from Iraq to Syria is the availability of a host-nation state partner. The United States and its coalition partners determined that the Syrian regime was either unwilling or unable to prevent IS from launching attacks against Iraq, the United States, and its coalition partners from within Syrian territory. Because cooperation with the Syrian regime was politically untenable to the United States and its partners, the coalition had to turn to other actors on the Syrian civil war battlefield. The considerations of suitable partners having aligned interests meant differentiating those forces seeking U.S. assistance in the civil war from those willing to focus on defeating IS. Congress provided the executive branch the initial Syrian Train and Equip authorities,<sup>20</sup> allowing the military to start a transactional

relationship with moderate and vetted armed Syrian opposition groups that pledged to fight against IS rather than the Syrian regime. This difference—partnering with a nonstate armed group rather than a partner-nation's armed forces—required a different supporting force structure to enable the vetted Syrian opposition light infantry capabilities rather than Iraq's joint force capabilities. The lack of host-government support complicated logistical support and U.S. and coalition force protection, putting a greater reliance on SOF trainers and advisors, air support, and transfers of arms and equipment to the SDF.

While a BWT approach generates greater domestic legitimacy for the partner, the lack of U.S. short- and long-term operational control over the partner and its agenda can have strategic concerns. Partnering with the SDF, led largely by Syrian Kurds, created strategic stress with

Turkey, which is only magnified by the notion of SDF ownership versus U.S. control. It also presents an ongoing political challenge to the legitimacy for U.S. involvement from the Syrian regime and its partners.

In Syria, the partnership with the SDF is pragmatically focused on the defeat of IS. The SDF's legal status under international law and in juxtaposition to the Syrian regime limits the evolution of the partnership as compared with Iraq and the government's ISF. This is not meant to imply that future partnerships are not possible with nonstate groups like the SDF; rather it implies that these partnerships support distinct U.S. interests with appropriate authorities and policies. In Syria, the United States did not select a BWT approach simply to develop an indigenous partner. It did so because it was a more effective operational approach to degrade, defeat, and destroy IS in a country that the United States had no diplomatic relationship with.

**Host Legitimacy.** In all three cases, military gains made in support of U.S. interests are not secure if they rely solely on military partnership. As pointed out in *Building Armies, Building Nations*, the development and support of the military, and the resulting legitimacy through ownership and success in the conflict, are not sufficient by themselves for long-term nation-building or stability. The host-partner military needs development of its role as a bridge to a national identity.<sup>21</sup> This resonates with Secretary Mattis's assertion that the American example of military and civic leadership in shaping partners' views of social responsibility is as important as the technical proficiency.<sup>22</sup> To foster this potential, the whole-of-government participation in a BWT approach should be sought from the onset. According to Lieutenant General Terry Wolff, USA (Ret.), the hard-won legitimacy of the ISF and government of Iraq will not last in the liberated areas if they are not able to turn on the lights, get the water flowing, or open the schools in a popularly acceptable timeframe.<sup>23</sup>

**U.S. and International Interests.** Another factor existing in all of these

partnerships is the limited scope of military interest and the tenuous nature of the success. For instance, in Syria, the SDF faces uncertain domestic security due to political, ethnic, and historical tensions separate from IS. Military actions to address these sources of domestic SDF security exceed U.S. and coalition authorities, which are focused on the defeat of IS. This keeps the partnership transactional and risks a divergence of interests. In Iraq, internal domestic concerns, including Iranian influence and Kurdish autonomy, are reminders that the military BWT operational approach cannot overcome all of the domestic tensions or issues that may have led to or exacerbated the conditions that generated IS. There is also a need for interagency and international involvement on the ground. In Afghanistan, the competing pressures from Pakistan, Russia, and domestic power competitions are somewhat more balanced by a more robust international commitment. Governmental and international efforts need to join early on and follow through beyond the limited military role to diminish the risk posed by rogue or revisionist actors.

## Future Considerations

The BWT operational approach and the examples of its current employment in the USCENTCOM AOR reveal that it encompasses a spectrum of characteristics. One end of the spectrum is the realm of low-visibility advisory assistance by small teams, with limited enablers, partnering with small groups of indigenous actors like the counterterrorism support in Yemen. As the conflict intensifies, U.S. involvement becomes increasingly more overt. The supporting leadership mix shifts from unconventional warfare, irregular warfare, and counterterrorism experts to more counterinsurgency, foreign internal defense, and conventional offensive warfare units and leaders in increasing numbers, as seen in Iraq and Afghanistan. Also increasing with expanded U.S. involvement are the number of joint force resources like fires, intelligence, and sustainment. Finally, the degree of whole-of-govern-

ment involvement, as well as the size and nature of the partner up to the host country government, are considered.

**Domestic Concerns.** These concerns are paired with factors determined from the specific conflict situation, including the type and stage of the conflict or threat, availability of partners and their current contribution or capacity, and regional and international involvement.<sup>24</sup> An evaluation of the stage of conflict and the capacity of the partner assist in determining the appropriate type of activity required. This may include any range of operations from building partner capacity and security force assistance to counterinsurgency and foreign internal defense to offensive counterterrorism operations. This also provides clarity to the most constraining factor, which is the required supporting forces and sustainment levels needed to ensure the host partner's progress, parity, or overmatch—and ultimately secure the shared U.S. interest.

The U.S. national interests at stake are determinants of where the joint force operates along these spectra. These concerns center on the value of the endstate of the conflict to U.S. national interests and the immediacy required. When the United States is facing an existential threat, the BWT operational approach is not suitable due to its risks from partner, rather than U.S., ownership of the outcome.<sup>25</sup> Similarly, if there is a vital national interest regarding how and when the conflict is concluded, then by, with, and through may again not be recommended.<sup>26</sup>

Another factor is the level and leadership by the Armed Forces in consideration of the political sensitivity of U.S. involvement and the type of conflict. This factor helps define the intended visibility of the American role (from limited to overt), SOF and conventional force mixture, number and type of enablers, and extent of other U.S. agency involvement. In times of political constraint, providing only U.S. military supporting capabilities reduces the political tension of employing significant frontline combat forces. With effective leadership and support, this may allow addressing interests that would be less accessible through other approaches.



Marines with 3<sup>rd</sup> Battalion, 7<sup>th</sup> Marine Regiment, Special Purpose Marine Air-Ground Task Force—Crisis Response—Central Command, conduct Tactical Recovery of Aircraft and Personnel exercise, October 8, 2016 (U.S. Marine Corps/Trever Statz)

**Leadership.** A significant advantage of a BWT operational approach is host-partner ownership and durable outcome supporting U.S. national interests. To achieve this outcome, a BWT approach requires a leadership actively engaged in sourcing and coordinating the enabling resources and advising as a trusted agent, while allowing host partners to control employment, timelines, and direction.<sup>27</sup> This type of supporting leadership from the United States leverages the capabilities that host nations have and the primary leadership they can contribute. This was the case in Iraq, where the Iraqis, with increasing confidence in committed support, selected other routes, objectives, and timelines of their own choosing rather than only those preferred by the United States. Accepting host state or nonstate leaders' ownership of the fight reveals the commitment and risk tolerance of host forces in meeting their own and U.S. interests. This is essential for legitimacy with the people, one of the shared advantages of a BWT approach, especially in counter-insurgency scenarios.<sup>28</sup>

Empowering the partner leadership in this way, however, creates risk to U.S. objectives and operational timelines.

The mitigating factors begin with first finding a willing and capable partner and ensuring aligned interests. Second is sustaining a committed, reliable, and durable supporting and enabling presence.<sup>29</sup> Through the provision of sound advice and reliable application of resources and enablers, the American leaders involved provide tangible value to the partner nation, thereby allowing the development of trust and influence on the alignment of interests.<sup>30</sup>

Having the right quality of leaders for this approach is essential. Lieutenant General Stephen Townsend, USA, considers that leaders must first be experts in their field, whether that is direct action, fires, intelligence preparation of the battlefield, or sustainment, and also be comfortable in a mission command role without traditional mission control.<sup>31</sup> Those commanders interviewed contend that the experience in a supporting and advising role relied heavily on and complemented rather than degraded their primary wartime training. USCENTCOM Command Sergeant Major William Thetford, USA, noted that significant reliance on mission command and relationship-building in smaller

dispersed formations in the SFAB would also require high performing noncommissioned officers.<sup>32</sup>

Lieutenant General William Beydler, commander of Marine Corps Forces Central Command, commented that the 4-month Marine Expeditionary Unit rotation cycle approach does not match up with the importance of relationships.<sup>33</sup> A service force management process that allows a persistent unit alignment, as with SOF teams being sent back to the same location, as suggested by Special Operations Command Central Command Sergeant Major Marc Eckard, USA, is another possible way to address this challenge.<sup>34</sup> Finally, the naval perspective provided by U.S. Naval Forces Central Command commander Vice Admiral John Aquilino is that information-sharing in the maritime domain is possible, but it is much harder to advise and assist on someone else's bridge.<sup>35</sup>

Regarding leadership characteristics, Colonel Patrick Work's Mosul experience highlighted anticipation, agility, and inquisitiveness as traits that improved the support provided and the influence gained during this approach.<sup>36</sup> Training for these and other necessary characteristics like

historical context, language, and culture are more common for SOF, but are no less important when conventional forces are employed. This also includes the potential of focusing military leaders' careers on developing relationships with regional security partners and with regionally focused interagency counterparts. The force will also need to develop ways to reward this type of leader development.<sup>37</sup>

**Sustainment and Enablers.** Another area that impacts the success of the approach is sustainment of the host and the enablers. Lieutenant General Michael Garrett, U.S. Army Central commander, notes that, at equivalent levels, the sustainment force is not organized to support the broadly dispersed footprint of a Brigade Combat Team in this approach.<sup>38</sup> USCENTCOM's J4, Major General Edward Dorman, USA, commented that earlier involvement in sustainment partnerships needs consideration for operationally effective support, resource management, and longer term outcomes.<sup>39</sup>

The BWT approach is often mistaken for an inexpensive approach to warfare. This is a misperception. This approach still requires significant financial expenditure. Reducing the use of U.S. forces for direct combat operations creates less control of the timelines and decreased efficiency of resource expenditure. Therefore, the duration of the conflict and amount of resource consumption are potential strategic risks to joint force readiness in general and carry broader U.S. economic implications that must be mitigated. This requires continual vigilance of resource consumption, since, as the USCENTCOM J5, Major General George Smith, USMC, cautioned, trading tactical risks for strategic ones is not a viable long-term plan.<sup>40</sup>

The joint force can react and adapt to meet the needs of a BWT approach when there are limited competing requirements and the force is given enough time. Creating a sustained capability requires developing the requisite capacities within the components and a complementary joint doctrine. The Army SFAB and Field Manual 3-07.1, *Security Force Assistance*, provide a conceptual starting point for components for the advising role.

Lieutenant General Jeffrey Harrigian, the U.S. Air Force's Central Command commander, noted that an equivalent structure does not exist in the Air Force and that training an indigenous air force has significantly longer timelines.<sup>41</sup>

Another component of risk is the lethal threats to employed enablers. Enablers from the joint force may include sustainment and mobility; intelligence, surveillance, and reconnaissance; and kinetic and nonlethal fires. These enablers allow our partners to sustain themselves in the conflict. When provided with American leadership and commitment, U.S. partners have demonstrated increased confidence and determination to prevail. While this often lowers the risk from employment of a comparable number of U.S. frontline ground combatants, the lethal risk to the various types of aircraft enablers, logistics operations, and advisers remains significant.<sup>42</sup>

In interviews and discussions, important considerations were voiced suggesting that adversaries will seek ways to adapt to and counter this approach. To begin, Lieutenant General Harrigian describes the enabling mission and associated decreased risk as relying on the assumption of air superiority, which is no longer a certainty.<sup>43</sup> It is in a contested air domain where adversary airpower may disrupt the supply lines or degrade other supporting forces' freedom of maneuver. Secretary Mattis takes a position in his *Summary of the 2018 National Defense Strategy* that every domain is now contested.<sup>44</sup> The joint force must factor in this state of domains with expected adaptations by adversaries to degrade the BWT approach and associated exposure to enablers.

**Authorities and Doctrine.** All of this requires the appropriate legal framework and authorities for partnering and resourcing. A major risk is that permanent statutory authorities do not exist to enable partner forces in this kind of conflict. Colonel Matthew Grant, USA, USCENTCOM Judge Advocate, expressed how specific legislation to provision regular and irregular forces in Iraq, Syria, and Afghanistan was required in each case—and the authorities in each instance were tailored to the particular

operational circumstances and congressional concerns. As the specific situation develops and support required changes, however, new or revised authorities may be necessary. Congress does not operate at the speed of war, creating a lag between need and the legislative solution. This presents a further requirement on commanders and planners to anticipate evolutions of enabling requirements and advocate early for the necessary authorities.

Further complicating this risk is the lack of joint doctrine supporting a BWT operational approach. There is need for doctrine concerning large-scale conventional forces conducting operations that include security force assistance; building partner capacity from the ministerial to tactical levels; and various mixes of train, advise, assist, accompany, and enable missions.<sup>45</sup>

With whom to partner our resources carries significant implications for the U.S. authorities granted, military requirements, securing U.S. interest, and endstate or transition. Ultimately, the partnerships in a BWT approach change when U.S. interests are secured or diverge from the partner's interest. The potential follow-on relationship depends on the nature of the partner, success of the partnership, and subsequent U.S. interests. Transition following from BWT partnerships augmenting stable ally states, such as the U.S. relationship with the UAE concerning Yemen, may be the most straightforward. Highly transactional relationships with nonstate actors remain the more challenging to transition without authorities or policies that follow through. Finally, all the examples of conflicts and partners require avoiding the development of dependencies and recognizing mission limitations and mission accomplishment.

## Concluding Imperative

The U.S. military has a significant role in securing and maintaining American national interests. The BWT operational approach identifies partners with specific shared interests, preferably held by them at an equal or higher national value. The U.S. joint force leverages

the partner's leadership and increases its capacity and ownership for greater legitimacy and durability of the outcome. This approach, done with the purpose of securing and maintaining U.S. and partner shared interests through shared responsibility and shared burdens, creates opportunities to strengthen allies and develop partnerships with future allies.

Current conflicts benefit from relatively long learning curves in Iraq and Afghanistan. This makes it more important for future conflicts, without the benefit of a decade of learning by experience, to capture the best practices and lessons learned for how the joint force successfully employs this approach.

To capitalize on this approach, the joint force must deliberately engage in developing doctrine for the partnering, resourcing, organizing, educating, training, and transitioning in a BWT operational approach. The integration of this approach with other military doctrine and interagency contributions needs effort as well. By, with, and through is a valuable addition and complement, not a replacement, to other tools in the joint force arsenal. Considering the environment laid out in the 2018 National Defense Strategy, the professional intellectual rigor spent to this end will have compounding positive impacts in developing a lethal, agile, and resilient force posture and employment. JFQ

## Notes

<sup>1</sup> Cheryl Pellerin, "Mattis Highlights Working By, With, Through Allies," *Defense.gov*, October 12, 2017, available at <[www.defense.gov/News/Article/Article/1340562/mattis-highlights-working-by-with-through-allies/](http://www.defense.gov/News/Article/Article/1340562/mattis-highlights-working-by-with-through-allies/)>.

<sup>2</sup> James N. Mattis, "Transcript: Defense Secretary James Mattis on 'Face the Nation,'" May 28, 2017, available at <[www.cbsnews.com/news/transcript-defense-secretary-james-mattis-on-face-the-nation-may-28-2017/](http://www.cbsnews.com/news/transcript-defense-secretary-james-mattis-on-face-the-nation-may-28-2017/)>.

<sup>3</sup> General Joseph L. Votel, USA, *Theater Strategy* (MacDill Air Force Base, FL: U.S. Central Command, November 22, 2016), 9.

<sup>4</sup> Ibid., 5–6.

<sup>5</sup> Kenneth Katzman, *The United Arab Emirates (UAE): Issues for U.S. Policy*, RS21852 (Washington, DC: Congressional Research Service, November 2, 2017), 16.

<sup>6</sup> Ibid., 17.

<sup>7</sup> *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Department of Defense, 2018), 9, available at <[www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf](http://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf)>.

<sup>8</sup> General Stanley A. McChrystal, USA (Ret.), telephone interview by authors, October 31, 2017.

<sup>9</sup> Ibid.

<sup>10</sup> *Agreement between the North Atlantic Treaty Organization and the Islamic Republic of Afghanistan on the Status of NATO Forces and NATO Personnel Conducting Mutually Agreed NATO-Led Activities in Afghanistan* (Brussels: North Atlantic Treaty Organization, September 30, 2014), available at <[www.nato.int/cps/en/natohq/official\\_texts\\_116072.htm?selectedLocale=en](http://www.nato.int/cps/en/natohq/official_texts_116072.htm?selectedLocale=en)>.

<sup>11</sup> NATO, "Resolute Support Mission in Afghanistan," November 10, 2017, available at <[www.nato.int/cps/en/natohq/topics\\_113694.htm](http://www.nato.int/cps/en/natohq/topics_113694.htm)>.

<sup>12</sup> Brigadier General John B. Richardson IV, USA, commander, Train Advise Assist Command—East, Operation *Resolute Support*, telephone interview by authors, October 23, 2017; Colonel Scott W. Halstead, USA, director, Simon Center for the Professional Ethic, United States Military Academy, telephone interview by authors, November 1, 2017.

<sup>13</sup> *Agreement*.

<sup>14</sup> Colonel Brett G. Sylvia, USA, chief of staff, 101<sup>st</sup> Airborne Division, telephone interview by authors, November 5, 2017.

<sup>15</sup> Richardson.

<sup>16</sup> Lieutenant General Stephen J. Townsend, USA, commander, 18<sup>th</sup> Airborne Corps, telephone interview by authors, November 8, 2017.

<sup>17</sup> Colonel J. Patrick Work, USA, commander, 2<sup>nd</sup> Brigade Combat Team, 82<sup>nd</sup> Airborne Division, telephone interview by authors, October 12, 2017.

<sup>18</sup> Sylvia.

<sup>19</sup> Lieutenant General Terry A. Wolff, USA (Ret.), Deputy Special Presidential Envoy for the Global Coalition to Defeat ISIS, Department of State, telephone interview by authors, October 18, 2017.

<sup>20</sup> Patricia Zengerle and David Lawder, "U.S. Congress Approves Arming Syrian Rebels, Funding Government," Reuters, September 18, 2014, available at <[www.reuters.com/article/us-iraq-crisis-congress-vote/u-s-co...oves-arming-syrian-rebels-funding-government-idUSKBN0HD2P820140918](http://www.reuters.com/article/us-iraq-crisis-congress-vote/u-s-co...oves-arming-syrian-rebels-funding-government-idUSKBN0HD2P820140918)>.

<sup>21</sup> Michael Shurkin et al., *Building Armies, Building Nations: Toward a New Approach to Security Force Assistance* (Santa Monica, CA: RAND, 2017), xiv.

<sup>22</sup> James N. Mattis, "Military Priorities," speech, U.S. Central Command, MacDill Air Force Base, FL, October 12, 2017.

<sup>23</sup> Wolff.

<sup>24</sup> Colonel Eric S. Strong, USA, commander, 1<sup>st</sup> Stryker Brigade Combat Team, 1<sup>st</sup> Armored Division, telephone interview by authors, October 25, 2017.

<sup>25</sup> McChrystal.

<sup>26</sup> Sylvia.

<sup>27</sup> Wolff.

<sup>28</sup> Richardson.

<sup>29</sup> Townsend.

<sup>30</sup> Halstead.

<sup>31</sup> Townsend.

<sup>32</sup> Command Sergeant Major William F. Thetford, USA, Senior Enlisted Advisor, U.S. Central Command, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>33</sup> Lieutenant General William D. Beydler, USMC, commander, Marine Corps Forces Central Command, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>34</sup> Command Sergeant Major Marc W. Eckard, USA, Senior Enlisted Advisor, Theater Special Operations Command—Central, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>35</sup> Vice Admiral John Aquilino, USN, commander, U.S. Naval Forces Central Command, Combined Maritime Forces, and U.S. 5<sup>th</sup> Fleet, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>36</sup> Work.

<sup>37</sup> McChrystal.

<sup>38</sup> Lieutenant General Michael X. Garrett, USA, commander, Army Central Command, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>39</sup> Major General Edward F. Dorman III, USA, director, U.S. Central Command Logistics Directorate, interview by authors, MacDill Air Force Base, FL, January 18, 2018.

<sup>40</sup> Major General George W. Smith, Jr., USMC, director, U.S. Central Command Strategy, Plans, and Policy Directorate, interview by authors, MacDill Air Force Base, FL, September 15, 2017.

<sup>41</sup> Lieutenant General Jeffrey L. Harrigian, USAF, commander, U.S. Air Forces Central Command and Combined Force Air Component, Southwest Asia, "By, With, Through," briefing slides with roundtable discussion, Doha, Qatar, Al Udeid Airbase, October 27, 2017.

<sup>42</sup> Garrett.

<sup>43</sup> Harrigian.

<sup>44</sup> *Summary of the 2018 National Defense Strategy*.

<sup>45</sup> Townsend.



# The By-With-Through Approach

## An Army Component Perspective

By Michael X. Garrett, William H. Dunbar, Bryan C. Hilferty, and Robert R. Rodock

*The Counter-ISIS Campaign has entered its third year, and we are on track with the military plan to defeat the terrorist organization in Iraq and Syria. Our “by, with, and through” approach and operational-level simultaneity strategy are working, and our partner forces continue to build momentum across the battlespace as we pressure the enemy on multiple fronts and across all domains.*

—GENERAL JOSEPH L. VOTEL, USA

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In 2018, as the United States enters its 17<sup>th</sup> year of conflict in the Middle East, the Army's 2018 campaign plan directs an endstate to be “ready to respond to threats from near-peer competitors and nonstate actors.”<sup>1</sup> Land forces in U.S. Central Command (USCENTCOM) have adopted an

operational approach of “by, with, and through” (BWT) to achieve this endstate. U.S. Army Central (USARCENT) remains front and center, straddling the line between the complexity of developing national strategy and the complication of operational feasibility to support the combatant commander’s mission. USARCENT, as the Army Service Component Command for USCENTCOM, is responsible for shaping the theater, coordinating theater security cooperation, and preparing forces for unified land operations. The USCENTCOM commander succinctly described the foundation of the USARCENT role in the joint fight when he asked, “It really is all about logistics, isn’t it?”<sup>2</sup> For USARCENT, logistics is having the right capability at the right place at the right time—all while anticipating the next requirement and setting conditions for its success. This article provides the USARCENT perspective on how it accomplishes its mission with BWT as the operational approach and demonstrates the need for the joint force to come to a common understanding of what executing operations within a *BWT operational approach*, and all associated terms, means.

USARCENT describes the BWT operational approach as conducting military campaigns primarily by employing partner maneuver forces *with* the support of U.S.-enabling forces *through* a coordinated legal and diplomatic framework. A brief review of how USARCENT has come to describe BWT as an operational approach sets the foundation for the following discussion and request for further analysis. Specifically, describing BWT as an operational approach requires a common understanding to frame the dialogue.

Although the term *strategy* is not defined in the *Department of Defense (DOD) Dictionary*, it is commonly understood as how to achieve desired ends through deliberate ways using available means. Field Manual (FM) 3-0, *Operations*, offers a method to understand the deliberate ways to approach a military problem and provides a doctrinal

approach “to address the challenges of shaping operational environments, preventing conflict, prevailing during large-scale ground combat, and consolidating gains to follow through on tactical success.”<sup>3</sup> The description of the four operations—shape, prevent, large-scale ground combat, and consolidate gains—is the deliberate way and provides the start for USARCENT’s analysis to describe BWT as an operational approach. FM 3-0 explains the bridge between the deliberate ways and available means as mechanisms: either defeat (enemy-focused) or stability (civilian-focused). BWT is an operational approach that accounts for the gray areas between a solely enemy-focused or civilian-focused mechanism to synchronize available means within deliberate ways to achieve desired ends. BWT is an operational approach that embraces the introduction of partner forces, which mitigates U.S. risk acceptance calculus and leads to anticipated, greater potential for enduring regional stability.

Currently, USCENTCOM executes the BWT operational approach by task organizing and distributing force packages across the joint operational area to provide enabler support to a partner’s maneuver forces. Such dispersion presents inherent challenges to command and control, force protection, and sustainment, particularly medical, maintenance, and logistical support. Although U.S. maneuver formations are mostly absent, BWT stresses historical models for consumption of U.S. fires. USARCENT supports the joint force by managing these issues on an ad hoc basis from an adjacent friendly country using available resources that were allocated for other purposes.

Fighting BWT is not a new concept in either USCENTCOM operations over the last 16 years or military history. However, understanding the effects of executing BWT within the current political and strategic environment in terms of force generation, operational sustainment, and tactical execution requires shared understanding across the joint community as friction exists associated with BWT and the family of terminology

that comes along with it. For example, is there a difference between a Security Force Assistance Brigade conducting advise-and-assist missions versus a Brigade Combat Team? How does the brigade commander execute his predeployment training to conduct advise, assist, accompany, and enable missions while deployed versus advise, assist, and enable missions? What tools, models, and planning factors could a sustainer use to maintain the operational reach of the joint force when units are employed in an other-than-doctrinal manner?

USARCENT intends for this article to describe the current environment and mitigation for the challenges of fighting BWT in order to trigger additional thought and analysis in the joint community. In addition, USARCENT desires to elicit dialogue and complement ongoing analyses by the Mosul Studies Group in Iraq, develop the Expeditionary Advisor Packages in Afghanistan, and deploy Security Force Assistance echelons in Iraq and Afghanistan.

## Evolution

Challenges inherent in the BWT method of war confronted USARCENT from the time it established the initial Combined Joint Task Force (CJTF) Headquarters for Operation *Inherent Resolve* (OIR) in 2014. The same challenges persist as USARCENT serves as the Coalition Forces Land Component Command for USCENTCOM, while maintaining responsibilities as the Theater Army and Army Service Component Command. In each of these roles, and at various times, USARCENT has adapted and maintains agility within its organizational architecture to accomplish all missions assigned by the geographic combatant commander (GCC). Frequently, these solutions call for the use of capabilities and resources originally allocated for other missions to include deterring malign influence and hostile aggression throughout the region. USARCENT is greatly enabled in its efforts to provide this support by leveraging the proximity of the friendly nation of Kuwait and the relationships developed there during more than



Infantry squad with 2<sup>nd</sup> Armored Brigade Combat Team, 1<sup>st</sup> Armored Division, assaults first of two buildings during platoon live-fire lane, January 28, 2018, during Omani-U.S. exercise Inferno Creek 2018, near Thumrait, Oman (U.S. Army/David L. Nye)

20 years of continuous presence and engagement.

The phrase *by, with, and through* originated decades ago as a component of the definition of unconventional warfare. The 2003 edition of Joint Publication (JP) 3-05, *Doctrine for Joint Special Operations*, defined *unconventional warfare* as:

*a broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities and unconventional assisted recovery.<sup>4</sup>*

Both understanding and applying BWT have evolved over the years. From

its inception in describing special operations forces' activities in low-intensity conflict, it has evolved to describe conventional activities in multidomain battle. The lack of clear definition results in challenges at the tactical and operational levels, while also having implications for the strategic level of warfare.

A brief historical review shows how different warfighting applications of the terms *by, with, and through* met with varying levels of success. Whether fighting to maintain an empire, thwart the spread of communism, or turn the tide in a mired conflict, military forces have used the tenets of BWT. From 1899–1902, fresh from the victory of the Spanish-American War, the United States sought to quell the Filipino independence movement *by* using indigenous forces to destroy entrenched partisans. From 1916–1918, the British fought to maintain an empire fighting *with*

surrogate forces in the Middle East. From 1955–1975, Western powers fought a proxy war *through* Southeast Asian armies to stop the spread of communism. From 2005–2011, the United States, mired in counterinsurgency in Iraq, took advantage of the Anbar Awakening to fight the discontented Iraqi insurgents *with* and *through* the Sons of Iraq. Each of these examples provides historical context to the development of present day application of BWT.

In years past, BWT could be viewed as an operational approach in an economy of force environment. Today's fight against the so-called Islamic State (IS) is hardly an economy of force mission from the standpoint of whole-of-coalition operations. Presently, BWT describes how the United States applies the warfighting functions, minus U.S. maneuver, in its fight alongside major partners willing to commit thousands of troops to decisive

action. The lack of common understanding of what BWT is, and the addition of the family of terms to accompany BWT, result in challenges at the tactical and operational levels while also having implications for the strategic level of warfare. A comparison with Operation *Iraqi Freedom* (2003) draws a stark contrast to the BWT approach. The 2003 campaign was a conventional fight employing combined U.S. arms to defeat a mostly conventional enemy. However, following the initial, successful invasion, the need to place coalition partners at the forefront of operations emerged. While this practice led to an anecdotal understanding of the BWT approach, the present resource-constrained environment demonstrates the need for a thorough doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) analysis.

The 2017 USCENTCOM Posture Statement states:

[The] Counter-ISIS Campaign has entered its third year, and we are on track with the military plan to defeat the terrorist organization in Iraq and Syria. Our “by, with, and through” approach and operational-level simultaneity strategy are working, and our partner forces continue to build momentum across the battlespace as we pressure the enemy on multiple fronts and across all domains.<sup>5</sup>

Fighting BWT is not fighting counterinsurgency. Rather, fighting BWT is to prevent the rise of an insurgency at the conclusion of operations. To optimize USARCENT’s support to the GCC and to apply lessons learned to the greater joint force, the U.S. military would benefit greatly from a shared understanding of the implications of successful execution of fighting BWT to force generation, training, executing, and sustaining the force.

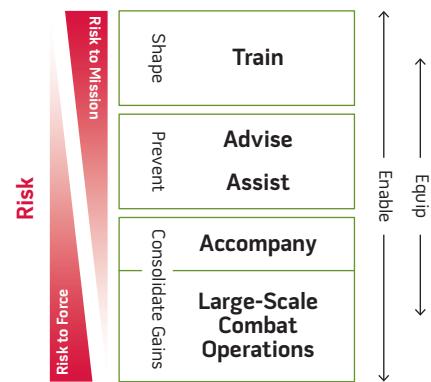
## Implications

The Army’s warfighting functions provide a useful framework to describe the implications of present-day application of fighting by, with, and through. Despite this admittedly Army-centric context, the impact of challenges

in fighting BWT to the joint force is real. Although its description is beyond the scope of this article, the Goldwater-Nichols Department of Defense Reorganization Act of 1986 prescribes the relationship between the Services and, specifically, the command relationship between geographic combatant commanders and their assigned component commanders. Following, there are certain responsibilities each component command owes to the joint force. For example, USARCENT provides air and missile defense to key locations within the USCENTCOM area of operations (AOR). In addition, USARCENT, through its Theater Sustainment Command, manages and distributes munitions for the joint force. Although these are just two of the responsibilities that USARCENT provides, it must balance risk to mission and risk to force while executing BWT. Thus, the Army’s warfighting functions provide a valuable way to identify examples of mitigating risk. A visual description of risk overlaid on the deliberate ways and available means is depicted in the figure.

**Mission Command (Command and Control per Joint Doctrine).** Army forces assigned to the USCENTCOM AOR are one-tenth the number assigned to the U.S. Pacific Command AOR and one-fourth the number in the U.S. European Command AOR. All other forces are present in response to needs-based requests for forces. In the course of meeting GCC need for Army forces, the Theater Army is the first echelon to review a request for additional capabilities. Often, the process of force generation leads to a denial of additional capability from outside the theater and a directive to employ capabilities already present for other purposes. This alternative sourcing process is documented in the form of a Theater Coordinated Assistance request from the warfighting headquarters to the GCC. USCENTCOM uses the request process to manage resource allocation across its three joint operations areas. Absent an explicit policy decision that underwrites the drawing down of capabilities

**Figure. By-With-Through Risk**



allocated to respond to other more existential threats, it is then left to the Service component to ensure the GCC understands the associated risk to the ability to respond to other contingencies.

USARCENT supports two named operations in the USCENTCOM AOR, Operation *Freedom's Sentinel* (OFS) and OIR. It exercises force protection responsibilities for the Multinational Force and Observers treaty organization in Egypt’s Sinai Peninsula, home to an active branch of the Islamic State. It directly executes tasks associated with the deterrence and theater security requirements of Operation *Spartan Shield* (OSS) in all but Syria, Iraq, Afghanistan, and Yemen. At the operational level, there is only one source from which to draw forces should the Department of the Army choose not to resource new deployments. As a result, the Army Service Component Command must carefully articulate the risk to executing its OSS mission in its support to either OIR or OFS.

In the USCENTCOM AOR, Task Force Spartan (TF Spartan), a mobilized Army National Guard division headquarters, supports OSS, OIR, and OFS with deliberate planning and detailed risk mitigation practices. The high number and wide variety of dynamic and unprogrammed missions conducted by its arrayed forces continue to affect manning, equipping, maintaining, and employing the force in support of both operations.

Major General Blake Ortner, TF Spartan commander from December



Lieutenant General Michael Garrett, left, U.S. Army Central commander, meets with Brigadier General Mark Odom, 82<sup>nd</sup> Airborne Division deputy commander for operations, during battlefield circulation of Iraqi area of operations in Erbil, Iraq, February 27, 2016 (U.S. Army/Jake Hamby)

2016 to July 2017, stated in his exit interview that the task force:

*had elements that were tasked for the Advise and Assist missions, but they were tasked across huge geographic areas. So, what that often meant is that you have the battalion commander [who's] running the [tactical command post] up in Mosul, you've got his [executive officer] down here in Kuwait managing the rest of the forces, the staff is split between the locations. . . . So, what you have is each location ending up with a reduced force, reduced staff planning and things like that. So, that could constrain the mission command capability a little bit.<sup>6</sup>*

The general also noted a mission command adjustment that supported mission accomplishment: “some of the command and support relationships were working against OIR and us. So, in working with OIR and ARCENT, we adjusted some to improve combat operations.”<sup>7</sup> As an example, he referenced

USCENTCOM’s transfer of authority from USARCENT to CJTF-OIR for the repositioning of High Mobility Artillery Rocket System (HIMARS) launchers in order to be more responsive to the fluid tactical situation on the ground in Iraq. Major General Ortner summarized the risks to the OSS mission in deterring malign influence and hostile aggression across the Middle East:

*Leaders at all levels are being asked to step outside of their normal responsibilities and lead and mitigate risk beyond what they were trained to do. They are also being asked to employ their equipment and forces outside of what would be normal [Mission Essential Task List] or [Army Universal Task List] mission requirements. In practice, not all of these efforts or employments are success stories, but the challenges, and resultant solution sets, are in line with what was derived in the [Army Operating Concept]—guiding future force development through identification of first order*

*capabilities that the Army must possess to accomplish missions in support of policy goals and objectives.<sup>8</sup>*

Examples of nondoctrinal employments incurring increased risk include:

- Attack Weapons Teams (AWT) (2x AH-64s) are executing geographically dispersed operations and with a command-and-support relationship separate from its company headquarters. The Combat Aviation Brigade operates with limited maintenance and refueling in an undefined logistics supply situation. TF Spartan depends on the Air Force to execute operational movement in the absence of organic Army transportation capabilities.
- TF Spartan HIMARS International Standards Organization OIR are deployed in 2x launcher teams called Light HIMARS Packages. Technically, the HIMARS units are

- designed to fight in four launcher platoons where each platoon includes a required Fire Direction Center. In the smaller configuration, sergeants are independently executing mission command of these centers. While they have been generally successful, the situation calls for anticipatory training of noncommissioned officers who may find themselves in this role.
- The 420<sup>th</sup> Engineer Brigade forms cross-functional teams and detachments below the level presumed in doctrinal task organization. These small teams are “commanded” by staff sergeants who are controlled by special operations forces’ elements through loose command and control relationships, and faced with making tactical- and operational-level decisions in the execution of their mission.

In an opposing view, Colonel J. Patrick Work, an on-the-ground advise-and-assist (A&A) brigade commander, noted, “There is no loss of chain of command because our [tactics, techniques, and procedures are] not recorded in doctrine. Perhaps this mission profile epitomizes mission command. . . . Bandwidth might be the most important class of supply to A&A. Power generation may be number two.”<sup>9</sup>

**Movement and Maneuver.** Army forces are conducting movements in Iraq and Syria, but not maneuver because the current form of BWT calls for the reliance on a partner’s maneuver force in the battlefield geometry. JP 3-0, *Joint Operations*, defines *maneuver* as “Employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy.”<sup>10</sup> Although not used for direct ground combat, there remains a requirement for U.S. infantry in other traditional roles. In CJTF-OIR, small advisor teams often have a full platoon of infantry for force protection.

**Intelligence.** The U.S. military has the most capable intelligence architecture in the world and focuses a variety of intelligence assets in the fight against the Islamic State. However, the absence

of prior intelligence-sharing agreements among partners can hinder the sharing of technologically derived information from U.S. sources. For the counter-IS fight, this challenge was somewhat overcome by the development of a tailored Middle East Stabilization Forces intelligence-sharing caveat.

Inversely, U.S. forces are unable to use human intelligence generated by partner nations to fill gaps in their situational understanding. American forces must determine a means to achieve efficiency in the development of a common operating picture and situational awareness in coordination with partner forces having different technology, language, and culture.

**Fires.** The current BWT fight relies on precision fires, and the U.S. military delivers fires more accurately now than at any time in history. BWT, in effect, trades the effects of precision-guided munitions for the lethality and fire discipline of troops on the ground. Combined arms doctrine calls for unified fire and maneuver to mass effects, seize and maintain initiative, and cause multiple dilemmas for the enemy.<sup>11</sup> Iraqi army and Syrian defense forces instead depend heavily on fires to disperse or attrit enemy forces prior to the seizure of terrain through maneuver. This Iraqi and Syrian practice of employing fires to achieve the effect of eliminating enemy resistance without complementary maneuver required fire missions in such number that the risk of error or collateral damage greatly increased. To protect civilians, as well as U.S., coalition, and partnered forces, from collateral damage, the use of relatively scarce precision munitions is preferred, which greatly increases their rate of expenditure. Additionally, fires employed in the course of BWT operations are typically dynamic rather than deliberate, making predictability of usage rates and resupply forecasting slightly more complex.

**Sustainment.** BWT is at least as logistically intensive for U.S./coalition forces as traditional operations, especially when supplying munitions in support of indirect fires. As a result of the increased expenditure of precision munitions, the allocated

storage and distribution capabilities are hard-pressed to provide sufficient stocks to the point of use, and the industrial base is severely taxed to meet manufacturing demand. Brigadier General Robert Harter refers to this unexpectedly high expenditure of artillery munitions with his observation, “BWT is more logically intense than if our forces were doing this ourselves. Particularly intensive in the use of precision fires. . . . The Iraqis understand maneuver, but sustainment in their formation is not there yet.”<sup>12</sup>

Major General Paul Hurley, commanding general, 1<sup>st</sup> Theater Support Command (1<sup>st</sup> TSC), from June 2015 to June 2017, wrote, “Waging war against [the Islamic State] with a limited U.S. military presence requires nond doctrinal logistics solutions to support coalition, U.S., and host-nation forces. . . . Without the authorities, access, and logistics structures of the past, the 1<sup>st</sup> TSC’s challenge is two-fold: providing operational and tactical logistics to U.S. forces while simultaneously providing material and supply support to the Iraqi forces.”<sup>13</sup>

Indications are that BWT inhibits the development of U.S. partners’ tactical and operational sustainment beyond what is necessary to conduct the close fight. It may be the case that so long as the United States is willing to establish and pay for upkeep of lines of communication for major operations, partners will continue to rely on that support. As Major General Hurley noted, “Coalition partners in the region rely too heavily on U.S. logistics expertise and equipment to achieve operational capability.”<sup>14</sup>

USARCENT provides medical and maintenance support to partners and the joint force through tailored, nond doctrinal packages. These packages demonstrate the requirement for a scalable force as outlined in the Army Vision 2025. However, the decentralized employment of small elements (HIMARS sections, AWTs, Sentinel Radar systems, sustainment packages), and constraints on the number of Soldiers deployed, stretch the ability of the maintenance and supply systems to uphold the readiness of critical systems supporting the Combined Joint Operations Area (CJOA). Maintenance

support relies heavily on civilian field service representatives who in turn depend on military-provided transportation and security to move to remote and austere locations around the battlefield. The concept of traditional unit basic loads for supplies and spares is not employed, and formations rely on a just-in-time concept of support.

To match partners' operational tempo and extend operational reach, BWT requires basing from multiple contingency operating locations. While this places advisors and support with partner forces where they are most critically needed, the requirement to provide logistics at each of those locations requires sustainment packages (forward logistics element) in ever-smaller numbers with less robust capabilities. The sustainment architecture that coalition and partnered forces rely on is continually modified to provide the maximum possible support to a rapidly changing CJOA within the constraints of U.S. policy and the political sensitivities of coalition partners.

Bureaucratic customs processes associated with conducting operations in sovereign nations also challenge the distribution and transportation networks within the CJOA. For example, the need to use commercial line-haul carriers over inadequate road networks, as well as limited airfield capability and an insufficient number of movement control units, lessen the effectiveness of the current CJOA distribution network. Maintaining effective control and accountability over the distribution of weapons and equipment in a semipermissive environment also continues to be a significant logistical challenge.

Others have noted that the lack of available force structure constrains operational flexibility. Major General Joseph Martin gave an example of the request for an advisor team:

*You . . . have to understand that the tail that is supporting that advisory team has to be accounted for. So, when you say "advisor team," you're looking at an infantry platoon plus a couple of staff officers, let's say that's forty people. However, there's an additional five or ten people we have to add to the [Brigade Support Battalion] or whoever.*

*When we throw some extra advisors, now we have to ask for a route clearance package because . . . more advisors, more networks for them to move to and from the roads, now we've got more roads to clear.<sup>15</sup>*

Because these forces are not readily available, planners must forecast and request the capabilities far in advance or the tempo of operations must slow to await their arrival.

Operational headquarters must budget for forces to support base operating support requirements, and this mission has further taxed the limited logistics forces available to provide BWT support in the CJOA. Major General Hurley wrote that "U.S. logisticians are meeting this non doctrinal workload using a manning-restricted sustainment footprint that is arguably inadequate for the task."<sup>16</sup> USARCENT and 1<sup>st</sup> TSC always accomplished the mission, but DOTLMPF-P improvements can reduce risk and improve efficiency.

**Protection.** BWT mitigates the risk to infantry and armor Soldiers who historically have the highest incidence of casualties, but it increases the risk to other forces distributed across the battlefield that are dependent, in some cases, on local forces for force protection. Major General Martin stated, "To achieve that access and to build that relationship you must have people forward [who] are not commuting to work, but they are living there with them and with that it works very well. But there are risks associated with that." He continued, "This environment forces commanders to spend a lot of time assessing risk because it is not something that you look at episodically or periodically. It's a thing you must continually assess over time."<sup>17</sup>

In referring to another dimension of Soldier risk, Colonel Work noted:

*Protecting ourselves and our partners is a top priority. Risks include illness and injury. . . I spend much of my time evaluating and mitigating risk with our [Task Force Advise and Assist] commanders. . . Consider the roles of chaplains and behavioral health specialists as well. Distributed forces, potential limitations to ground*

*mobility, and the human dimension of our Soldiers in a hazardous environment creates risk if there is not added preventative and reactive capacity.<sup>18</sup>*

While BWT seeks to increase the likelihood of accomplishing political objectives and decrease the risk to U.S. forces in the close fight, it increases the risk to strategic and tactical mission accomplishment. The tactical mission is placed at risk in relying on the decisionmaking processes and priorities of partners, while risk to the overarching strategic mission is increased when objective endstates and those of chosen partners diverge.

Finally, USARCENT executes BWT operations at an increased risk to its steady-state requirement: deterring malign influence and hostile aggression while setting conditions for transition to combat and shaping the environment to mitigate threat. Of course, the elimination of all risk is an unachievable, and probably an undesirable, objective. As an Army War College professor noted, "In war, risk is a zero-sum game where combatants have to make tradeoffs between risk to themselves, the mission, and noncombatants. Eliminating the risk to noncombatants places this risk squarely on combatants and the mission. If combatants also refuse or are not able to accept sufficient risk, then it all falls on the mission, which is often itself sacrificed."<sup>19</sup>

## Initial Doctrinal Thoughts

The joint force should commission a study resulting in a doctrinal definition of BWT and a framework for BWT operations, similar to the effort put forth in the development of counterinsurgency doctrine. The outcomes of this study would better enable planning and resourcing the BWT fight, and it would provide warfighting headquarters, force providers, and other key stakeholders a common frame of reference for discussing the requirements and objectives for BWT operations. At endstate, the study could create doctrine for adapting employment of smaller formations with enablers through leveraging the Mosul study and Center for Army Lessons Learned embeds. As demonstrated in

this article, USARCENT offers the following definitions for consideration to start a more deliberate analysis:

- By, With, and Through: Operational framework to conduct military campaigns primarily by employing partner maneuver forces with the support of U.S. enabling forces through a coordinated legal and diplomatic framework.
- Train: Planned instruction to partners about a particular skill or type of behavior in a permissive environment. Includes tactical tasks such as marksmanship and how to use equipment as well as higher level skills such as intelligence fusion, combined arms integration, and large unit tactics.
- Advise: Provide subject matter expertise, guidance, and counsel to partners before they carry out missions. Usually one-on-one or in small groups and with an informal give and take as in a graduate course.
- Assist: Provide subject matter expertise, guidance, and counsel to partners while they are carrying out assigned missions. The advisor remains behind the close area.
- Enable: Provide and/or employ U.S. military activities, forces, equipment, and/or weapons systems in support of partner missions. Can include equipment; transportation; indirect fires; intelligence, surveillance, reconnaissance; and so forth. Enabling forces do not include U.S. maneuver forces such as infantry and armor conducting close combat.
- Accompany: Advisors and enablers physically deploy with partners while they are carrying out assigned missions in the close area, up to and past the forward line of troops.
- Building Partnership Capacity: The wide array of Title 10 and Title 22 programs that advance partner-nation military abilities and capabilities that contribute to accomplishing U.S. national security objectives. Includes training, equipping, exercises, and exchanges.
- Theater Security Cooperation: All DOD interactions with foreign

defense establishments to build defense relationships that promote specific U.S. security interests, develop allied and friendly military capabilities for self-defense and multinational operations, and provide U.S. forces with peacetime and contingency access to a host nation.

▪ Security Force Assistance: DOD activities that contribute to unified action by the U.S. Government to support the development of the capacity and capability of foreign security forces and their supporting institutions.

## Conclusion

From demonstrating U.S. might in response to an attack on the homeland and removing a ruthless dictator, to declaring mission accomplished and forcing manning levels, to renaming operations and declaring end dates, the United States continues a series of operational deployments in the Middle East. The current (although undefined in current doctrine and lacking shared understanding) operational approach to fight by, with, and through partners yields certain risk that commanders mitigate through non doctrinal means. During his Component Commander's Conference in October 2017, General Votel summarized the importance of understanding the implications of fighting by, with, and through. He stated, "We have to understand the risk we [combatant and component commanders] are having our subordinate commanders absorb on our behalf."<sup>20</sup>

USARCENT studied that risk from a Theater Army perspective using the Army's warfighting function framework and additional joint analysis using the DOTMLPF-P structure. In practice, Army forces are executing outside of their design, and the Army Service Component Command is supporting the joint force in an ad hoc fashion. Partners are flawed, lack of U.S. maneuver forces is resource intensive, and dependability on indigenous forces removes U.S. control of the tempo in the fight. Improved joint understanding of fighting BWT, and the associated family of terms, will enable

force generation to advance the tactical fight, organize actions in time and space toward the theater strategic objectives, and account for grand strategic and political goals. To support the shared understanding and address the indispensable roles of three key agents in the BWT system—local forces, U.S. forces, and political leadership—USARCENT offers that the BWT operational approach is conducting military campaigns primarily by employing partner maneuver forces with the support of U.S. enabling forces through a coordinated legal and diplomatic framework. JFQ

## Notes

<sup>1</sup> Army Campaign Plan (Washington, DC: Headquarters Department of the Army, 2018).

<sup>2</sup> Joseph L. Votel, email message, June 8, 2017.

<sup>3</sup> Field Manual 3-0, *Operations* (Washington, DC: Headquarters Department of the Army, 2017).

<sup>4</sup> Joint Publication 3-05, *Doctrine for Joint Special Operations* (Washington, DC: The Joint Staff, 2003).

<sup>5</sup> Senate Armed Services Committee, *Statement of General Joseph L. Votel on the Posture of U.S. Central Command*, March 9, 2017, available at <[www.centcom.mil/ABOUT-US/POSTURE-STATEMENT/](http://www.centcom.mil/ABOUT-US/POSTURE-STATEMENT/)>.

<sup>6</sup> Blake Ortner, exit interview, Camp Arifjan, Kuwait, 2017.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> J. Patrick Work, exit interview, Iraq, 2017.

<sup>10</sup> Joint Publication 3-0, *Joint Operations* (Washington, DC: The Joint Staff, 2017).

<sup>11</sup> Army Doctrine Publication 3-0, *Unified Land Operations* (Washington, DC: Headquarters Department of the Army, 2016).

<sup>12</sup> Robert Harter, exit interview, Kuwait, 2017.

<sup>13</sup> Paul C. Hurley et al., "Considerations for Supporting a Train, Advise, and Assist Environment in Iraq," *Army Sustainment Magazine* (November–December 2016).

<sup>14</sup> Ibid.

<sup>15</sup> Joseph M. Martin, exit interview, Iraq, 2017.

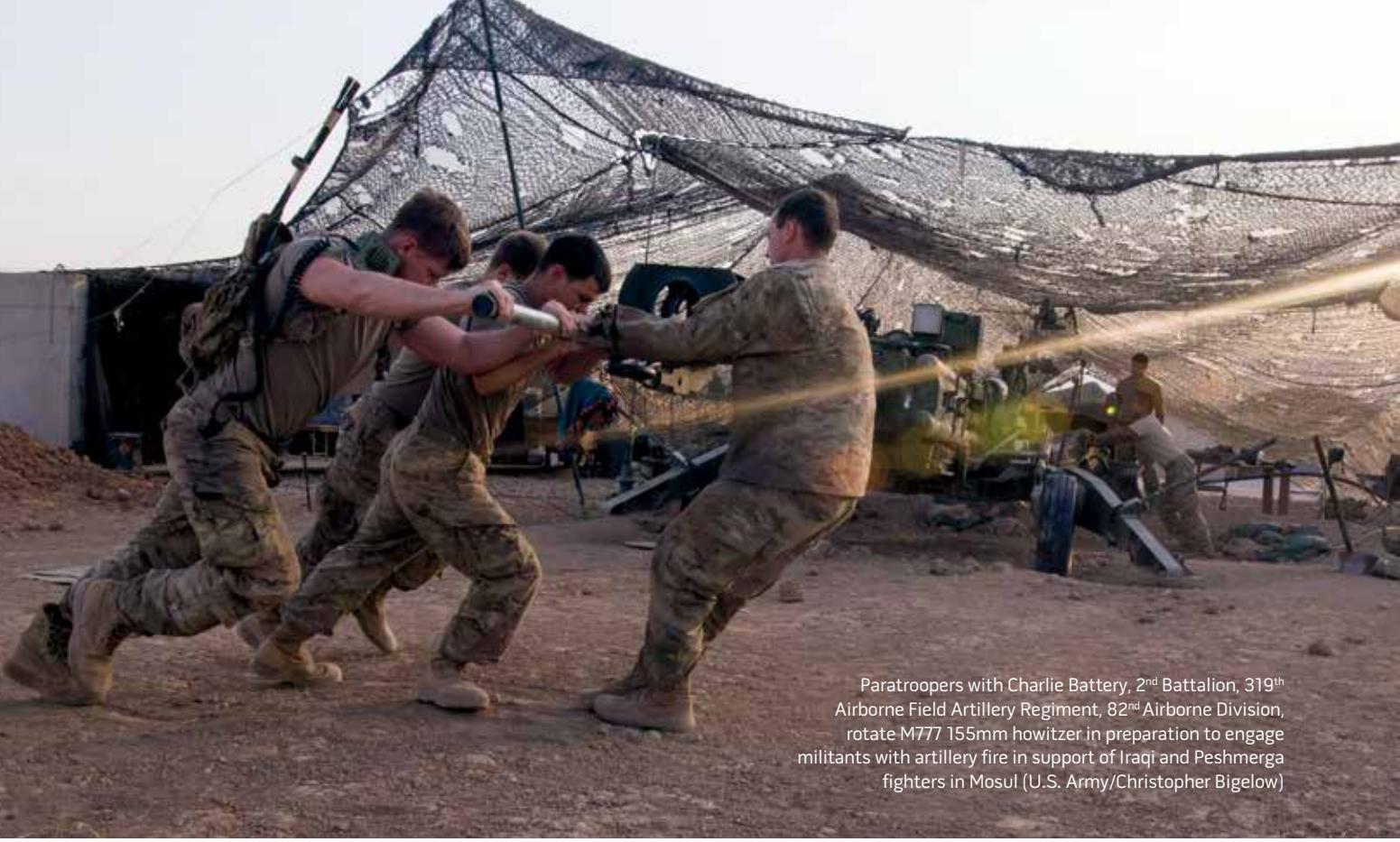
<sup>16</sup> Hurley.

<sup>17</sup> Martin.

<sup>18</sup> Work.

<sup>19</sup> Tony Pfaff, statement, Carlisle Barracks, PA, 2017.

<sup>20</sup> Joseph L. Votel, Statement at U.S. Central Command Component Commanders' Conference, Qatar, 2017.



Paratroopers with Charlie Battery, 2<sup>nd</sup> Battalion, 319<sup>th</sup> Airborne Field Artillery Regiment, 82<sup>nd</sup> Airborne Division, rotate M777 155mm howitzer in preparation to engage militants with artillery fire in support of Iraqi and Peshmerga fighters in Mosul (U.S. Army/Christopher Bigelow)

# Fighting the Islamic State By, With, and Through

## How Mattered as Much as What

By J. Patrick Work

In January 2017, the 2<sup>nd</sup> Brigade Combat Team, 82<sup>nd</sup> Airborne Division, deployed to bolster the Iraqi Security Forces (ISF) in the campaign to annihilate the so-called Islamic State (IS). Task Force Falcon joined the coalition advise-and-assist (A&A) effort with 2 weeks remaining during the 100-day offensive to retake east Mosul. For the next 8 months, we wrestled a complex environment with

a simple framework: help the ISF and hurt IS every day. Naturally, we had missteps, but our team also served ISF and coalition commanders well on some terribly uncertain days. Specifically, *how* we advised ISF commanders was as important as *what* we advised them to do in order to win. We mixed innovative concepts and straightforward tactics to attack IS by, with, and through the ISF, yet the entire effort always centered on our partners' leadership and ownership of exceptionally nasty ground combat operations. Several of our perspectives on mindset

and approach—how we advised—offer useful examples and angles for leaders to ponder as we consider future excursions with this style of high-intensity security force assistance.<sup>1</sup>

### Organizing Principles

Our mission under Operation *Inherent Resolve* (OIR) proved infinitely different than the exhausting, firsthand combat that many of us experienced in Iraq from 2003 to 2008. For example, a typical American Soldier's experience during Operation *Iraqi Freedom*'s "troop surge," whether battling Shia

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militias or the Salafist forebears of IS, was that Americans did the deadliest work, as Iraqis observed. Moreover, the ISF that we supported were also not the same broken groups that collapsed during the IS rampage of 2014. Our OIR journey was dramatically different than both of these circumstances, and we adjusted our mindset and approach accordingly.

Admittedly, the initialism *ISF* may carelessly overhomogenize our partners' capabilities; each of the three cohorts had its own distinct personality, and our account will bring some of this to life. This collection of host-nation troops often demonstrated tremendous willpower and assumed the lion's share of the physical risk no matter which uniform they wore: Iraqi army, Federal Police (FEDPOL), or Counterterrorism Services. Still, warfare by, with, and through the ISF was hard work that highlighted three interrelated principles that can help inform how joint leaders think about, resource, and lead A&A operations: advisers do not get to choose their partners, advisers do not control their partners, and advisers must put their partners first.

First, coalition combat advisers did not get to choose their partners. Each of our A&A teams had cause for frustration at times, but some partnerships were clearly more challenging than others. Indeed, some ISF were reluctant at times. Some of their commanders demonstrated inconsistent levels of know-how, and, on occasion, the cohorts' agendas were more competitive than cooperative. On the other hand, we found that IS rallied around cunning jihadists who exploited Iraq's sectarian politics and commanded an intoxicating Salafist narrative of martyrdom. In the end, despite being vastly outgunned, small, organized IS units continued fighting through the battle of Mosul's final days in mid-July. Our mission statement not only reflected our pursuit of Combined Joint Task Force-OIR's (CJTF-OIR) interests, but also how we worked to steady the episodic imbalance of determination between our partners and the enemy: "Task Force Falcon—by, with, and through ISF in everything it does—advises, assists, and

empowers our partners to defeat [IS] militarily in order to help the government of Iraq establish sufficient local security and set conditions that contribute to broader regional stability." A key was remaining goal-oriented when it was hard; our job was simply to help the partners *that we had* dominate IS.

Along these lines, our combat advisers had little control over partner decision-making, preparation for combat, or execution of operations. Importantly, our commanders embraced being advisers first, accepting that most meaningful decisions and moves were clearly in the hands of the Iraqi government. Indeed, senior ISF commanders required vast support and encouragement at times, but they generally took full responsibility for their operations. Our A&A teams, logisticians, and artillery troops proved infinitely flexible; advisers could never fall in love with ISF plans because they changed so frequently. Moreover, our two-star and three-star commanders' flagship concepts saturated our approach. Lieutenant General Stephen Townsend of CJTF-OIR was clear that we were to *help* the ISF fight. Stated another way, our A&A teams did not close with or take the ground from IS, but instead navigated a fascinating quest of influencing ISF without any authority *over* ISF. Additionally, Major General Joseph Martin of Combined Joint Forces Land Component Command (CJFLCC)-OIR championed "nested, multi-echelon engagement" to help the coalition optimize its influence with our partners. Like any coalition warfare, the host-nation force came first; however, our approach to fighting by, with, and through amplified our Iraqi partners' leadership and ownership.

Thus, Task Force Falcon upheld the ISF as the preeminent member of the coalition against IS. We measured our success only through our partners' success. This mindset is worth emphasizing because, frankly, superbly capable teammates can lose sight of the partners' centrality at times. To condition our team to always consider the ISF's goals first, our leaders openly discussed the importance of empathy, humility, and patience

throughout the formation. We certainly defeated IS in Ninewah Province together, but the fact remains that ISF troops bore the weight of the violence on some astonishingly brutal days. The human costs to the ISF were massive over Mosul's 9-month struggle to defeat our nations' common enemy. I sensed that our by-with-through ethos was on track once our teams began to consistently use terms such as *them*, *they*, and *their* rather than *us*, *we*, and *our*. Our language mattered because how we spoke reflected how we thought about our partners' leadership and ownership of operations. Accomplishing our mission was obviously central, but it was not more important than *how* we accomplished our mission.

## Lethal OCT Network: An Imperfect Analogy

Anyone who has experienced a combat training center (CTC) rotation has a useful model for comprehending Task Force Falcon's core organizational and operational concepts. Fundamentally, the CTC's observer-controller-trainer (OCT) network wraps itself around a rotational unit with a parallel structure connected by dependable communications and disciplined information flows. The network's goal is to help unit commanders improve their warfighting craft, largely by helping them see the opposing force (OPFOR), the ill-structured environment, and themselves. The OCT network may even feel intrusive at times as its nodes maintain contact with the rotational unit at every echelon. Finally, assuming competence is the network's anchor point, many of the same traits that make A&A teams effective also distinguish the most useful OCTs. Empathy, humility, and patience truly matter.

Perhaps most important, the OCT network is not embroiled in "fighting" the OPFOR or the burden of external evaluation. Therefore, OCTs routinely achieve a level of shared understanding that outstrips the rotational units' understanding. Of course, they are not all-knowing; plenty of conversations occur without OCT oversight, and they periodically misread events, personalities, or

trends. Still, the network is well-postured to provide vertically aligned insights, perspectives, and ideas that help the rotational unit advance against the OPFOR in an uncertain environment. An imperfect analogy, for sure, but thus far we have only discussed similarities that attend to the advise side of A&A operations.

As for the assist aspects, we should begin by picturing the same OCTs armed with enormous amounts of secure bandwidth, intelligence capacity, and strike capabilities. Moreover, imagine that this lethal OCT network's mission, or *moral obligation*, includes attacking the OPFOR relentlessly to ensure the rotational unit wins. Now visualize this lethal OCT network as only one among equals in an aggressive ecosystem that includes special operations, joint, and other coalition stakeholders who are also united in their desire to thrash the OPFOR. As inadequate as this comparison may be, we all reason by analogy: Task Force Falcon operated like this fictional, lethal OCT network—only the stakes were infinitely more deadly and complex. Our field-grade commanders wore two hats, advising ISF corps or division commanders in addition to their traditional responsibilities. Likewise, our company-grade commanders advised Iraqi army or FEDPOL brigades. Combat advising at these echelons maintained a natural distance between our teams and the savagery of close combat, and this space probably reinforced our focus on helping our partners see the enemy, the environment, and themselves rather than doing the fighting for them.

### **Align Around the Big Ideas, Then Get Out of the Way**

In addition to Task Force Falcon's seven organic battalion-level headquarters and internal enablers, we integrated an eighth battalion-level adviser team, a 155mm Paladin battery, and several other formal attachments or informal partners. Our operational profile was as geospatially decentralized as it was dynamic—we had at least one platoon that operated from 14 different bases over the 9-month mission. Moreover, our A&A operations were functionally

diverse, spanning divestitures of military equipment and supplies for vetted partners, fires and counterfire, civil-military advice, and the deadly work of helping ISF liberate the people of Nineveh.

Steering our decentralized, dynamic, and diverse A&A enterprise called for an enduring set of guideposts that lined up our decisionmaking and risk evaluation processes. As we entered the A&A fray of Mosul in January, Task Force Falcon organized around five big ideas:

- Protect ourselves and our partners.
- ISF are always the main effort.<sup>2</sup>
- Attack IS.
- Share understanding.
- Be agile—ISF should never have to wait for us.<sup>3</sup>

We concentrated on these ideas constantly for nearly 9 months, and reevaluated their relevance on several occasions as the campaign advanced.

When I was a student at the Marine Corps War College, preparation for a guest lecture by Lieutenant General Paul Van Riper, USMC (Ret.), introduced me to a mission command–styled concept that he dubbed “In Command and Out of Control.”<sup>4</sup> Along these lines, I envisioned commanding Task Force Falcon from the center, an intellectual schema blending the organizational strengths of hierarchies and webs that I had observed during prior combat tours with joint special operations task forces. The chain of command certainly remained intact, particularly our commanders’ responsibility to help the CJFLCC manage risk, but we knew the brigade headquarters would get in the way of our teams unless we stayed “up-and-out.” Also, our traditional roles in a typical brigade hierarchy were far less notable than our A&A-specific responsibilities to empower combat advisers at the tactical edge. Any leader’s control over people and events naturally loosens at each higher echelon of command; I tried to *command* our A&A network, never to *control* it.

### **Relationships: Coin of the A&A Realm**

In its essence, Task Force Falcon was not made up of people—it *was*

people. And our people did not advise ISF institutions—they advised other people. The fight to liberate Mosul was a decidedly human story of grit and willpower, and the key ISF characters in the story had their own personal relationships, tensions, motivations, and fears. Uncomfortable discussions were the natural order of things, and sturdy relationships with our partners helped us get past them. Rule #1 for us was profoundly unassuming: “Listen.” And Rule #2 was nearly as simple: “Maintain contact.” Only by staying with key ISF commanders much of the time, and listening to them *all of the time*, did our A&A network begin to understand how our partners saw IS, the environment, and themselves. This informs Rule #3: “Be realistic.” The battle of Mosul was exhausting for both sides. Even as poorly trained and resourced as IS may have been at times, its leaders demonstrated remarkable conviction, an inequality that helped extend such a murderous resistance. Expressed differently, by listening during carefully orchestrated contact with the ISF, our team remained realistic about the advice we gave, as well as our own limitations in influencing the ISF’s fighting path and pace.

We probably only saw the tip of the iceberg, but our A&A network would have never had a chance of understanding Mosul’s unfolding story unless we all committed to our relationships. Lieutenant Colonel Jim Browning, adviser to 9<sup>th</sup> Iraqi Army Division and commander of 2-508<sup>th</sup> Parachute Infantry Regiment, went so far as to fast with his partners through Ramadan. As long as we answered the CJFLCC commander’s information requirements, we allowed the ISF commanders’ biorhythms, specifically cultural habits like afternoon rest and late meals, to drive our task force–level battle rhythm. Indeed, teams at every echelon were sensors for relevant atmospherics and answers to higher headquarters’ information requirements. By living and breathing the ISF leaders’ biorhythm, we underscored, directly and indirectly, the ISF’s primacy in the fight.



Iraqi Security Forces member provides security near patrol base in Mosul, June 22, 2017 (U.S. Army/Rachel Diehm)

In particular, our A&A efforts with Staff Lieutenant General Abdul Amir al-Lami, the Iraqi government's overall joint forces commander, framed and reframed a lively puzzle for senior, subordinate, and peer special operations commanders. He was a serious man who evoked Dwight Eisenhower for his own ISF-internal coalition, and as his combat adviser, I was physically with him on most days and nights. I *listened a lot* during our 150-day battle to liberate west Mosul, and we had several uncomfortable but candid discussions. After spending the day with Staff Lieutenant General al-Lami, I would typically report insights to the CJFLCC commander using a limited flag officer email distribution in order to help inform our nested, multiechelon engagement across the team of teams.

After hitting send on these brief messages, we often followed up with phone

conversations several nights a week. Later in the evenings, we frequently hosted secure video teleconferences to connect Staff Lieutenant General al-Lami in northern Iraq with his partners, Major General Martin and later Major General Pat White, in Baghdad. Meanwhile, I often pumped similar contextualized updates down and into our network of field- and company-grade teams that were also listening, maintaining contact, and pursuing realistic pieces to the ever-morphing puzzle. Consistent dialogue throughout the breadth and depth of our A&A network contributed to shared understanding and advanced our ability to help ISF and hurt IS.

Still, it took more than energy and listening to earn our partners' trust. ISF commanders were pragmatic when evaluating risk; they fought knowing the Iraqi government may not be sending

replacement troops, combat systems, or ammunition any time soon. This gave our relationships, no matter how cozy, a transactional quality. Expressed very simply, Rule #4 was "Assist in order to advise." The ISF senior commanders we dealt with were well-educated, had seen extensive combat beginning with the Iran-Iraq War decades earlier, and had watched senior American advisers come and go for years during Operation *Iraqi Freedom* and Operation *New Dawn*. Importantly, they also stood on the business end of American military dominance twice between 1991 and 2003, so they had little patience when they were tested by inexpensive off-the-shelf IS drones or when coalition strike cells developed the situation before directing precision fires. In fact, our predecessors from the 2<sup>nd</sup> Brigade Combat Team, 101<sup>st</sup> Airborne Division (Air Assault), wisely coached us

to prepare for this assist in order to advise paradigm. “Money talks” in combat advising, too. Ninth Iraqi Army Division leaders appreciated Lieutenant Colonel Browning’s symbolic show of friendship during Ramadan, but what they really wanted was for him and Command Sergeant Major Curt Donaldson to keep striking IS on the final days of close combat in Mosul and Tal Afar.

A commonsense feature of relationships was probably the most significant to our mission—strong relationships encouraged accountability in the partnership. Notably, coalition advisers joined FEDPOL senior leadership for the first time as the ISF’s counterattack on Mosul began. Obviously, there was some interest-mapping for both sides to do, and occasionally the stress and slaughter of the FEDPOL’s attack in west Mosul caused passionate reactions. For example, the FEDPOL’s three-star commander fired our A&A team at least a couple of times. Even so, the team that Lieutenant Colonel John Hawbaker and Command Sergeant Major Brian Knight led remained remarkably goal-oriented. Their best military advice—delivered with empathy, humility, and patience—as well as their punishing strikes against IS set them up to push back when coalition interests were ignored. This brings us to Rule #5: “Never lose sight of your own interests, and use your leverage.” To be clear, ours was never a carrot-and-stick relationship. It was much more of an equal partnership—their success was our success. Yet at times, we had to dial our types and amounts of combat support up or down, promote or expose ISF commanders’ reputations with key Iraqi government influencers, or shift priorities to exploit aggressive ISF action elsewhere. Again, CJTF-OIR had interests, too.

More so than any other experience in my 22 years of commissioned service, Task Force Falcon’s fight by, with, and through the ISF epitomized central concepts underpinning the Army doctrine of mission command. We were empowered for dramatically decentralized operations because we kept the CJTF and CJFLCC commanders’ intents front of mind always, using the already discussed five

ideas to guide our decisionmaking and activities. Like all senior-subordinate relationships, ours were stressed on occasion, but I genuinely trusted all eight of our field-grade commanders. Also, our role was critical in informing a unified coalition view, so we tirelessly and transparently overcommunicated with our higher headquarters to help them understand the campaign from the ground up. Our commanders also expected everyone in our A&A network to do their jobs, regardless of their distance from the combat action. There were no extra Soldiers on our team. More directly, there were no extra minds. Our leaders and Soldiers at every echelon had to continuously solve emerging problems across the warfighting functions. Finally, we organized the art and science of mission command to get the right information to the right leader at the right time so that he or she could make useful decisions in an ever-changing environment.

### All Six “As” of A&A Operations

Through the Lethal OCT Network analogy, we introduced a handful of the concepts inherent to A&A operations. *A3E*—advise, assist, accompany, and enable—entered the coalition lexicon before Task Force Falcon arrived in Iraq. The third A, accompany, ostensibly delineated the riskier forward posturing of combat advisers to help accelerate the counter-IS campaign. For Task Force Falcon, we never knew the difference; there was no before and after perspective for us to have. Because we transitioned while the ISF were still fighting in east Mosul, our combat advisers had to cultivate relations with ISF generals while in contact. Thus, close proximity to ISF commanders on the battlefield was always a signature component of our mission, so we may have intuitively leaned toward a handful of “As” other than advise, assist, and accompany as we honed our A&A mindset and skill-set in Mosul’s cauldron of violence.

All six “As” and the nuanced concepts and challenges they represent are security force assistance lessons that we learned fighting by, with, and through the ISF.

**1. Advise.** Our teams helped ISF commanders think through their tactical and logistics problems with an eye toward exploiting opportunities, assessing risk, and making sober decisions on how to apply finite resources. Through nested multiechelon engagement, Task Force Falcon pressed consistent messages at every echelon. In fact, we frequently helped the CJTF or CJFLCC commanders be our finishers. Both were key drivers of coalition combat advising as they engaged at the executive levels to influence ISF activities, all the while reinforcing our nested message from the top-down.

**2. Assist.** Our partners rarely used the red pen before designing a scheme of maneuver. Therefore, some of our most important assistance to them was coaching intelligence-driven operations. First, our A&A network shared intelligence information and products to the extent that we were allowed. As we helped the ISF prepare to attack Tal Afar in August 2017, we actually arranged the entire brigade intelligence enterprise to help them understand which attack axes exploited IS’s most vulnerable defenses. The value of our advice was found in their execution. Our partners dominated IS in a 12-day blitz to retake the city.

Assist’s lethal expression was obviously precision fires. After IS conquered Mosul, it prepared a formidable defense for more than 2 years before the ISF launched the counterattack in October 2016. The defense involved a monstrous mortar capacity, a legion of suicide car bombers whose high-payoff target list was topped by ISF tanks and engineering assets, and droves of IS infantry. The ISF stubbornly moved through this medley of violence for 9 months, reinforced by coalition strikes from artillery, attack helicopters, jets, and bombers. Meeting the ISF requirement for responsive and precise fires, more so than other form of assistance, gave our partners confidence on the hardest days.

**3. Accompany.** As discussed, Task Force Falcon was operating forward with ISF brigade, division, and corps commanders upon arrival in January. Predictable and persistent contact with ISF commanders was crucial to building



Military working dog team with 380<sup>th</sup> Expeditionary Security Forces Squadron completes detection training scenario at undisclosed location in Southwest Asia, January 10, 2017 (U.S. Air Force/Tyler Woodward)

relationships of trust and accountability, but accompanying them also fed our efforts to assure, anticipate, and be agile. Accompanying the ISF gave our combat advisers a strong sense for the combat's direction and intensity. This helped our Lethal OCT Network provide timely and useful assistance at the point of decision while also offering perspective to promote shared understanding and unity of effort.

**4. Assure.** During my last battlefield circulation with Major General Martin before he departed in July, I offered my observation that the third A in A3E should stand for *assure*, not *accompany*. We have countless examples of how our physical presence, ideas, or fires—or a confluence of these inputs—gave ISF commanders the confidence to keep attacking. In fact, I now have a new paradigm for what nonlethal contact can mean. In OIR, when I was not with Staff Lieutenant General al-Lami, we maintained contact. For the very reason of assurance, quality translators mattered

immensely to us. During frequent times of crisis, we encouraged all of our advisers to continually remind the ISF that they could count on us and that their success was our success.

**5. Anticipate.** As we discussed the A3E profile previously, I mentioned my proposal for a more relevant third A, but there is more to the story. Major General Martin actually countered with another insightful candidate, *anticipate*. To be clear, the ISF we enabled during OIR did not issue combat orders or rehearse operations. In fact, senior commanders normally returned from Baghdad just in time for the start of another bloody phase of the attack. When our partners departed northern Iraq during the transitions, we continued to overcommunicate and maintain a disciplined battle rhythm to ensure our A&A network's shared understanding in spite of lapsed Iraqi communications. In fact, during these periods, our partners only occasionally felt compelled to call us with essential updates, so we relied heavily

on the CJFLCC commander and senior staff in Baghdad to help us posture our A&A capabilities.

Even as we transitioned the A&A mission to 3<sup>rd</sup> Brigade, 10<sup>th</sup> Mountain Division, the ISF plan was evolving daily as the start of the Hawijah offensive approached. As we departed, CJFLCC was organizing a medical evacuation architecture without absolute certainty of ISF intentions. The incoming team was arranging its fires architecture and basing posture with an eye toward maximum flexibility in order to absorb late change. Nothing was first order in Iraq's political-military environment. As stated, Task Force Falcon could never fall in love with a plan, and we continuously challenged our own assumptions. Our A&A network had to always listen, maintain contact with our counterparts, and apply the fundamentals of mission command in order to make the best decisions we could. However, when we sensed increased risk, the commanding general or I



Member of Iraqi federal police awaits next movement on streets of recently secured airport during offensive to liberate West Mosul, March 2, 2017 (U.S. Army/Jason Hull)

would direct clarifying questions to Staff Lieutenant General al-Lami, discussing resource tradeoffs with him in a transparent manner.

**6. Agility.** One of Task Force Falcon's guiding ideas was that the ISF should never have to wait for us. Our commanders and teams nimbly changed directions in response to updated Iraqi government decisions or emergent opportunities to damage IS. In fact, 2<sup>nd</sup> Battalion, 325<sup>th</sup> Airborne Infantry Regiment, support to the 15<sup>th</sup> Iraqi Army Division near Badush is a superb example. While the battle of Mosul still raged, Staff Lieutenant General al-Lami decided to press the IS disruption zone to the east of Tal Afar. He shared his thinking with us during a routine key leader engagement on a Monday evening, and by Friday morning, Task Force White Falcon was on the move. In a matter of 4 days, we synchronized logistics, began building a new assembly area, and integrated a battery of 155mm howitzers that was previously based with our cavalry squadron. We kept it simple during these frequent jumps; there were no routine patrols and teams lived out of rucksacks initially. The priorities were always establishing the defense and long-range communications.

### In Their Own Way: The Essence of Warfare By, With, and Through

It was a privilege to represent our Army and our storied division with the coalition during OIR. We are also honored to have served under two tremendous divisions during the drive to help the ISF dominate our nations' shared enemy. We could not have been prouder of our partners as we departed Iraq in September; the ISF had liberated well over 4 million people and 40,000 kilometers of terrain and more than a quarter million people had returned to their homes in Mosul. Perhaps the most heartening aspect was that Staff Lieutenant General al-Lami and the ISF accelerated the campaign against IS following their victorious battle of Mosul.

How we advised ISF commanders—our mindset and approach—always mattered as much as the actual tactical and logistical advice that we conferred during our mission to help ISF and hurt IS every day. We had to produce results to retain the ISF's trust, and we are immensely proud of our teams for balancing grit with empathy, humility, and patience. There was always much more to serving the ISF and coalition well

than merely advising and assisting. Still, the campaign was incurably human, and naturally, relationships mattered. Solid relationships kept everyone goal-oriented on frustrating days, and our connections introduced a deeper accountability to the partnership. Finally, we kept a consistent azimuth guided by five big ideas, and we never lost sight of the coalition's interests.

By breaking down IS in their own way, the ISF leadership and ownership of the battle of Mosul embodied the essence of warfare by, with, and through a partner whose success was the very measure of our success. I still clearly remember the day I sensed the ISF mass was finally toppling the enemy's Juhmuri Hospital fortress in west Mosul. It was the visible beginning of the end for IS, and our partners were still leading the day's deadly work. They continue to do so today. *JFQ*

### Notes

<sup>1</sup> Joint Publication 3-20, *Security Cooperation* (Washington, DC: The Joint Staff, May 23, 2017), II-8, cites Department of Defense Instruction 5000.68, while describing *security force assistance*: "With, through, and by. Describes the process of interaction with foreign security forces that initially involves training and assisting. . . . The next step in the process is advising, which may include advising in combat situations (acting 'through' the forces)."

<sup>2</sup> Perhaps not as self-evident as it may appear, we lifted this central theme from Lieutenant General Stephen Townsend's seminal Tactical Directive #1, his command direction that arguably unlocked unrealized coalition potential for responsive, precision lethality. His message to advisers was "don't make yourself the main effort."

<sup>3</sup> This is also a direct lift from Major General Joseph Martin's overarching guidance to anticipate Iraqi Security Forces' actions and posture nimbly. I first recall Major General Martin emphasizing the necessity of anticipation during the Combined Joint Forces Land Component Command–Operation *Inherent Resolve* Commanders' Conference at Camp Union III in Baghdad in January 2017.

<sup>4</sup> Paul Van Riper, "How to Be in Command and Out of Control by Paul Van Riper 2," YouTube video, 9:19, September 23, 2008, available at <[www.youtube.com/watch?v=Whz-RQfhOITA](http://www.youtube.com/watch?v=Whz-RQfhOITA)>. During his presentation, he offers an alternative title for his thoughts that underscores the complexity of guiding any large, information age institution: "Decision Making in Modern Organizations."



Peshmerga soldier loads ammunition into magazine in preparation for squad-based training near Erbil, Iraq, October 14, 2015, as part of Combined Joint Task Force—Operation *Inherent Resolve* (U.S. Army/Tristan Bolden)

# Sacrifice, Ownership, Legitimacy

## Winning Wars By, With, and Through Host-Nation Security Forces

By John B. Richardson IV and John Q. Bolton

Freedom is not free, and it cannot be won by someone else. History is rife with examples of great powers using their strength, military or otherwise, to assist other nations

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fighting civil wars or insurgencies for both the good of that nation and the power's self-interest. The great power's initial efforts often fail, leading to an expanded commitment and eventual quagmire where the power ends up pouring blood and treasure into a losing cause. In short, the great power overestimates its ability to win peace *for* the weaker nation and allows a limited exertion to become a self-serving justification for further sacrifice.<sup>1</sup> When

Soviet troops crossed the Amu Darya into Afghanistan, for instance, a limited expedition eventually became the catalyst that ended an empire. Likewise, when the Athenians invaded Sicily, they thought their massive force guaranteed a quick victory, but the very size of their commitment caused them to reinforce failure, ultimately suffering an irrecoverable setback.<sup>2</sup>

When assisting host nations, great powers often start small but allow a

pernicious haste to take hold, effectively telling local forces “move out of the way; let us take care of this and you can be in charge after we win.” This is a false narrative; a power that gets both the *ends* and the *means* right can still fail by choosing the wrong *ways* to achieve those ends. Speed and tactical efficiency do not win civil conflict; host-nation legitimacy combined with eventual tactical victory does. These facts necessitate a conditions-based approach.

## Transitioning to a BWT Approach

After more than a decade assisting host-nation security forces, the United States has learned from its mistakes. Despite uneven commitment over the years, the Nation has maintained the political will to continue assistance in Iraq and Afghanistan and has made a strategic adjustment in how it does so. American forces are now helping Iraqis and Afghans win *their* fights, build *their* legitimacy, and earn the right to be seen as the defenders of *their* countries. This transition—from U.S. and coalition forces leading the fight—to providing advisory support and assistance by, with, and through (BWT) host-nation security forces allows the United States and North Atlantic Treaty Organization (NATO) to accelerate recent progress toward their strategic endstates. Specifically, coalition forces seek to train and build host-nation security forces that are capable, competent, sustainable, and seen as legitimate by the population.

This *way* allows the United States to resume its traditional strategic posture to what political scientist John Mearsheimer calls an “offshore balancer” in the Middle East, which allows its combat formations to prepare for other global requirements.<sup>3</sup> If by, with, and through is the way to achieve strategic ends, it also requires particular means and conditions—namely, political will (strategic patience), viable host-nation partners, and realistic goals aligned with the host nation. Importantly, it also necessitates a unique military capability: troops trained and equipped to advise host-nation forces rather than to conduct combat

operations. A BWT approach requires the discipline to leverage traditional American competencies, namely firepower, technology, and excellent logistics, into *advisory efforts* that create local solutions rather than mirror-imaging American methods because the American way of war is rarely right for partnered forces.<sup>4</sup>

The critical question for the great power is determining how it will assist host nations: What ways and means will it apply? Before answering this question, certain conditions must exist. The host-nation government and its national security forces must be willing to own the fight and sacrifice in order to be seen as legitimate by the population. They must have skin in the game. Only once the great power has viable partners who are willing to fight, minimize corruption, and maintain minimum transparency can it determine the scope and scale of its commitment. No amount of foreign support can create these conditions.

The lifeblood of an insurgency is popular support, so the insurgent must delegitimize the government, particularly its security forces, in the eyes of the people. To defeat an insurgency, the government must prove itself legitimate by providing security, good governance, and essential services. Security provided by the host-nation forces promotes national loyalty, stemming from pride in having their fellow citizens fight and win their freedom. The population cannot perceive that their rights, freedom, or livelihood were won by foreign forces and then given to the host-nation government. Sacrifice leads to host-nation ownership and national pride, paving the way to legitimacy. Legitimacy leads to popular support for the government, and then disavowal of the armed opposition, insurgent, or oppressor, and eventual reconciliation between the government and the insurgent. Legitimacy is, therefore, the strategic lynchpin to defeating an insurgency.

## BWT and the American Revolution

Viewed through a modern lens, the American Revolution illustrates how a BWT approach can work. General

George Washington understood that *Americans* would have to fight, bleed, and die for freedom and independence. Consequently, the Revolution depended more on the mere existence of the Continental Army than battlefield victory.<sup>5</sup> Washington knew foreign troops, even mercenaries, could have won tactically, but would fail to achieve the overall strategic goal—an independent America—because victories won by foreign allies would not legitimize the Revolution. He declined early French offers for troops to fight on American soil.<sup>6</sup> A victory provided by foreign troops would have undermined the Continental Congress’s claim to legitimacy. Americans had to make the sacrifices and earn the legitimacy required to win the postwar peace, even at the cost of a longer war. At the same time, Washington understood his Army needed resources, training, and assistance to defeat the British. His officers were not educated or trained in the art of war and needed expert advice, coaching, and mentorship.

Washington embraced a BWT approach as a *way* to utilize French support. He wisely understood that France’s strategic goal in the New World, weakening Great Britain, aligned with America’s goal of independence. While some Americans are familiar with advisors such as France’s Marquis de Lafayette, Poland’s Thaddeus Kosciuszko and Casimir Pulaski, and Prussia’s Friedrich Wilhelm von Steuben, all Americans know it was Washington, Nathanael Greene, and Henry Knox who led the fight for their independence. Americans *own* Valley Forge, Americans *own* Bunker Hill, and, in the end, Americans *own* their freedom. Though French assistance was critical, *Americans* won the war.

Assisting partners is a critical component of by, with, and through, though commanders, strategists, and policy-makers frequently debate its meaning when defining the advisory mission. Assistance comes in many forms ranging from equipment to enabler support (intelligence, fires), and, when operationally imperative, close combat. BWT support is scalable, but the commitment



Iraqi federal police attached to 1<sup>st</sup> Battalion conduct class on squad tactics at Besmaya Range Complex, Iraq, February 8, 2018 (U.S Army/Antonio Lewis)

of host-nation forces cannot be questionable. Though the American Revolution would likely have failed without French support, even at the final American victory at Yorktown, the vital enabler—the French navy—remained largely out of sight. It was an American victory. To American eyes the Continental Army, acting as the tool of a viable government, won independence through its sacrifices during the hard years from Valley Forge to Yorktown. Having earned the public's trust, the Continental Army and militias helped legitimize the nascent American Government.

### Host-Nation Forces Own the Fight

Much the same as France assisted the Americans over 200 years ago, American forces find themselves assisting host-nation forces today. Throughout 2017, we had the unique experience to see the BWT paradigm work in both

Iraq and Afghanistan, albeit using different subsets of the approach. Employing the BWT construct, our forces enabled success without becoming decisively engaged. Could the Iraqi Security Forces (ISF) have defeated the so-called Islamic State (IS) in Mosul without coalition support? No. Can the Afghan government win without coalition advisors and enablers in 2017–2018? Probably not. Nevertheless, our efforts have fostered achievement while not undermining host-nation legitimacy.

An examination of previous security assistance efforts underscores the importance of this change in methodology. During earlier phases of these conflicts, we failed to appreciate the importance of legitimate host-nation forces and the requirement to promote their ownership of the fight. From 2008–2009, I commanded an armored cavalry squadron that was “partnered” with the 54<sup>th</sup> Iraqi Army Brigade. As an Army Armored

Brigade Combat Team (BCT), we were manned, trained, and equipped for combat, not advising. We conducted daily combat operations, achieving good combined tactical effects with our ISF partners, but did little to build their legitimacy. While the ISF improved tactically over 12 months of combined operations, they were no more legitimate in the eyes of the population who saw them as American underlings.

Even after years of experience, we did not understand the importance of a viable host-nation partner who *owns* the fight. Our shortsighted desire for tactical success came at the expense of strategic gains. We developed plans and brought a token Iraqi element along during execution, calling our actions “partnered.” We were first through the door on the objective, we led evidence collection and site exploitation, we led the tactical questioning, and we planned the next target. With reflection and experience, I now



Member of Iraqi federal police holds discarded ISIS headband during offensive to liberate and secure West Mosul, March 2, 2017 (U.S. Army/Jason Hull)

ask myself, “How did our actions look to the population?” and “Who did the Iraqi people see as winning their fight for freedom and peace?” When the United States departed Iraq in 2011, the ISF were trained but did not own the victory. The Nouri al-Maliki regime’s sectarianism further affected legitimacy and left Iraq without the viable government required for long-term success. The IS invasion in 2014 verified our shortsighted approach.

In January 2017, I returned to Erbil to lead the Coalition Strike Cell and manage the enabler contribution to the Iraqi fight for Mosul. By this point, the

combination of a viable Iraqi government, rebuilt ISF, limits on our own force and tactics, as well as lessons learned, enabled us to implement a BWT approach to aid the ISF fight against IS. The BWT construct proved more effective than our previous hands-on method of partnered combat operations with coalition forces in the lead.

A BWT approach comes in many forms and is scalable based on mission and local factors, but the common thread is the location and role of combat advisors. To support Iraqi counter-IS efforts, American forces consisted of a

BCT’s leadership and various special operations units serving as advisors. U.S. Central Command (USCENTCOM) aligned these combat advisors with ISF counterparts to conduct advise, assist, accompany, and enable (A3E), an aggressive subset of BWT with advisors pushed to the division and brigade levels. Some advisors worked in ISF headquarters, some supported Iraqi artillery, and some were forward bringing close air support and intelligence, surveillance, and reconnaissance enablers to the fight.

Regardless of the scale of advising efforts, the Iraqis owned the tactical fight—leading, planning, and fighting the enemy. They were bleeding and dying for their country during intense urban combat against a fanatical enemy. Had you told me in 2008 that over 1,000 Iraqi soldiers would die for their country during a single battle, I would have been incredulous; I never saw that level of sacrifice or ownership during previous tours. However, in 2017, I witnessed Iraqi sacrifice as they won *their* victory and solidified *their* legitimacy in the eyes of the Iraqi people.

Importantly, the Iraqi government was a viable partner. Government officials and the ISF worked with the coalition to achieve measured goals to improve overall governance rather than to enrich elites or a powerful minority. Moreover, the limited *means* we employed were sustainable with the political will available. We provided expert advice, enabled Iraqi maneuver with coalition precision fires, assisted their logistics and intelligence processes, and assured them with our presence and counsel as casualties mounted. When the fight was over, the ISF had defeated IS’s most determined fighters, and the Iraqi people saw the ISF as a legitimate security force that liberated the country.

In August 2017, I took command of Train Advise Assist Command–East (TAAC-E) in Afghanistan. Our mission was to advise and enable Afghan National Defense Security Forces (ANDSF). We partnered with the Afghan National Army’s (ANA) 201<sup>st</sup> Corps and Afghan National Police 202<sup>nd</sup> Zone. NATO’s Operation *Resolute Support* and

USCENTCOM had fully transitioned to a BWT approach of train advise assist (TAA), another tailororable subset of BWT that places advisors at army corps and ministerial levels. As in Iraq, the host nation led the tactical fight, while our TAA efforts helped build capability and capacity by improving Afghan institutional processes. All efforts, both military and civilian, focused on fostering the strategic linchpin of legitimacy. At the tactical level, however, there remained a requirement for combat advisors to conduct warfighting function-based training and staff advising at the brigade and battalion levels.

### **Specialized Combat Advisors**

To meet this need, USCENTCOM will employ the Army's newly created Security Force Assistance Brigade (SFAB) this spring—not to fight the Afghans' fight but to advise ANA brigades and battalions. The SFAB provides the Army the means to more effectively accomplish the way of BWT.<sup>7</sup> In the fight against IS in Iraq, we pulled the leaders out of Army combat formations to serve as improvised advisors. Likewise, special operations forces acted as conventional warfare advisors rather than performing their foreign internal defense (FID) and unconventional warfare (UW) missions. While generally successful, these stopgap solutions did not always generate advisors with the unique skills required to advise most effectively. The most effective BWT approach requires the *right* leaders with the *right* skills for advising, employed in the *right* context.<sup>8</sup> The SFAB will bring this capability to Afghanistan.

SFAB advisors will partner with the ANA at the tactical level, bringing experience, knowledge, and enablers to facilitate advising. By developing a unit specifically manned and trained for advising, the Army is wisely mirroring the Green Berets' FID mission. FID, A3E, and TAA are all tailororable subsets of the BWT approach; while FID focuses on UW, the SFAB will conduct A3E with their conventional counterparts, advising them in combined arms maneuver.<sup>9</sup> The SFAB allows the Army to stop eroding readiness of its BCTs and divisions each

time it deploys BCTs as makeshift advisor teams. This approach will not only enhance advisor capacity but also allow Army BCTs to focus on mission essential tasks required to win the Nation's high-end and hybrid wars.

The SFAB is manned, trained, and equipped with the unique skills and attributes that a BWT approach requires. Making the SFAB a permanent organization means the Army has codified the hard lessons learned over a decade at war. BWT takes patience and acceptance of local solutions. It can be frustrating—the temptation to take the wheel and drive is constant, but combat advisors must have the strategic understanding that the Afghans must win for the Afghans. A good combat advisor understands that his or her contribution comes through advising counterparts by teaching, coaching, mentoring, and assisting when necessary. Combat advisors provide the expertise needed to build viable, legitimate, and sustainable security forces. At the tactical level, Afghans can fight; they need institutional experience and training in logistics, mission command, and staff processes.

### **Strategic Patience**

As the United States enters the 17<sup>th</sup> year of forces deployed to Afghanistan, stability in the country remains important to American strategic goals. Afghanistan provides an enduring counterterrorism platform and a source for critical resources.<sup>10</sup> The BWT way addresses the critical aspects of ownership and legitimacy and supports an offshore balancing strategy because by, with, and through reduces the U.S. footprint. Consequently, a BWT approach allows the military to focus on other threats while minimizing risk to force and mission. Additionally, conditions in Afghanistan have changed. We have a viable partner in a unified Afghan government and ANDSF willing to fight for their country. In 2015–2016, ANDSF suffered heavy losses demonstrating their willingness to sacrifice—in 2017 they took ownership of the fight.<sup>11</sup> In 2018, they will demonstrate their legitimacy by keeping pressure on the Taliban and securing national elections.

Employing a BWT approach requires strategic patience. Resolving civil strife, ending a rebellion, or defeating an insurgency are not quick endeavors. Excessive foreign troops and external money, coupled with a rush to leave, have the potential to exacerbate the situation by delegitimizing the host-nation forces and inflaming local antipathies.<sup>12</sup> The pernicious desire to “let us do it and leave” can cause assisting forces to overcommit and inadvertently disincentivizes host-nation forces from fighting their fight. We end up believing we are winning, when, in truth, we are losing or merely perpetuating a stalemate. To create strategic victory, tactical actions must nest with a broad, sustainable approach.<sup>13</sup> Previously, U.S. forces failed to create this situation in Iraq or Afghanistan; frustrated American and coalition civilian leaders saw 16 1-year wars won at the tactical level, while strategic victory remained elusive.

The past should be a guide. American forces lost few tactical fights against the Viet Cong or North Vietnamese Army, but still lost the war in Vietnam. Early in the war, policymakers felt Military Assistance Advisory Group Vietnam—the BWT command of that war—was taking too long. They were promised a relatively easy victory if America deployed its divisions and took over the fight. After quick success, everyone believed America would withdraw, transitioning control to the Vietnamese.<sup>14</sup> Of course, the government of South Vietnam never achieved legitimacy and the American strategy failed.

By, with, through is a long-term investment. At the same time, the BWT approach can sustain limited political will by reducing the U.S. footprint in the region, forcing local governments to own the fight rather than executing an American-led war. It takes commitment, patience, and time to help man, train, and equip host-nation security forces. It requires discipline on the part of combat advisors to allow host-nation forces to fight at their tempo and within their tactical limitations without taking over. By, with, and through means Afghan or Iraqi ways may not mimic American solutions. Paradoxically, the tactically slower BWT approach is more likely to

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Strategic Forum 299

*China's Future SSBN Command and  
Control Structure*

by David C. Logan



China is developing its first credible sea-based nuclear forces. This emergent nuclear ballistic missile submarine (SSBN) force will pose unique challenges to a country that has favored tightly centralized control over its nuclear deterrent. The choices China makes about SSBN command and control will have important implications for strategic stability. China's decisions about SSBN command and control will be mediated by operational, bureaucratic, and political considerations. A hybrid approach to command and control, with authority divided between the navy and the Rocket Force, would be most conducive to supporting strategic stability.

achieve an enduring strategic victory because it avoids the trap of rushing to overcommit to a faulty strategy.<sup>15</sup> Pursuing a “let us do it for you” approach produces immediate tactical success but may create an endless, open-ended search for a strategic endstate.<sup>16</sup>

## Conclusion

When a U.S. Senator visiting TAAC-E recently asked, “What do I tell the American people when they ask, if we couldn’t win this thing with 150,000 troops on the ground, how is increasing troop strength to 15,000 (from 8,000) going to change the outcome?” My answer was simple, “We couldn’t win with 150,000 troops on the ground here *because* we had 150,000 troops on the ground here.” I went on and explained that thousands of American Soldiers and Marines fighting for Afghan freedom will not win this war, but 15,000 properly trained combat advisors with enabling assets and backed by political will can train, advise, assist, and enable the ANDSF to secure their fellow citizens and legitimize their national government.

What combat advisors, combatant commands, and policymakers must remember is that legitimacy is the desired endstate. Legitimacy is strategic in nature, and not always linked to immediate tactical success. The Continental Army’s battlefield record was initially poor, but they endured and improved; the disasters of Bunker Hill and Brooklyn Heights were followed by victories in Trenton and, eventually, Yorktown.<sup>17</sup> America won because Americans sacrificed and owned the fight, enabled by training, specialized advice, and assistance from our allies. In turn, those allies displayed the requisite strategic patience, political will, and commitment to the BWT approach necessary to demonstrate American ownership, achieve American legitimacy, and secure a strategic victory. With a viable partner in the Afghan National Unity Government and increasingly capable ANDSF, enabled by our advising and assistance and assured by the coalition’s collective political will, BWT can work in Afghanistan if given the time and resources. JFQ

## Notes

<sup>1</sup> Gabriel White, “Prospect Theory and the Problem of Strategy: Lessons from Sicily and Dien Bien Phu,” *Strategy Bridge*, November 3, 2017, available at <<https://thestrategybridge.org/the-bridge/2017/11/3/prospect-theory-and-the-problem-of-strategy-lessons-from-sicily-and-dien-bien-phu>>.

<sup>2</sup> Thucydides, *History of the Peloponnesian War*, ed. Robert B. Strasser (New York: Free Press, 1998), 450.

<sup>3</sup> John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2014), 141.

<sup>4</sup> Colin S. Gray, “The American Way of War: Critique and Implications,” in *Rethinking the Principles of War*, ed. Anthony D. McIvor (Annapolis, MD: Naval Institute Press, 2005), 22–24; Robert W. Komer, *Bureaucracy Does Its Thing: Institutional Constraints on U.S.-GVN Performance in Vietnam* (Santa Monica, CA: RAND, 1972), 1, available at <[www.rand.org/pubs/reports/R967.html](http://www.rand.org/pubs/reports/R967.html)>.

<sup>5</sup> David McCullough, *1776* (New York: Simon & Schuster, 2005), 82.

<sup>6</sup> Lee Kennett, *The French Forces in America, 1780–1783* (Santa Barbara, CA: Praeger, 1977), 24.

<sup>7</sup> Zoe Garbarino, “Infantryman Eager to Connect Previous Army Experiences to New SFAB Brigade,” *Army.mil*, January 5, 2018, available at <[www.army.mil/article/197668](http://www.army.mil/article/197668)>.

<sup>8</sup> Rick Montcalm, “Fourth Time a Charm? The Army’s Chance to Get Advisory Operations Right,” Modern Warfare Institute at West Point, October, 13, 2017, available at <<https://mwi.usma.edu/fourth-time-charm-arms-chance-get-advisory-operations-right>>.

<sup>9</sup> James Linder, Eric J. Wesley, and Elliot S. Grant, “A New Breed of Advisory Team: Security Force Assistance Brigades to Collaborate with Special Operations Forces,” Association of the U.S. Army, June 19, 2017, available at <[www.ausa.org/articles/brigades-collaborate-special-operations](http://ausa.org/articles/brigades-collaborate-special-operations)>.

<sup>10</sup> *National Security Strategy of the United States of America* (Washington, DC: The White House, December 2017), 48.

<sup>11</sup> Maija Liuhto, “The Walking Dead,” *Foreign Policy*, December 12, 2017, available at <[foreignpolicy.com/2017/12/12/the-walking-dead-afghanistan-war-united-states-combat](http://foreignpolicy.com/2017/12/12/the-walking-dead-afghanistan-war-united-states-combat)>.

<sup>12</sup> Komer, 8.

<sup>13</sup> Daniel Ellsberg, *Papers on the War* (New York: Simon & Schuster, 2009), 42–132.

<sup>14</sup> H.R. McMaster, *Dereliction of Duty: Johnson, McNamara, the Joint Chiefs of Staff, and the Lies That Led to Vietnam* (New York: Harper Perennial, 1998), 398.

<sup>15</sup> White.

<sup>16</sup> T.E. Lawrence, *Seven Pillars of Wisdom* (London: Wordsworth Editions, Ltd., 1999), 3.

<sup>17</sup> McCullough.



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Soldier assigned to 2<sup>nd</sup> Brigade Combat Team, 82<sup>nd</sup> Airborne Division, checks mortar data during fire mission in support of 9<sup>th</sup> Iraqi Army Division near Al Tarab, Iraq, during offensive to liberate West Mosul from ISIS, March 18, 2017 (U.S. Army/Jason Hull)



# Laying the Foundation for a Strategic By-With-Through Approach

By Edward F. Dorman III and Christopher P. Townsend

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In a recent *Joint Force Quarterly* article, General Joseph Dunford stated, “allies and partners are our strategic center of gravity.”<sup>1</sup> This is also true at the operational level, as our partnerships allow us to “project power when and where necessary to advance national interests.”<sup>2</sup> He went on to describe how U.S. global leadership and the competitive advantage it enjoys

are inextricably linked to our extensive network of partners and allies, which the Nation has leveraged since World War II. This legacy continues at U.S. Central Command (USCENTCOM) as it maintains a strong coalition of 28 nations with boots on the ground at the operational and tactical levels to bring about the military defeat of the so-called Islamic State. As one might

imagine, the need for interoperability across all warfighting functions is critical. Moreover, logistics interoperability—meaning common sustainment practices and processes—is an especially critical enabler for a strategic by-with-through (BWT) approach.

This article examines logistics interoperability as a critical but often underestimated factor of coalition warfare, which has links across joint, interagency, intergovernmental, and multinational environments. Logistics interoperability is critical to the future success of global operations responding to transregional threats, but it requires dedicated efforts in logistics security cooperation to build the foundation for a strategic BWT approach. The real question, however, is whether the United States can afford the cost of ownership of such a strategy. The ultimate answer is yes, but this requires a comprehensive review of our current process and approach to security cooperation. The foundation of this enhanced security cooperation rests on improved logistics interoperability and enhancement of our current processes and associated authorities.

RAND defines *interoperability* as “the ability of systems, units, or forces to provide services to and accept services from other systems, units, or forces, and to use the services so exchanged to enable them to operate effectively together.”<sup>3</sup> The North Atlantic Treaty Organization definition of interoperability is the ability of “different military organizations to conduct joint operations,” noting that common equipment is not necessarily required so long as the procedures, access, and communication are present to facilitate combined operations.<sup>4</sup> British Army Major Susan Carson suggests that interoperability must be more than coordination and cooperation, stressing the necessity of interoperable communications systems.<sup>5</sup> All of these definitions focus on the ability of disparate forces to operate together in a common space.

While security cooperation is a critical tool for enabling interoperability and BWT options, it usually focuses on materiel solutions sourced through the foreign military sales process, with a short

sustainment case to ensure the initial operating capability. However, achieving true interoperability that maintains the U.S. competitive advantage can occur only through an enhanced understanding and analysis of partner nations’ logistics capabilities to include its systems, processes, and people. It is critical that we move beyond the traditional “sharpen the spear” applications focused on training and equipping combat systems. We must commensurately invest in developing true partner capacity with an interoperable logistics enterprise as its lifeblood to move us beyond the field level and simultaneously develop the sustainment level through a long-term view of life-cycle management.

## Why Interoperability?

The increased emphasis on a BWT strategic approach requires the world’s militaries to become more interoperable. Success in warfare requires militaries to develop and maintain reach, endurance, and lethality; sustainment underpins all three because it directly relates to our level of investment in materiel, capability, capacity, and resiliency. Global threats require us to rise beyond the capability of any one of our national industrial bases and sustainment pipelines. This is not a USCENTCOM problem but one that requires a truly globally integrated logistics enterprise across all combatant commands, agencies, and partners. In 1966, Geoffrey Blainey popularized the phrase *tyranny of distance* to talk about how remoteness in geography can create challenges.<sup>6</sup> Logistics interoperability and focused logistics security cooperation efforts can help overcome this tyranny through interoperable communications systems, common services, commodity-sharing, cooperative agreements, and aligned sustainment processes at all echelons.

Operations around the globe continue to grow more complex, but interoperability efforts to date have primarily focused on the tactical and operational levels of warfare, on maneuver instead of the twin foundations of projection and sustainment. We have shown

that we can build, field, and fight with partner brigades in Iraq, Afghanistan, and Syria; however, the costs of advising, assisting, accompanying, and enabling are almost prohibitive in the early stages. A strategic BWT approach could create offshore balancers allowing the United States to husband its organic capabilities for response to high-end threats.

Experiences in Afghanistan, Iraq, and Syria continue to illustrate the long-term costs that underpin a BWT strategic approach. Partner support in contingency operations is largely resourced with short-term programmatic, single-year funding, ad hoc requirements submissions, and an ad hoc approach to balancing partner needs with U.S. needs. As a result, the Services, combat support agencies, and our other national providers are constantly engaged in tough resource decisions among competing top priorities. We consistently see this with commodities like tactical vehicles and munitions. What may not be so obvious, however, is that our current approach to supporting a BWT approach severely hampers long-term expansion of our industrial base capacity, Service reset strategies, and other Service investment objectives. Today, we have had to implement global controlled supply rates for precision-guided munitions because the consumption rate in current BWT fights has doubled the traditional U.S. expenditure rates.

It is time to elevate the conversation. There are ongoing simultaneous multiphase operations in multiple theaters. Threats manifest globally (China, Russia, North Korea, Iran, and violent extremist organizations), and many of them hover below the threshold of outright war in a gray zone that we must adapt to. Stability is essential to security, and logistics interoperability is crucial to enabling all nations to contribute to that stability. Humanitarian assistance and disaster relief efforts require us to be interoperable to better assist each other in times of need. Unfortunately, it is a rare event when even Foreign Military Sales-equipped partners have arrived mission-ready without ongoing U.S. enablers and sustainment, or any real capability in



Commander of Special Operations Joint Task Force—Operation *Inherent Resolve* provides assistant gunner support to member of 5<sup>th</sup> Special Forces Group during counter-ISIS operations in southern Syria, November 22, 2017 (U.S. Army/Jacob Connor)

life-cycle management for their systems. The ongoing requirements of global peacekeeping operations and borders increasingly threatened by transnational and transregional threats require us to work together to lay the foundation of this critical strategic center of gravity.

We must integrate to address these challenges, for our ability both to counter threats and to facilitate the creation of multiple dilemmas for our adversaries. In the immortal words of Benjamin Franklin at the signing of the Declaration of Independence, “We must, indeed, all hang together or, most assuredly, we shall all hang separately.”<sup>7</sup> Or as Dave Cate, director of Assessments, Monitoring, and Evaluation in the Office of the Secretary of Defense, told attendees at a recent Logistics Interoperability Symposium, “we have to walk together and not just in the same direction.”<sup>8</sup> Logistics interoperability will help integrate commercial industry (depending on the maturity of the partner’s industrial base) with military

institutions, develop cross-ministerial relationships, mature civil-military relationships, and provide economic capacity far beyond the military sphere and tactical echelon. The good news is that we have repeatedly demonstrated our ability to work together as coalitions to address shared challenges.

### **Building Partner Capacity**

Over the last couple of years, we have improved our ability to work by, with, and through our partners through concerted logistics interoperability improvements and efforts to build partner capacity. In the USCENTCOM area of responsibility, we have integrated partners in the provision of logistics through the reinvigoration and usage of multipartner ground lines of communications such as the Northern Distribution Network in Central Asia and the Trans-Arabian Network in the Persian Gulf. We have exercised interoperability through joint multina-

tional exercises in Jordan and Kuwait. U.S. Africa Command stood up the Kofi Annan International Peacekeeping and Training Centre in Accra, Ghana, with many programs that will increase capability and interoperability through a shared understanding of the problems while providing the tools with which to address those problems.

U.S. Southern Command has been working diligently to communicate the importance of reciprocal agreements and has had success with several countries that had previously been reluctant to sign agreements with us. U.S. Pacific Command has been conducting partner training on how to better use agreements to achieve interoperability and conducting multiple multinational exercises such as the Rim of the Pacific and Talisman Saber exercises.

U.S. European Command has helped to establish critical prepositioned stock locations in several countries to create a common equipment set that we can

draw from in times of need. It has also developed basing and port options that directly contribute to our efforts worldwide. U.S. Northern Command has worked hand in hand with the United Nations to provide capabilities that have directly contributed to expanding the reach of the World Food Programme through equipping and training partner forces for humanitarian assistance and disaster relief operations.

Many of our partners have fought by our side in Iraq and Afghanistan. Others are demonstrating the fruits of combined efforts by conducting humanitarian, peacekeeping, and even combat operations on their own. Efforts such as the National Defense University in Kazakhstan and the Center of Excellence for Logistics in the United Arab Emirates demonstrate our partners' resolve to strengthening the military as a profession and a pillar of their societies. Critical tools such as defense institution-building and the vertical integrated logistics approach help develop a shared understanding of the challenges and requirements for future success. Key leader engagement is occurring every day all over the world, whether at U.S. Embassies or through the efforts of combatant and component commands. We have to take the paradigm for intelligence-sharing and apply it across the enterprise to things such as supply chains and support services, thereby building truly interoperable partnerships.

We need to understand our partners challenges and successes, especially where capacity developed through U.S. interoperability efforts have led to improved unilateral operations for their forces. It is not an all-or-nothing approach. We must also be cognizant of partners who offer a niche capability that they can contribute to the fight. A core requirement for the BWT approach is ownership because partner legitimacy cannot exist without ownership. U.S. ownership does not create partner legitimacy; it carries with it higher costs and does not incentivize self-sustainability. While tradition holds that military logistics is a national responsibility, a quick survey of the history of warfare finds that nearly all war is coalition-based. It is no

longer realistic to expect that a single nation's logistics enterprise can sustain a diverse multifront, simultaneously multiphased, multinational operation. Even the American system is beginning to show signs of strain with operations in the Middle East and a growing need to focus on South Asia. While we have achieved success at the tactical level through a massive outlay of enablers, we have consumed our own strategic readiness in the process. The ability of any one nation to commit to and sustain operations within and outside its borders is limited by its national resources and the strength of its logistics enterprise. In coalition operations, however, nations can pool resources and share supply chains greater and faster than any could undertake on their own. Geography is a crucial factor, but true interoperability—based on our efforts to build partner capacity—can shrink the globe.

### **Enduring Challenges**

Building partner capacity (BPC) is more than just providing systems and equipment platforms. We have to pay equal attention to the human elements as well as enduring sustainment requirements. Too much of our focus has been on equipment, and not enterprise and institutions. We provide contract solutions focused on performing a function rather than building a capacity, much like sending a fisherman instead of a fishing teacher. A recent Government Accountability Office report found that barely one-quarter of America's BPC efforts even considered logistics and sustainment, and only 1 out of 15 security cooperation officers (military officers charged with security cooperation management and execution at many U.S. Embassies) interviewed believed that their assigned country could sustain itself in unassisted operations.<sup>9</sup> We need to look beyond the tactical successes of current BWT efforts. We must expand the aperture and work before, during, and after our capacity-building efforts to assemble the strategic infrastructure, systems, and processes that can sustain and consolidate the tactical gains and lead to long-term sustainability.

The lack of infrastructure maturity is another limiting factor. We need to work more on creating the kind of infrastructure that can support a globally integrated logistics enterprise. Whether it is through common procedures or equipment along transportation routes or in solutions that minimize the seams between countries and regions, we must look at the enterprise as a system that, even with disparate parts, must work together. This means focusing on the agreements and authorities that enable us to work through multiple partners simultaneously to accomplish the mission. Cyber and other shared spaces are increasingly relevant and will continue to present new threats as our enterprises become more integrated and interoperable. Flaws and weaknesses in one part of the shared networks necessary to achieve interoperability are a threat to the entire enterprise. With the rise of antiaccess/area-denial threats, truly capable partners can reduce reliance on vulnerable transportation systems for force projection and sustainment by developing alternate means of supply and sustainment.

Simply pulling blood out of the "blood and treasure" model of warfare magnifies the treasure requirement while sacrificing the infrastructure and economy of scale inherent in the U.S.-centric method. Advise, assist, and accompany efforts work at a tactical level but are facilitating a false narrative of sustainability within the partner force because it creates a logistics dependency. While we try to let partners take the lead in our current operations, we are still doing sustainment for them in the interest of speed and efficiency. We underestimate the true costs of our efforts to create speed and tactical efficiency, while ignoring the development of a truly interoperable partner.

### **Vision for the Future**

The future of logistics security cooperation is a truly integrated global logistics enterprise (GLENT) that we can rapidly expand or contract depending on operational requirements, wherein each partner can contribute to and benefit from our collective strength and capability. This global logistics enterprise can be

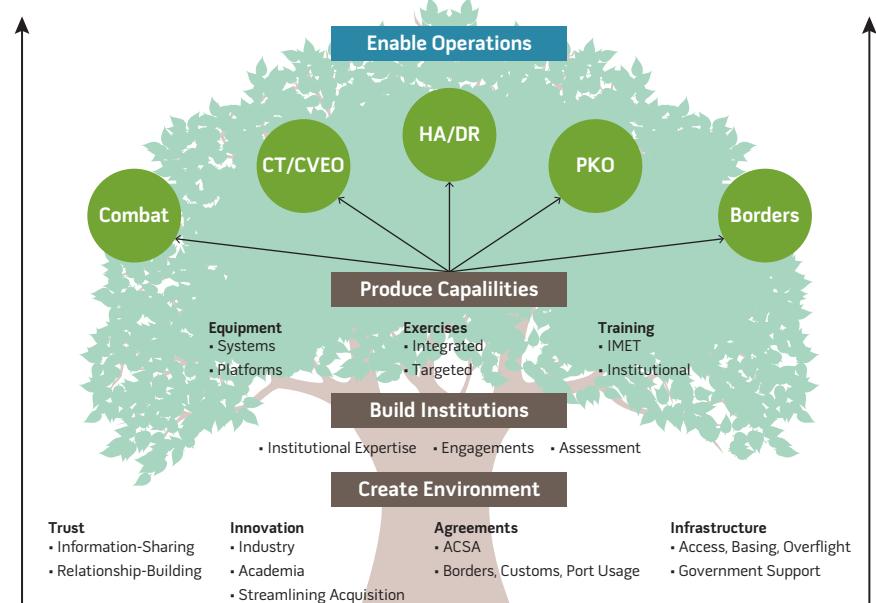
thought of as a tree rooted in a cooperative logistics environment that builds our partners' institutions to produce capabilities that enable operations (see figure).

**Roots.** The base of the tree—the critical roots that globally integrated logistics draws its lifeblood from—consists of four key areas that collectively establish the logistics environment that our interoperability will grow on. This is the core foundation that our efforts must be built on to avoid the continued creation of high-end combat unit that are unsustainable.

First, we have to focus on trust and information-sharing. Unless we truly integrate and synchronize our efforts, we cannot move forward. We have to be honest with each other about capabilities and limitations so that we can address our internal challenges before they consume strategic readiness. The policy is in place, but our current efforts are not as good as they should be. The first step to integration and interoperability is communication, which means we have to take responsibility for our own narrative.

Second, we have to leverage the innovative potential of industry and academia to transform our processes and break out of stovepipes. Efforts such as the Defense Innovation Unit–Experimental and SOFWERX, programs that seek to break free of traditional acquisition strategies by exploring and implementing solutions from industry and academia at the speed of technology, should be our models. We are exploring this possibility at USCENTCOM through a LOGWERX program and an upcoming symposium where we intend to communicate some of our challenges to industry and academic leaders in an effort to gather potential solutions from outside our sphere. New ways of war will require new responses to logistical challenges and innovative views on the capabilities and methods. We must integrate to the extent possible respective industrial bases in our planning as a critical contributing factor to sustainment capabilities. Maximizing the industrial base requires accurate assessment and forecasting, along with an understanding of the demand signals that drive production. A lower cost of

**Figure. A Global Logistics Enterprise**



ownership could be achieved through a new understanding of requirements and recognizing the potential for expanded capacity or materiel production.

Third, interactions are all within the limitations of our various political systems. As such, we must have a concerted effort to build a deep and lasting network of agreements from which we can conduct the exchanges necessary for true interoperability—both in terms of logistics agreements, as well as access, basing, and overflight. When time is a critical factor, we must already have these agreements, even if they are not in daily use. We need to be able to turn capabilities on and off quickly and cannot be constrained by a lack of previously agreed-on allowances. This process not only develops intergovernmental relations, but it will also improve interministerial and interagency relationships as we lay the foundation for improved communication and cooperation.

Finally, with shared operations come shared spaces. We have to transcend the lines on the map that divide our nations and work together to develop the infrastructure and border crossing, customs, and port usage necessary to operate as a truly combined force. The economic benefits to all of us from

improved capabilities at ports and increased interoperability and interaction are an important consideration when convincing our partners of the value of these efforts. Historic transportation networks such as the Dwight D. Eisenhower National System of Interstate and Defense Highways and its inspiration of the Reichsautobahnen in Germany both demonstrate how defense infrastructure can have far-reaching national and global economic benefits.

**Trunk.** With the roots firmly established, we must turn our attention to the core strength of the tree. The trunk of the GLENt underpins our military's operational and tactical prowess. While some force improvement is possible during operations, our partners come to the fight with the tools and skills developed prior to the conflict. We will need to assess the capabilities of current and potential future partners in an effort to identify areas to improve partner capacity. BPC is essential to maximizing the contributions of coalition partners but must have clearly understood starting and ending points. BPC efforts will vary with the level of partnership, for example, our five-eyes partners versus less mature government partners or even surrogate forces. Partner capacity carries with it the

seeds of further improvements as capable partners can help develop others, creating a cascade of improvements and increased interoperability.

Tools such as defense institution-building and the vertical integrated logistics approach are critical to identifying and resolving potential weaknesses in our systems, particularly when considering interoperability. When we are assessing and developing from a common framework, we cannot help but become more closely aligned. BPC includes coordination of resources with multinational partners as well as intergovernmental and nongovernmental organizations. BPC improves unity of effort within the entire joint logistics enterprise and is an essential component of joint and coalition operations; individual Services and partner nations seldom have sufficient capability to support a joint coalition force independently. BPC is an ongoing, long-term relationship development process that may not yield immediate results, but, if carried out as suggested, can quicken the training and equipping of a partner force or allow coalition partners to share the cost of ownership burden. Regardless of the potential lack of quantifiable results, there are qualitative benefits that come through investment that may not manifest for years.

Key leader engagements and subject matter expert exchanges are another tool for aligning our efforts and sharing our experiences, both successes and challenges. It is through targeted engagement that we will grow together and further strengthen the trust that our combined fates rest on. A long-term engagement strategy must be the guide rather than random visits based on proximity and other travel obligations. A global program similar to the U.S. Pacific Command's Area Senior Officer Logistics Symposium and the USCENTCOM Gulf Cooperation Council Logistics Interoperability Symposium that builds on a series of regional symposia would go a long way toward developing global logistics expertise.

**Branches.** From this trunk rise the three primary branches that support operations through a globally integrated logistics enterprise. These are the key

activities in which we must continue our engagement if we are ever to create the capabilities necessary to recognize the fruits of our efforts.

The first branch is common and interoperable equipment. Our security cooperation efforts have always been successful in this regard, but for too long the narrow focus has been combat capabilities. Even then, our model is more akin to a rental car operation where we provide partners with equipment and replace it when unserviceable, leaving sustainment and support to contracted solutions that belie the true requirements and create a dependency and an enduring weakness. We have to consider the equipment, systems, and platforms that will enable an interoperable logistics effort to sustain combined operations. Whether munitions tracking and forecasting systems or transportation and engineering equipment, the closer we can align our equipment needs and operations, the better we can integrate and operate collectively.

The second branch is the exercises necessary to develop our capabilities and create best practices from which to conduct operations. Logistics cannot be an afterthought in these exercises as it has been in the past. Our focus is not only on how we might tactically supply and sustain these exercises, but also on how logistics can become a focus of exercises without detracting from the warfighting objectives. We must work to eliminate the idea of "magic fairy dust" assumed of most logistics considerations that atrophies operator understanding of the true logistics workload associated with BWT operations. Planners must be at the table early and often to ensure that they are exercising at a realistic and stressful level so that we can test and improve our capabilities and identify challenges in training that could prove devastating if we wait until operations to discover them.

The final branch is the training necessary to develop and integrate our individual logistics enterprises. We must better leverage great programs like International Military Education and Training to train the logistics professionals on whom we will rely to support and enable operations. Mobile training teams

are another powerful tool that we need to leverage for more than just operator-level training. We need a focused effort to simultaneously train the individuals who will shape and run the sustainment level of a globally integrated logistics enterprise. Their familiarity with systems and processes—combined with the shared knowledge of how we work together—is a key component of interoperability and is essential to true integration. It will clarify the true cost of ownership while building long-term capability and reducing U.S. resource requirements, thus maintaining U.S. readiness and capacity to address higher end strategic threats.

**Canopy.** The canopy of our tree—grown dense and capable through our efforts to create a sound root structure, solid trunk, and strong branches that it can rest on—represents our combined operational capacity. The fruits that this operational capacity can sustain include combat operations, humanitarian assistance/disaster relief, peacekeeping operations, border security, counter-terrorism/countering violent extremist organizations, and any other operational requirement. Because we are integrated and interoperable, we can seamlessly execute these operations while minimizing domestic costs and risks to our operations. We can, as General Dunford stated, "rapidly and flexibly project power across the globe, effectively cheating time and space."<sup>10</sup>

Modern operations are a coalition effort. We must continue to leverage our combined capabilities to streamline our services and support while eliminating overlaps that result in waste. We must pay particular attention to the seams between our operations to ensure that no critical capability goes unaddressed. These investments are twofold. They both improve our capabilities and reduce the risk to future operations. Our efforts to establish a collaborative interoperable logistics partnership will pay dividends far into the future where we become more than the sum of our parts.

## Challenges

Much as a tree does not grow overnight, developing a GLENt that creates

and enables global operational capacity will require concerted effort, attention, and resources to include time. There will be technical, organizational, and political challenges to grow a fully capable integrated GLENT. Our differing practices, lack of interoperability, and political environments are challenges. While we may have little say on the political wrangling between nations, we can surely work toward improving interoperability and standardizing practices. We must build partner capacity by leveraging a whole-of-government approach that lays the foundation and reduces the cost of ownership to a sustainable level, whereby any future need is addressable with a solution that is ready to start and drive.

Not all the steps from here to there are under our control, but we must develop a common understanding of objectives. We must make the case to political leaders for the necessary authorities and resources to develop the critical infrastructure to future multinational operations. We have to present a clear and compelling narrative to national leaders and ministries of the risk posed by continuing to fight in stovepipes without doing the hard work to integrate capabilities, sacrificing future strategic readiness for today's tactical success. We need a global security cooperation strategy and manager to execute a deliberate security cooperation process—a *global integrator* to use the language in the new National Defense Strategy.

This process cannot be undertaken blindly. We must establish the signposts along the road that will get us to this vision. We must identify quantifiable activities that we can undertake as we work toward interoperability. We should establish azimuth checks along the way to ensure we are on the right path, whether they be virtual or in regionally focused symposia. These opportunities will allow us to assess our progress and refocus if necessary on the way ahead.

A truly integrated and interoperable global logistics enterprise will provide enhanced readiness across physical and political boundaries, allowing us to modernize enterprises and balance

requirements for external contracted support. We must move forward, especially at the strategic level, to begin building the framework on which our interoperability and future success depend. We must also consider the capabilities of our partners and the maturity of our relationships. Interoperability efforts with mature partners may be less appropriate for those with whom we operate on a bilateral agreement or contingency basis.

## Conclusion

While we have made progress, we have further to go. We will take that road together and all be stronger and better off for having made the journey. It is important that we look for and implement the best advice, but we must consider how to best apply lessons learned to this unique enterprise. Blindly trying to modify our actions without a clear understanding of the goal and frequent azimuth checks is a clear path to frustration. There is a story that illustrates the dangers of blindly striking out without a clear understanding of our goals:

*Ole and Sven are out hunting in Minnesota and they shoot a deer. They begin dragging the deer back to the truck by the tail, but they keep slipping and losing both their grip and their balance.*

*A farmer comes along and asks them, "What are you boys doing?" They reply, "We're dragging the deer back to the truck." The farmer tells them, "You are not supposed to drag a deer by the tail. You're supposed to drag it by the antlers." Ole and Sven begin pulling the deer by the antlers. After about 5 minutes, they are making rapid progress. Ole says to Sven, "Sven, that farmer was right. It goes a lot easier by the antlers." Sven replies, "Yeah, but we're getting farther and farther from the truck."*

Our challenge is clear. We have to take this global logistics enterprise by the antlers and take it in the direction we know it needs to go, together. Future joint and coalition operations require us to set the globe now through concerted logistics security cooperation efforts targeted at developing true logistics interoperability among

all partners. Logistics interoperability developed through concerted efforts to build partner capacity through logistics security cooperation can supercharge BWT outcomes so long as it is rooted in partner ownership to create legitimacy. A strategic BWT approach based on building partner sustainment capacity and interoperability as opposed to our current tactical and operational BWT approach will establish the solid foundation that will allow us to recognize savings in the costs of ownership. By establishing concrete steps for the journey ahead and clearheaded assessments of the needs and outcomes of our efforts, the marriage of logistics and security cooperation will provide benefits for years to come. JFQ

## Notes

<sup>1</sup> Joseph F. Dunford, Jr., "Allies and Partners Are Our Strategic Center of Gravity," *Joint Force Quarterly* 87 (4<sup>th</sup> Quarter 2017), available at <<http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-87.aspx>>.

<sup>2</sup> Ibid.

<sup>3</sup> Myron Hura et al., *Interoperability: A Continuing Challenge in Coalition Air Operations* (Santa Monica, CA: RAND, 2006), 7.

<sup>4</sup> *Background: Interoperability for Joint Operations* (Brussels: North Atlantic Treaty Organization Public Policy Division, 2006), 1, available at <[www.nato.int/nato\\_static/assets/pdf/pdf\\_publications/20120116\\_interoperability-en.pdf](http://www.nato.int/nato_static/assets/pdf/pdf_publications/20120116_interoperability-en.pdf)>.

<sup>5</sup> Susan Carson, "The Road to Interoperability," *Army Logistician* 41, no. 1 (January–February 2009), available at <[www.almc.army.mil/alog/issues/JanFeb09/road\\_interop.html](http://www.almc.army.mil/alog/issues/JanFeb09/road_interop.html)>.

<sup>6</sup> Geoffrey Blainey, *The Tyranny of Distance: How Distance Shaped Australia's History* (Melbourne, Australia: Macmillan, 1982).

<sup>7</sup> Quoted in Jared Sparks, *The Works of Benjamin Franklin* (Boston: Hilliard, Gray, and Co., 1840).

<sup>8</sup> David Cate, "Security Cooperation as a Critical Enabler for Logistics Capacity Building," speech, Oberammergau, Germany, August 29, 2017.

<sup>9</sup> U.S. House of Representatives, Committee on Armed Services, Testimony of Janet A. St. Laurent, *Building Partner Capacity: Key Practices to Effectively Manage Department of Defense Efforts to Promote Security Cooperation*, GAO-13-335T (Washington, DC: Government Accountability Office, February 14, 2013).

<sup>10</sup> Dunford.



Volunteers from Defense Language Institute Foreign Language Center, Naval Post Graduate School, and Middlebury Institute, along with cultural performers from all over California, celebrated Monterey's 3<sup>rd</sup> Annual Language Capital of the World Festival on Sunday, May 7, 2017 (U.S. Army/Amber K. Whittington)

# Why Not a Joint Security Force Assistance Command?

By John Francis Jakubowski

The *David L. Boren National Security Education Act of 1991* provides that the future national security and economic well-being of the United States will depend substantially on the ability of its citizens to communicate and compete by knowing the languages and cultures of other countries.<sup>1</sup> Consistent with the law,

implementation guidance over the years has been clear, and increasingly more urgent. Consider the following statements.

President Barack Obama laid out a vision of a nimble, well-armed, and multilingual fighting force of the future—but not the one that was built to fight land battles against the Soviets in Europe. President Obama stated, “In the 21<sup>st</sup> century, military strength will be measured not only by the weapons our troops carry, but by the languages they speak and the cultures they understand.”<sup>2</sup>

Then-Central Intelligence Agency Director Leon Panetta stated, “Language skills are the keys to accessing foreign societies, understanding their governments and decoding their secrets.”<sup>3</sup> Chairman of the Joint Chiefs of Staff Mike Mullen stated, “No training is more crucial to the U.S. military than education in critical foreign languages and cultures . . . the flexibility of language training in the military underscores the state of global flux.”<sup>4</sup> And finally then-General Stanley McChrystal stated, “Language training is as important as marksmanship, medical,

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unit drills, physical fitness, and other key training that you will conduct prior to deploying to Afghanistan.”<sup>5</sup>

There is no question that the ability of Servicemembers to communicate and connect on some level with multinational partners, security forces of other nations, and indigenous populations can be a key element of combat mission success.<sup>6</sup> But expectations regarding the definition of the word *success* for future military operations represent a challenge that the Department of Defense (DOD) should embrace and shape. So far, the right attention has not been paid to the strategic usefulness of foreign language training, civil-military operations, and the need to develop regional cultural experts.

The Government Accountability Office (GAO) has repeatedly recommended that DOD adjust and improve the visibility and sustainment of language and culture training. In response, the Services have seemingly retreated to their respective and frequently duplicitous stovepipe processes to assess their Service-specific strategic language needs and training focus areas. Generally, each Service funnels language training requirements through various Service- and DOD-level training and personnel systems. Eventually, the Defense Language Institute Foreign Language Center (DLIFLC) receives an annual student input. Pursuant to special statutory authority, DLIFLC hires language faculty, many of whom are noncitizen natives from particular countries of interest. The process is complicated and time-consuming, as shifting and competing policies and priorities clash with recruitment and faculty employment efforts.

DLIFLC trains approximately 3,500 Servicemembers annually to an established standard of proficiency in listening, reading, and speaking modalities.<sup>7</sup> The level of skill or proficiency in these areas is measured on a scale of 0, which equates to “no proficiency,” to 5, which would suggest “native country proficiency.”<sup>8</sup> There are students in eight different undergraduate education schools that teach up to 40 different languages.

The graduation standard at DLIFLC is set at level “2+/2+/2.” This means

that a student must achieve a 2+ in language, a 2+ in reading, and a 2 in speaking on the Defense Language Proficiency Test. Students who meet this standard on the aptitude tests are the cream of the crop. These students typically are slated for tours of duty in an intelligence capacity. Those who do not meet the standard find their way back to their respective Services for use in whatever capacity the military deems appropriate.

The cost to operate the DLIFLC’s language and training mission is about \$300 million annually.<sup>9</sup> This figure does not include what the Army spends to maintain the Presidio of Monterey, California, which is in one of the highest cost-of-living areas in the country. Maintenance of the installation includes expenses to keep operational barracks, administrative buildings, grounds, dining facilities, health and dental clinics, and recreation facilities. In addition, investment spending to build new barracks and dorms, dining facilities, and other things is another substantial cost.

The primary beneficiary of DLIFLC efforts are intelligence activities and agencies, not the regional combatant commanders. The needs of combatant commanders are separately managed by the Army as DOD’s executive agent, a role the Army assumed in 2005. The Army spent about \$5.2 billion from 2008 through 2012 to acquire translation and interpretation services for various contingency operations.<sup>10</sup> In addition, the GAO has noted that language and culture training to support the needs of contingency operations, predeployment training, and day-to-day military activities are also separately handled by 159 contracting organizations in 10 different DOD components.<sup>11</sup> These activities obligated approximately \$1.2 billion on contracts for foreign language support during the same time period.<sup>12</sup>

### Think Jointly

The process of enrolling and training students at DLIFLC, coupled with the complications associated with managing multiple foreign language training interests and needs across the military

Services, suggest a renovation and strategic relook is necessary, particularly when installation operation and maintenance expenses and investment spending are added to the calculus. But instead of strategically assessing future language and culture training needs to meet probable missions, the Army is moving forward with more of the same: contracting for language training and translation services on an ad hoc basis.

As an example, the Defense Language Interpretation Translation Enterprise (DLITE) program is an Army acquisition effort awarding multiple contractors nearly \$10 billion through 2027 to provide interpreting, translating, and transcription services for missions across the globe.<sup>13</sup> DLITE provides contractual coverage for the support of forces engaged in humanitarian, peacekeeping, contingency, and combat operations. It also provides contractual coverage for exercises and cultural familiarity and awareness missions in performance of day-to-day operations. The contract was awarded by the Army Intelligence and Security Command in March 2017 and, apparently, will be the go-to vehicle for foreign language support services and capabilities needed to meet new, ongoing, and changing mission requirements.<sup>14</sup>

The award of the DLITE contract resulted in a great deal of fanfare. According to press releases, the acquisition team worked through countless long hours to develop, solicit, review, and select the best contract for the Army. The team’s efforts amounted to 2.5 years of accumulative man-hours, reviewing over 8,700 pages of procurement sensitive information.<sup>15</sup> The expense of putting together such a procurement must have been enormous, but in the end, there is nothing particularly innovative about procuring interpretation and translation services. The reality is that the contract is a temporary solution rather than a focused reassessment of the strategic value of language and culture training. New mission imperatives, highlighted by the establishment of the Army Security Force Assistance Brigades (SFABs), demonstrate the need for a strategic relook of

security force assistance missions and how language and culture training fit.

It is interesting that efforts to elevate and focus on language and culture training as a strategic imperative is not isolated to DOD. The GAO has issued several reports highlighting the Department of State's persistent foreign language shortfalls.<sup>16</sup> The ongoing difficulties at State along with those at DOD identified by the GAO in the management of language and culture training processes, and meeting language service needs around the world, would seem to warrant an exploration of new strategic approaches. Yet it does not appear that much is being done to partner across the military Services, much less across the Federal Government.

Partnering is a focus du jour in the Army and across the military Services. Partnering initiatives with private entities, communities, and local and state governments are frequently, and often mistakenly, touted as win-win solutions to perceived difficulties associated with some contracting processes. These days if you are partnering with an entity—whether public or private—to meet a requirement or mission need, it is viewed as progress, even though the overwhelming evidence indicates that best values are achieved when the private sector or state and local governments have to compete to deliver a product or service. Creativity and a “sharp pencil” (that is, finding a way to lower the price) forced by competition typically result in better quality and reasonable prices.

DOD does not seem to apply the same vigor to collaborations and partnering across the Services or with other Federal agencies. There is, however, a shared mutuality of interest regarding security assistance missions and language and culture training among the Services and across the Federal Government. This is not always true of the partnering initiatives and agreements with state and local governments and private entities often pushed by the Services.

Part of the problem with the lack of partnering, as it pertains to security force assistance challenges and future language and culture training, is that the Services

have not been forced to think jointly. The Army, by and large, owns the security force assistance mission. And as the DOD executive agent of language and culture training programs, it is saddled with an impossible task of coordinating Service-unique interests and needs. The Army has all of the responsibility but no means to effectively manage and control the other Services' language and culture training approaches. Each Service develops its own language training doctrine and educational needs, resulting in duplicity, competing efforts, and overlap.

As a rule of law advisor in Afghanistan, my observation of the Army's approach to communicating, understanding, and “decoding” Afghan society may be best described as a plug-and-play process that often did not foster relationships or communication. Instead, combat units attempted to adapt by assuming roles for which they were not trained adequately. My mission brought me in regular contact with State Department officials who were engaged in activities that were ultimately directed toward the same objective (that is, to develop judicial capacity and trust in the military and government). Our mission activities, specifically communicating and connecting with Afghans at various levels and capacities within the government and the Afghan National Army, overlapped and at times conflicted in execution, resulting in frequent confusion and mixed messages.

The creation of SFABs and the DLITE contract may serve the Army well. A broader focus, though, is necessary. Army Chief of Staff General Mark Milley is right on target with the creation of SFABs as a strategic requirement that will shape the success of future contingency operations.<sup>17</sup> Now, the rest of DOD needs to follow his lead.

### **The Security Force Assistance Command**

A joint, functional Security Force Assistance Command (SFAC) should manage security force assistance needs of the combatant commanders and have management oversight of language and cultural training requirements

across DOD. SFAC should mirror to a significant degree the State Department's Foreign Service Institute, be jointly resourced, and be structured and staffed to ensure flexible and responsive support to combatant commanders, while at the same time meeting the more enduring, long-term needs of the Intelligence Community. Initial approaches to standing up the SFAC might proceed as follows.

First, we should recognize that our performance of security and assistance missions of the recent past—specifically in Iraq and Afghanistan—indicate inadequate language and culture training of Soldiers and other Servicemembers. We can do better.

Second, there is clear recognition, certainly within the Army, of the challenges associated with security force assistance mission requirements. SFABs are a step in the right direction. Six SFABs are planned, along with a Military Advisor Training Academy at Fort Benning, Georgia. The academy will train Soldiers to handle many postconflict security assistance and civil-military cooperation requirements. Language and culture will be a significant piece of the training. In adapting to better meet the security force assistance missions, the Army and DOD should consider exploring synergies and collaboration across the Services, intelligence agencies, and State Department.

One possibility might involve a review of the training mission at the U.S. Naval Postgraduate School's (NPS) Center for Civil-Military Relations. The center's core competencies do not include a language component, yet DLIFLC is located a few blocks away. Collaboration between the Army and Navy for language training at NPS is nominal if it exists at all. Furthermore, it seems that mutual interest—and a partnering opportunity—exist between the Military Advisor Training Academy and the training on civil-military relations at NPS. Some consideration toward consolidating and centralizing existing efforts of the Army and Navy, and an exploration of collaboration opportunities, is unreasonable. The entities could be carved out and/

or combined together and with DLIFLC to serve as the initial foundation of the SFAC. There ought to be a more focused unity of effort.

Third, consideration of a DLIFLC transformation is appropriate. For far too long, many have viewed DLIFLC as not being equivalent in stature to other Title 10 schools, a remarkable oversight given the rather clear direction noted by the former President and others. Part of the lack of focus on DLIFLC's critical contributions in foreign language and culture training has to do with the "junior college" stigma that exists. The fact that, by and large, the student body comprises mainly enlisted Servicemembers as compared to the graduate-level officer training at other DOD schools seems, to some, to be relevant measure of the complexity of training (or lack thereof). It needs to change.

Language requirements should not be trusted primarily to contractors. DLIFLC is perfectly situated to assume a more direct role in providing responsive language training at levels appropriate to meet the needs of the Intelligence Community as well as at other levels and at standards that are responsive to broader mission needs. Critical to any DLIFLC transformation would be to ensure that research and development funds to advance cutting-edge translation programs and improve devices for language interpretation are delivered at point of need.

Finally, legal authority exists right now to assist DOD in expanding and transforming language, culture, and civil-military relations training. The *David L. Boren National Security Education Act* provides enormous opportunities for DOD to expand, grow, and reassess how to best meet the security force assistance challenges identified by the Army Chief of Staff. The statute authorizes the award of scholarships and grants to DLIFLC students and permits attendance by civilian students at DLIFLC. Opportunities also exist for DLIFLC to assume a more expansive and active role in the National Flagship Language Initiative.<sup>18</sup> The statute could serve as an initial starting point for a reassessment of how DOD will best

meet security force assistance challenges going forward.

It is abundantly clear that the definition of success in fighting and winning the Nation's wars will almost certainly include a security force assistance component. Communication and collaboration skills will be of paramount importance. As such, DOD needs a front-burner strategy regarding the security force assistance requirements of the future, consistent with General Milley's vision for the Army. It is time to work toward resourcing and staffing a new unified joint Security Force Assistance Command. JFQ

## Notes

<sup>1</sup> "The future national security and economic well-being of the United States will depend substantially on the ability of its citizens to communicate and compete by knowing the languages and cultures of other countries." See *U.S. Code*, Title 50, Chapter 37, § 1901, (b) (4).

<sup>2</sup> "Obama's Address to Veterans," *New York Times*, August 17, 2009, available at <[www.nytimes.com/2009/08/18/us/politics/18obama.text.html](http://www.nytimes.com/2009/08/18/us/politics/18obama.text.html)>.

<sup>3</sup> "CIA Values Language Capabilities Among Employees," *CIA.gov*, March 18, 2010, available at <[www.cia.gov/news-information/featured-story-archive/2010-featured-story-archive/cia-values-language-capabilities.html](http://www.cia.gov/news-information/featured-story-archive/2010-featured-story-archive/cia-values-language-capabilities.html)>.

<sup>4</sup> John J. Kruzel, "Mullen: U.S. Military Benefits from Language Training," *DOD News*, August 11, 2009, available at <<http://archive.defense.gov/news/newsarticle.aspx?nid=55448>>.

<sup>5</sup> Joseph Morgan, "DLIFLC's Afghan Language Portal Opens," *Army.mil*, February 25, 2010, available at <[www.army.mil/article/35000/dliflc\\_afghan\\_languages\\_portal\\_opens](http://www.army.mil/article/35000/dliflc_afghan_languages_portal_opens)>.

<sup>6</sup> *Language and Culture Training: Opportunities Exist to Improve Visibility and Sustainability of Knowledge and Skills in Army and Marine Corps General Purpose Forces*, GAO-12-50 (Washington, DC: Government Accountability Office [GAO], October 2011), available at <[www.gao.gov/assets/590/585990.pdf](http://www.gao.gov/assets/590/585990.pdf)>; *Defense Contracting: Actions Needed to Explore Additional Opportunities to Gain Efficiencies in Acquiring Foreign Language Support*, GAO-13-251R (Washington, DC: GAO, February 25, 2013), available at <[www.gao.gov/assets/660/652298.pdf](http://www.gao.gov/assets/660/652298.pdf)>.

<sup>7</sup> Defense Language Institute Foreign Language Center (DLIFLC), "Welcome," available

at <[www.dliflc.edu/home/about/](http://www.dliflc.edu/home/about/)>.

<sup>8</sup> DLIFLC, "DLPT Guides and Information," available at <[www.dliflc.edu/resources/dlpt-guides/](http://www.dliflc.edu/resources/dlpt-guides/)>.

<sup>9</sup> DLIFLC Resource Management Office Web site, available at <[www.monterey.army.mil/RMO/resource\\_mgmt.html](http://www.monterey.army.mil/RMO/resource_mgmt.html)>.

<sup>10</sup> *Defense Contracting*, 3.

<sup>11</sup> Ibid., 4.

<sup>12</sup> Ibid.

<sup>13</sup> "Contracts," Release No. CR-041-17, *Defense.gov*, March 3, 2017, available at <[www.defense.gov/News/Contracts/Contract-View/Article/1102176/](http://www.defense.gov/News/Contracts/Contract-View/Article/1102176/)>.

<sup>14</sup> Jocelyn M. Broussard, "INSCOM Recognizes 39 Employees for Supporting \$9.86 Billion DLITE II Contract," *Army.mil*, April 27, 2017, available at <[www.army.mil/article/186803/inscom\\_recognizes\\_39\\_employees\\_for\\_supporting\\_986\\_billion\\_dlite\\_ii\\_contract](http://www.army.mil/article/186803/inscom_recognizes_39_employees_for_supporting_986_billion_dlite_ii_contract)>.

<sup>15</sup> Ibid.

<sup>16</sup> *Department of State: Foreign Language Proficiency Has Improved, but Efforts to Reduce Gaps Need Evaluation*, GAO-17-318 (Washington, DC: GAO, March 2017), available at <[www.gao.gov/assets/690/683533.pdf](http://www.gao.gov/assets/690/683533.pdf)>; *Department of State: Staffing and Foreign Language Shortfalls Persist Despite Initiatives to Address Gaps*, GAO-06-894 (Washington, DC: GAO, August 2006), available at <[www.gao.gov/new.items/d06894.pdf](http://www.gao.gov/new.items/d06894.pdf)>.

<sup>17</sup> Meghann Myers, "Army Chief Dispels Rumors, Misconceptions about SFAB Berets, Tabs," *ArmyTimes.com*, October 30, 2017, available at <[www.armytimes.com/news/your-army/2017/10/30/army-chief-dispels-rumors-misconceptions-about-sfab-berets-tabs/](http://www.armytimes.com/news/your-army/2017/10/30/army-chief-dispels-rumors-misconceptions-about-sfab-berets-tabs/)>.

<sup>18</sup> See *U.S. Code*, Title 50, Chapter 37, § 1902, (j).

Army Explosive Ordnance Disposal Technicians look on as Icelandic coastguard helicopter takes off from field in Iceland during exercise Northern Challenge 2017 (NATO/Laurence Cameron)



# A Holistic Approach to Problem-Solving

By Stephen F. Nowak

**D**espite George Santayana's warning—"Those who do not remember the past are condemned to repeat it"—we continue to forget what we have learned and fall into bad habits. Although we have already determined better ways to make decisions and solve problems, we tend to forget them.

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The concept is simple: decisions should be made by those with the best knowledge at the lowest level possible. In the field, this is understood—it is not the wing commander or fighter pilot who decides if a plane is airworthy; that decision is made by an enlisted aircraft mechanic. Unfortunately, Servicemembers in staff positions and U.S. Government civilians find that even minor decisions are pushed up the chain of command. Imagine history if Alvin York or Doris Miller had requested permission and waited for approval before acting.

Our adversaries are agile, innovative, and adaptive. They decide and act quickly. Since they do not adhere to laws of war or norms of civilized society, they have almost unlimited options.

This article draws from lessons learned in the past in order to propose a process for better decisionmaking and problem-solving today. Its basic premise is that most problems could and should be resolved at the lowest level possible, should involve those who best understand the problem, and include the people who have the most to gain (or lose) by resolution.

The following is a circular letter from Admiral Ernest J. King, Chief of Naval Operations, during World War II. Notice the date is over 10 months *before* the attack on Pearl Harbor. The letter reads:

*From: ADM Ernest J. King  
Subject: Exercise of Command Excess of Detail in Orders and Instructions  
21 January 1941*

*1. I have been concerned for many years over the increasing tendency—now grown almost to “standard practice”—of flag officers and other group commanders to issue orders or instructions in which their subordinates are told “how” as well as “what” to do to such an extent and in such detail that the “Custom of the service” has virtually become the antithesis of the essential element of command—“initiative of the subordinate.”*

*2. We are preparing for—and are now close to—those active operations (commonly called war) which require the exercise and the utilization of the full powers and capabilities of every officer in command status. There will be neither time nor opportunity to do more than prescribe the several tasks of the several subordinates (to say “what” perhaps “when” and “where” and usually, for their intelligent cooperation, “why”); leaving to them expecting and requiring them—the capacity to perform the assigned tasks (to do the “how”).*

*3. If subordinates are deprived—as they are now—of that training and experience which will enable them to act “on their own”—if they do not know, by constant practice, how to exercise “initiative of the subordinates,” if they are reluctant (afraid) to act because they are accustomed to detailed orders and instructions—if they are not habituated to think, to judge, to decide, and to act for themselves in their several echelons of command we shall be in sorry case when the time of “active operations” arrives.<sup>1</sup>*

War plans had always included the Pacific Fleet as a—or, perhaps, the—major player, but a significant portion of the fleet—especially the battleships—had been sunk or severely damaged during the Japanese surprise attack on December

7, 1941. The United States was now forced to fight the Imperial Japanese Navy with what ships it had, while simultaneously developing the tactics with which to do so.

Admiral King was confident that his commanders would define tactics that were appropriate for their capabilities and the situations they were facing. This would take experimentation—always costly in wartime. As tactics were tried, the commanders pooled their information (lessons learned) with one another throughout the fleet. By mid-1942, roughly 6 months after Pearl Harbor, the U.S. Navy became a force that presented not only a challenge but also a threat to the Japanese fleet, with the Battle of Midway (June 4–7, 1942) seen as the turning point of the war in the Pacific.

Admiral King’s confidence in his commanders did not alter his strategic and holistic view. He realized that commanders had access to significant data—so much data that it was difficult to separate the significant from distractions. Admiral King ordered all ships to establish a Combat Information Center (CIC) to allow “full utilization of all available sources of combat information.” While he described what a CIC would do, he did not dictate how it should be done.

Again, different approaches were tried throughout the fleet. On one ship, the executive officer stood at the edge of the radar room, watching the displays. When he developed an understanding of the overall situation, he would then relay that information to the commanding officer and weapons officer. It was not elegant, but it worked and became the model for the CICs throughout the fleet.

## Components for Decisions

Solving problems is based on making a correct, or at least reasonable, decision and then acting on it. There are two main components necessary for a person to make a decision and implement it: knowledge and authority.

**Knowledge.** Information is data that have been organized so that they can be understood and which have been communicated to the appropriate decisionmakers. *Knowledge* is defined as the

fact or condition of knowing something with familiarity gained through experience or association. Knowledge is powerful because it combines information with experience. However, partial information may lead to an incorrect conclusion.

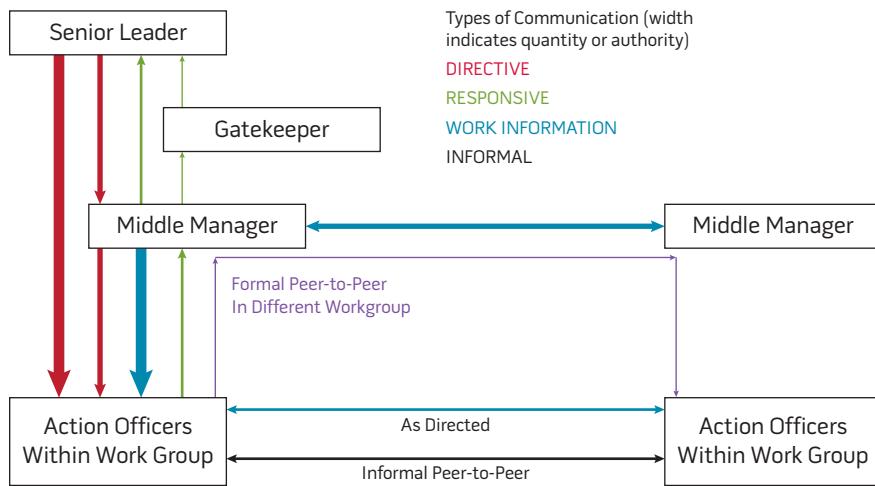
**Authority.** Like beauty, everyone knows what authority is when they see it. The *Department of Defense (DOD) Dictionary* includes 132 entries for various types of authority. The regular dictionary is equally unhelpful. For our purposes, I propose we define *authority* as the ability to act on a decision. In large organizations, by default, an individual lacks authority until it is specifically granted by billet, assignment, or other administrative action.

### Combining Knowledge and Authority

Ideally, the person with the most knowledge and experience regarding a particular situation would be the one to make a decision and have the ability to implement it. However, the larger the organization, the less likely this is to happen. Often, the person with the most knowledge of a particular problem will be an action or desk officer—a worker bee, if you will. On the other hand, the person with the authority to act will be at a higher rank; while he or she may have some degree of familiarity with the problem, he or she may lack the depth of knowledge and experience of those at a lower organizational level. Indeed, individuals with authority can delegate appropriate authority to subordinates to allow them to make an intelligent decision and implement it. However, in practice, it is likely that instead of delegating authority to the person with knowledge, there will be the expectation that knowledge can and will be transferred to the person with authority.

The most important decisions are those that solve a problem. In an increasingly complex world, making and executing decisions require two individuals, each with half of the required ingredients and who may not work together on a routine basis. In many cases, it is difficult to even define the problem. Frequently, the problem is not viewed objectively, but is defined in terms of the decisionmaker’s preferred solution. This

**Figure. Communication Flow in a Bureaucracy**



problem is frequently a result of, or exacerbated by, the organizational structure in which the problem occurs.

### DOD Organizational Structure

DOD has 3.2 million employees, making it the largest single employer in the world. The organizational structure to successfully manage an entity that large and complex is almost always a bureaucracy, which is neither inherently good nor bad; it is merely one of many organizational types.

In the DOD bureaucracy, both uniformed military and civilian employees are assigned a grade (rank), with an equivalency between civilian and uniformed grades. There is a clearly defined (and enforced) chain of command, which encourages a culture focused on rules, standards, and rigid processes. A bureaucracy provides stability, but it is not an effective platform for quickly making and acting on decisions. As a result, the “weaknesses of bureaucratic structures are slower decisionmaking, high levels of supervisor and managerial overheads, lack of employee freedom, and lower employee morale.”<sup>22</sup>

**Communication.** In large, established organizations, communication is influenced by both rules and culture. Effectiveness of communication is strongly affected by its direction. Downward communication from senior leaders is generally directive in nature.

Communication from mid-level managers to senior leaders is primarily responsive and generally formatted according to a prescribed structure. Communication to a senior leader often passes through a secretary, aide, executive assistant, or other gatekeeper who decides which communications the senior leader receives.

Upward communication from non-managers to any leader other than their own is generally discouraged if not prohibited, even though there is organizational benefit to such communication (see figure). When such communication is approved, it is normally sent via several intermediate levels before reaching the intended recipient. Horizontal communication within a single group tends to work reasonably well, as does communication between groups at the management level. The protocol for formal communications may require the message to be passed up one chain of command, transferred to another, and then passed down the second chain to the intended recipient. Communication by non-managers across groups is more difficult, except on an informal basis, which may depend more on relationships and personal networks than organizational processes.

Communication may be dictated by organizational structure, but in turn it dictates the effectiveness of a particular structure. Communication in a complex, multilayered organization tends to be complicated and less effective than in a

flat one, which tends to increase the time to respond to a requirement. By comparison, small organizations with informal communication enjoy a high degree of integration, and individuals feel free to communicate directly with almost anyone else in the organization. The result is that flat organizations enjoy a faster response, greater agility, and adaptability.

Peter Drucker, one of the most influential forces in modern management, wrote that span of control has been replaced by span of communication: “The number of people reporting to one boss is limited only by the *subordinates’ willingness to take responsibility for their own communications and relationships*, upward, sideways and downward. ‘Control,’ it turns out, is the ability to obtain information.”<sup>23</sup> Of course, by extension, withholding information is also control, which may contribute to the existence of stovepipes or rice bowls. However, even though such practices may benefit the individual, they do not benefit the organization as a whole. Anything that does not encourage a holistic view tends to be a liability because intense focus on one area tends to create blind spots in other areas.

**Speed vs. Perfection.** Generally, we benefit from the ability to quickly define a problem, identify a solution, and implement it. Anything that needlessly slows the decisionmaking process tends to be a liability. Similarly, anything that reduces our ability to be agile or innovative is also a liability. General John Hyten, USAF, commander of U.S. Strategic Command, put it quite plainly: “Right now, we are being outpaced by our adversaries. We’ve lost the ability to go fast and fail. Watch what our adversaries are doing. Look at Kim Jong-un. What he’s doing is testing, failing, testing, failing, testing, failing, testing and succeeding. . . . If you want to go fast, you have to empower people with the authority and responsibility to execute.”<sup>24</sup>

Taking it a step further, the Chairman of the Joint Chiefs of Staff (CJCS), speaking at a graduation ceremony at the National Defense University, advised, “As leaders, create an environment within which innovation, the questioning of conventional wisdom and creativity are not only allowed, but actually encouraged

... and assume you don't have all the answers."<sup>25</sup> Our senior leaders can clearly see these needs and have communicated the issues quite clearly. However, we have yet to translate such ideas into action, and we may not have the luxury of time for a gradual change.

In light of General Dunford's and General Hyten's advice, we need a way forward that empowers people who have knowledge and experience with both the authority and responsibility to make and execute decisions. We must encourage creativity and innovation. A different process could be tried as an experiment. If it succeeds, it could then provide a framework for solving future issues and problems. Fortunately, there is a nearly perfect environment in which to conduct such an experiment.

**A Computerized Conundrum.** There are two deputy directorates—the Future Joint Force Development (FJFD) Deputy Directorate and Joint Training Deputy Directorate—located at the Joint Staff facility in Suffolk, Virginia. The missions of the deputy directorates are complementary and share many similarities. The FJFD Deputy Directorate includes the Joint Lessons Learned Division (JLLD), which collects information on observations, best practices, and lessons from throughout the joint force. Some of this information is collected by teams of analysts that, at the request of a combatant command, joint task force, Service, or Joint Staff, travel to the location in which a particular issue is occurring. The team then collects data by conducting interviews and recording observations. The data are analyzed in order to identify the most significant issues (called findings), which normally lead to recommendations for improvement.

Another JLLD component reviews and analyzes data that have been input into the Joint Lessons Learned Information System (JLLIS) by members of the Armed Forces or interagency partners. JLLIS data are analyzed for trends, anomalies, and significant issues. JLLIS data flow in both directions and are accessible by commands to prepare plans for various operations or assignments. For example, if a command were deploying to a



Munitions Systems Technician assigned to 455<sup>th</sup> Expeditionary Maintenance Squadron reviews technical order data before building GBU-38 bomb, part of weapon system used on F-16C Fighting Falcons, August 14, 2014 (U.S. Air Force/Cohen A. Young)

failed or failing state, information available in JLLIS concerning corruption would be useful. When the Zika virus appeared in 2016, a number of JLLIS users accessed the lessons from the U.S. Ebola effort.

The Joint Training Deputy Directorate provides a wide range of training support to the combatant commands, with exercises being one of the most important since they emulate actual combat operations to test a command's capabilities, determine its readiness, and identify future training opportunities. Training maintains its data on the Joint Training Information Management System (JTMS).

**Separate Computer Systems.** The two computer systems contain similar, and at times identical, data. Data useful to one group may reside on the other's computer system. There are two systems because of procedural requirements that support the legally mandated duties of the CJCS. Federal law assigns these responsibilities in *U.S. Code*, Title 10, Section 153. These responsibilities

include doctrine, training, education, planning, advising, and assessing readiness. The Chairman has developed and promulgated instructions as to how each of these responsibilities will be met.

CJCS Instruction (CJCSI) 3150.25F, *Joint Lessons Learned Program*, states that "JLLP knowledge management is enabled by *JLLIS, the DOD system of record for lessons learned*. JLLIS facilitates the collection, tracking, management, sharing, collaborative resolution, and dissemination of lessons learned to improve the development and readiness of the joint force."<sup>26</sup> Title 10 also directs the CJCS to formulate policies for the joint training of the Armed Forces and coordinating military education and training.

CJCSI 3500.01H, *Joint Training Policy for the Armed Forces of the United States*, identifies "JTMS [as] the enterprise solution available for use by all DOD Components."<sup>27</sup> JTMS interfaces with several other systems to "input to readiness reporting in the Defense Readiness

Reporting System” and transfer training and readiness data into the Joint Exercise Program.<sup>8</sup> The relationship between JTMS and JLLIS is described in detail in the Chairman’s Training Instruction. Enclosure D of the instruction instructs combatant commands to “establish and conduct a deliberate observation validation process to capture key overarching and cross-cutting observations and lessons no later than event ENDEX [exercise termination] plus 45 days; export validated TPOs [task performance observations] and TPEs [task performance evaluations] in JTMS into JLLIS.”<sup>9</sup>

**Defining the Problem.** While the instructions seem to indicate a well-structured system, when I tried to determine how the two computer systems interacted, the answers included:

- JTMS and JLLIS currently can and do communicate.
- The two systems cannot communicate, but the next JLLIS software release, scheduled for December 2017, will enable this capability.
- Combatant commands routinely record observations, which are entered into JTMS.
- Appropriate issues are transferred from JTMS to JLLIS.
- Data are not actually transferred from JTMS to JLLIS; data must be exported from JTMS and then manually entered into JLLIS.
- If a command (for example, a ship at sea) cannot directly access JTMS or JLLIS, it records observations using a spreadsheet and then uploads it when feasible.
- Those designing the exercises cannot access the data in JLLIS, which would provide them with more current data to include in the exercises.
- Since anyone with a Common Access Card or Personal Identity Verification card can get a JLLIS account, there is no reason that joint training personnel cannot access JLLIS.

To quote the old movie, “What we’ve got here is failure to communicate.”<sup>10</sup> Is this a computer

communication problem, a people communication problem, or both? In any case, it will take more effective communications among people to resolve this issue. Artificial intelligence is advancing, but so far computers are not able to autonomously resolve such issues and must still depend upon human intervention.

### A Holistic Approach

Based on the advice from the Chairman, General Hyten, and Admiral King, I propose the following approach, which, if successful, could provide a framework for resolving future issues.

First, it is logical to assume that the people who use JLLIS and JTMS on a regular basis know more about these systems than anyone else. By user, I am referring to those who input, manage, or analyze the data in either system. There are experts, like computer or software engineers, who may know how the binary data are processed, but we need people who use the system as a tool to support the warfighter. The functional expertise resides with the people who input data, search for data, and most importantly, know what stakeholders need the system to do.

Second, from among those users, choose two JLLIS users and two JTMS users to work as a team to resolve this problem in conjunction with the JLLIS and JTMS technical advisors as subject matter experts. The team would be required to clearly define the problem, and, based on that definition, they would determine the endstate that would indicate that they had succeeded in solving the problem.

Third, the team would prepare a plan detailing how to move from the current situation to its desired endstate. The plan would indicate how much time would be required to resolve the issue and identify what other resources would be requested to be successful.

Fourth, using a facilitator, bring the team and its supervisors together to discuss the project to ensure everyone has a common understanding. Remind the supervisors that this is the action officers’ project and a test of this approach to problem-solving.

Fifth, since this is an experiment, the team and the facilitator need to document what they do, what the results are, and any other observations that might prove relevant.

Sixth, the facilitator would observe the process and provide periodic guidance without micromanaging. It is important for the facilitator to allow the team to develop and go through the expected four stages—often called storming, norming, forming, and performing. The facilitator will record observations related to both the project and the group dynamics.

The team will examine the issues related to the two deputy directorates and their computer systems, clearly define the problem, and determine what desired endstate a solution should achieve. The team would determine how to arrive there.

Why use such a technique? Reiterating what General Dunford stated, “As leaders, create an environment within which innovation, the questioning of conventional wisdom and creativity are not only allowed, but actually encouraged . . . and assume you don’t have all the answers.” Given the culture of DOD, one of the challenges will be that supervisors will want to help and get involved. The supervisors are committed to success and may not be comfortable standing by while someone else handles a decision. It is hard to let go and let a junior employee take on a high-visibility challenge without a supervisor.

In *It Worked for Me*, in the appropriately titled chapter “Trust Your People,” Colin Powell tells how he prepared President George W. Bush for his first international trip to meet with Mexican President Vicente Fox. He assigned two junior Mexico desk officers to brief the President. He did not know them—he didn’t even know their names—but he knew that they would knock themselves out to do a good job. Secretary Powell explained that there would be no PowerPoint presentation and there would be no rehearsals. No one would speak except those two junior desk officers:

*The day came; the President and his party entered the conference room and took their places on one side of my large conference table. . . .*

*I welcomed the President, introduced my key leaders, and then introduced the two action officers and turned them loose. . . . The two officers took off, and their performance totally met my expectations. They provided the President with everything he needed to know before he flew down to Mexico. The President asked penetrating questions and got solid answers. When it was over, he expressed his satisfaction, thanked everyone with a handshake and a smile, and swept out, assistants in his wake.<sup>11</sup>*

## Conclusion

This experiment is about developing a problem-solving process by using teams from different groups to resolve a computer issue to prove or disprove the capability of the process. A successful process would provide a framework for resolving future problems with a holistic view and based on communications among groups. The importance of improving communication cannot be overemphasized. It starts with the affected divisions during the experiment, but managed appropriately, it could provide a tipping point—an event not so significant on its own, but one that provides the small measure that causes the scales to shift. Think of the first person to walk across the gym floor at the eighth-grade dance, after which the boys and girls mixed and danced. That one person was the tipping point.

If two or three groups communicate better, it is possible for that to become the norm rather than an anomaly. Both communication and the encouragement of leadership to communicate reinforce the concept that all the parts of the directorate are part of the same effort. Improving—or, better yet, encouraging—better communication is critical. When people were asked what the JLLIS/JTMS problem was, there were eight different answers. It is unlikely that there are eight discrete problems; it is more likely that there are eight different perceptions of a single problem—a classic communication issue, which bears an eerie resemblance to the story of the blind men trying to describe an elephant.

The importance of resolving problems without involving management in every one of them may not be obvious, but it is critical. The future—and the near future at that—is dependent on our junior civilian employees. As those in uniform rotate through staff positions, it is the civilian employees who provide continuity. Today, well over half of civilian government employees are eligible to retire. How long should we wait before we begin to allow junior people to experience challenges? Military officers begin to take on responsibility, authority, and gain experience by their fifth year or promotion to O3. Thus, we need to begin to transfer authority and responsibility to the more junior employees at a similar level. Today, we refer things to supervisors that a civilian GS-12 could fix (incidentally, a GS-12 is comparable to a uniformed O3). In the next few years, as many civilian government employees retire, their replacements will begin at a lower paygrade; the GS-12 we hesitate to trust today may, tomorrow, be the most senior civilian in the work group.

Vice Admiral Kevin Scott, director of Joint Force Development, sent a note out last year titled “DJ7 Message to All Hands.” The emphasis and formatting are VADM Scott’s:

*We are a multi-disciplinary group of professionals with a broad spectrum of skill sets necessary and valuable in their own right; however, we better achieve our objectives by coming together as a J7 team. . . .*

### *Our Cultural Tenets: How We Must Operate*

- *Build positive relationships*
- *Foster teamwork*
- *Fluid communications*
- *Excellence in all we do*
- *Develop talent around you*
- *Be value added in what and everything you do*

### *Trust and a Shared Environment—Integrated Effort.*

I find it significant that every one of his tenets is an interactive trait, not

a technical skill. They describe how we should interact, not what tasks we should do. JFQ

## Notes

<sup>1</sup> Julius Augustus Furer, *Administration of the Navy Department in World War II* (Washington, DC: Government Printing Office, 1959), appendix 1, “Admiral E.J. King’s Philosophy of Command,” available at <[www.ibiblio.org/hyperwar/USN/Admin-Hist/USN-Admin/USN-Admin-A1.html](http://www.ibiblio.org/hyperwar/USN/Admin-Hist/USN-Admin/USN-Admin-A1.html)>.

<sup>2</sup> Natasha Gilani, “Bureaucratic vs. Flat Organizational Structure,” *Smallbusiness.Chron.com*, available at <<http://smallbusiness.chron.com/bureaucratic-vs-flat-organizational-structure-24771.html>>.

<sup>3</sup> Peter Drucker, *The Frontiers of Management: Where Tomorrow’s Decisions Are Being Shaped Today* (New York: Truman Talley Books, 1986), 204.

<sup>4</sup> Sydney J. Freedberg, Jr., “Kim Jong-un Has Much to Teach Pentagon about Speed: Gen. Hyten,” *BreakingDefense.com*, August 8, 2017, available at <<https://breakingdefense.com/2017/08/kim-jong-un-has-a-lot-to-teach-pentagon-about-speed-gen-hyten/>>.

<sup>5</sup> Joseph F. Dunford, Jr., speech delivered at the graduation exercises of the National Defense University, Washington, DC, June 9, 2016; video available at <[http://original.livestream.com/ndustreampremium/video?clipId=pla\\_e501087a-a2fc-4ec1-9c6a-1dd18f43dc97&rkt=3&ra=483661](http://original.livestream.com/ndustreampremium/video?clipId=pla_e501087a-a2fc-4ec1-9c6a-1dd18f43dc97&rkt=3&ra=483661)>.

<sup>6</sup> Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3150.25F, *Joint Lessons Learned Program* (Washington, DC: The Joint Staff, June 26, 2015), available at <[www.jcs.mil/Portals/36/Documents/Doctrine/jlld/cjcsi3150\\_25.pdf](http://www.jcs.mil/Portals/36/Documents/Doctrine/jlld/cjcsi3150_25.pdf)>. Emphasis added.

<sup>7</sup> CJCSI 3500.01H, *Joint Training Policy for the Armed Forces of the United States* (Washington, DC: The Joint Staff, April 25, 2014), A-8, available at <[www.jcs.mil/Portals/36/Documents/Library/Instructions/3500\\_01.pdf?ver=2016-02-05-175034-967](http://www.jcs.mil/Portals/36/Documents/Library/Instructions/3500_01.pdf?ver=2016-02-05-175034-967)>. Emphasis added.

<sup>8</sup> Ibid., B-1.

<sup>9</sup> Ibid., D-8.

<sup>10</sup> *Cool Hand Luke*, Stuart Rosenberg, dir., Warner Bros.-Seven Arts, November 1, 1967.

<sup>11</sup> Colin Powell with Tony Koltz, *It Worked for Me: In Life and Leadership* (New York: Harper, 2012), 74.



Special Forces fast-rope through center opening of helicopter at Hurlburt Field, Florida, April 23, 2013, during annual 2-week joint/combined tactical exercise Emerald Warrior 2013, designed to leverage lessons learned from Operations *Iraqi Freedom* and *Enduring Freedom* (U.S. Air Force/Colville McFee)

# The Importance of Lessons Learned in Joint Force Development

By Gwendolyn R. DeFilippi, Stephen Francis Nowak, and Bradford Harlow Baylor

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The Chairman of the Joint Chiefs of Staff (CJCS) actively promotes the importance of innovation, experimentation, and learning. He made this explicitly clear in his address to the 2016 graduating class of the National Defense University:

*Those of you graduating today have to lead that change or we're going to find*

*ourselves—and I don't mean in the distant future, I mean the not-too-distant future—we're going to find ourselves at a competitive disadvantage. That will be the cost of not recognizing what needs to change, and not affecting change in your organizations.<sup>1</sup>*

Former CJCS General Martin E. Dempsey also addressed the need for learning:

*Our profession is a calling requiring unique expertise to fulfill our collective responsibility to the American people, “provide for the common defense and secure the blessings of liberty.”*

*As professionals, we are defined by our strength of character, life-long commitment to core values, and maintaining our professional abilities through continuous improvement, individually and institutionally.*

*This endeavor [advancing the profession of arms] requires all Joint Warfighters to engage in a serious dialogue to chart the way ahead to strengthen our profession as we develop Joint Force 2020. We must ensure we remain responsive and resilient; the American people deserve nothing less.<sup>2</sup>*

Both generals actively promote the need for a profession of arms to maintain and expand its unique body of knowledge and expertise. The military invests significant resources to achieve this aspect of being a profession, including establishing a directorate within the office of the Chairman devoted to Joint Force Development (DJ7). This article delves into the benefits of joint lessons learned and how they enable and enhance our profession to maintain and expand our unique body of knowledge and expertise.

*U.S. Code, Title 10, Section 53,* defines the responsibilities of the CJCS. These include developing doctrine; formulating policies for joint training, military education, concept development and experimentation; advising the Secretary of Defense on development of joint command, control, communications, and cyber capability; and formulating policies for gathering, developing, and disseminating joint lessons learned.

The importance of gathering, developing, and disseminating joint lessons learned cannot be overemphasized. Today, we need real-world lessons learned by the deployed young officer who is experiencing what works, what does not, and what could—if certain changes were made. This is mission of the Joint Staff Joint Force Development Directorate's Joint Lessons Learned Division (JLLD).

The JLLD executes the Chairman's Joint Lessons Learned Program by

collecting, aggregating, analyzing, and integrating lessons and best practices from joint, interagency, and coalition operations in order to shape and advance joint force development. The division's desired endstate is that lessons are effectively applied through force development functions, promoting learning across the joint force to improve readiness, operational effectiveness, and leader development.

The division actively collects Department of Defense (DOD)-wide lessons learned through the employment of composite study teams and passively through analysis of field observations and reports entered into the Joint Lessons Learned Information System (JLLIS). JLLIS is the DOD system of record and enterprise solution supporting the Chairman's Joint Lessons Learned Program. A complement to the overall JLLD mission, it facilitates the collection, tracking, management, sharing, collaborative resolution, and dissemination of lessons, which enable the five phases of the Joint Lesson Learned Program: discovery, validation, resolution, evaluation, and dissemination. It also provides automated workflow processes to elevate observations from operations, exercises, training, experiments, and real-world events and facilitates the discovery, validation, issue resolution, evaluation, and dissemination of critical lessons.

The JLLIS construct allows approved users across the Services, combatant commands, Joint Staff, and interagency community both to input information (for example, observations, best practices, after action reports, internal staff assessments) and to provide an important reference for the planning process. Key users and stakeholders include the Office of the Secretary of Defense (OSD), Joint Staff, combatant commands, Services, National Guard Bureau, combat support agencies, as well as other joint, U.S. Government, and coalition partners. The JLLD additionally identifies and aggregates key findings and themes within a Joint Capability Area framework on a quarterly and rolling fourth quarter basis. The resulting observation report informs the internal active study process and provides an important reference point for

focused research to the lessons learned community at large.

As mentioned, JLLD actively collects lessons through experienced study teams that deploy to theater, collect data through interviews and observations, and conduct timely analysis of operational issues. This provides immediate feedback to the joint warfighter and input for transformational change to joint doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P). JLLD studies are normally conducted at the request of combatant commands, joint task forces, or other military organizations conducting real-world operations. They are focused on identifying unique challenges and the DOD response. Study products are typically vetted with the requesting organization, which is free to use the study as an internal product for improvement or to approve it for release. In many cases, it is difficult to measure the impact of specific study efforts because the learning benefits accrue over time. Whenever possible, JLLD studies are posted to one or more appropriate networks, including unclassified or classified Intel Share, JLLIS, and the North Atlantic Treaty Organization (NATO) Battlefield Information Combat Exploitation System. This process enhances the visibility and sharing of lessons and best practices across the force, including interagency and coalition partners.

JLLD studies continue to cover a wide spectrum of joint, interagency, and coalition operations. Below are summaries from several recent JLLD study efforts that exemplify the range of these operations and the organizations conducting these operations.

## Decade of War Study

This study was the JLLD response to the 2011 CJCS call for learning the lessons of the past decade's U.S. military operations.<sup>3</sup> In the decade following 9/11, the United States employed its military in a wide range of operations to address real and perceived threats from both nation-states and terrorist groups, strengthen partner-nations' militaries, conduct

humanitarian assistance operations, and provide defense support of civil authorities in catastrophic incidents such as Hurricane Katrina. This wide range of operations aimed to promote and protect national interests in the changing global environment.

In general, operations during the first half of the decade were often marked by numerous missteps and challenges as the U.S. Government and military applied a strategy and force designed for a different threat and environment. In the second half of the decade, the joint force adapted to the operational environment and became more effective. From its study of these operations, JLLD identified overarching and enduring lessons that presented opportunities to learn and improve—best practices that the United States can sustain and emerging risk factors that it should address. These lessons were derived from 46 studies consolidated into the report.<sup>4</sup>

The *Decade of War* study discusses the 11 strategic themes that arose from the study of the enduring lessons and challenges of the last decade:

- Understand the environment: A failure to recognize, acknowledge, and accurately define the operational environment led to a mismatch among forces, capabilities, missions, and goals.
- Conventional warfare paradigm: Conventional approaches often were ineffective when applied to operations other than major combat, forcing leaders to realign the ways and means of achieving effects.
- Battle for the narrative: The United States was slow to recognize the importance of information and the battle for the narrative in achieving objectives at all levels; it was often ineffective in applying and aligning the narrative to goals and desired endstates.
- Transitions: Failure to adequately plan and resource strategic and operational transitions endangered the overall mission.
- Adaptation: DOD policies, doctrine, training, and equipment were often

poorly suited to operations other than major combat, forcing widespread and costly adaptation.

- Special operations forces (SOF)—general purpose forces (GPF) integration: Multiple, simultaneous, large-scale operations executed in dynamic environments required the integration of SOF and GPF, creating a force-multiplying effect for both.
- Interagency coordination: Synchronization was uneven due to inconsistent participation in planning, training, and operations; policy gaps; resources; and differences in organizational cultures.
- Coalition operations: Establishing and sustaining coalition unity of effort was a challenge due to competing national interests, cultures, resources, and policies.
- Host-nation partnering: Partnering was a key enabler and force multiplier and aided in host-nation capacity-building. However, it was not always approached effectively or adequately prioritized and resourced.
- State use of surrogates and proxies: States sponsored and exploited surrogates and proxies to generate asymmetric challenges.
- Super-empowered threats: Individuals and small groups exploited technology and information to expand influence and approach state-like disruptive capacity.

The *Decade of War* study briefly summarized each of these strategic themes and provided recommendations to the joint force. The Army used this study as the framework for a complete strategic-to-tactical crosswalk of its organization, training, and equipping. The study also became part of the professional military education (PME) curriculum. This study led U.S. Southern Command to request support in understanding the protection of civilians in its area of responsibility. Lessons from this study influenced how the United Nations (UN) approaches the protection of civilians in UN peacekeeping operations. Additionally, JLLD

integrated the lessons from this study, in conjunction with the Continuum of eLearning, and produced a series of short videos, one for each of the strategic themes. These videos can provide a basic overview or help a senior officer determine if the entire report should be accessed.

## **European Perspectives Project: Security in the Baltic Region**

The European Perspectives Project (EPP) is a series of studies conducted with partner nations. The combined perspectives provide a strategic view about Russia's behavior. The purpose of the series is to gain a common understanding and inform U.S., allied, and partner leaders about perceived challenges and potential solutions. *Security in the Baltic Region* is the first study in the series to be published.<sup>5</sup>

The Baltic Sea Region (BSR) includes Estonia, Latvia, and Lithuania (three former Soviet states) as well as Denmark, Finland, Germany, Iceland, Norway, Poland, and Sweden. The United States and Great Britain are critical external BSR actors. The BSR is important to Russia for many reasons including:

- Sixty percent of Russian maritime commercial trade transits the Baltic Sea
- Forty-three percent of Russian oil exports transit the Oresund straits (traditionally places of great economic and political importance connecting Scandinavia with Central Europe)
- The Oresund straits are the world's third most strategic oil chokepoint.

Russian rhetoric indicates that it is concerned about maintaining influence in this region.

JLLD partnered with Finland, Great Britain, and Sweden to conduct a study of security in the BSR. The findings provided a shared understanding of the Russian challenge and its implications to the United States, Europe, and NATO, resulting in a common framework for potential countermeasures. The study



Swedish sailors assigned to HSwMS *Karlsand* climb aboard USS *Oscar Austin*, which supports theater security cooperation and forward naval presence in U.S. 6<sup>th</sup> Fleet area of operations, Baltic Sea, September 26, 2017 (U.S. Navy/Ryan Utah Kledzik)

sponsors included the Joint Staff J5, J7, and the U.S. European Command J5.

This study found that the BSR has been a source of innate tension between Russia and the West. Geography, location, economic dependence, demography, media penetration, politics, and lack of a unified approach make the BSR vulnerable to Russian influence. Russia increased nonmilitary and military pressure in the BSR in a long-term effort intended to enhance Russian security, assert great power influence, and confront the West below the threshold of war. BSR countries strengthened their defense postures and increased cooperation, but a collective approach to countering, deterring, and de-escalating Russian aggression proved problematic. Future efforts must be founded on unity, defense capabilities, resilience, and deterrence. The impacts of this work are still developing; however, it is clear that a result of the

study is closer alignment among the participating countries as well as conceptual frameworks for how future cooperation might be enhanced to better mitigate Russian threats.

In addition to the real-time strategic planning insights that this study has provided, many segments of the EPP effort are expected to provide timely and relevant material for professional development. In this case, JLLD produced an “EPP: Baltic Region” study video to provide background content for joint PME classes to engage in seminar-type discussions.

JLLD is beginning the next phase of the project—working with Great Britain and countries in Central Eastern Europe (the Czech Republic, Hungary, Poland, and Slovakia) to better understand their perspectives and evaluate how these perspectives might shape future efforts.

## Global Intelligence, Surveillance, and Reconnaissance

Early in 2017, the CJCS directed Joint Staff J7 to conduct a study on the optimization of global intelligence, surveillance, and reconnaissance (ISR) in support of the U.S. Central Command (USCENTCOM). JLLD began a 90-day study focused on recommendations to enhance the combat effectiveness and efficiency of ongoing DOD combat ISR and complementary processing, exploitation, and dissemination operations. The key question JLLD addressed was whether current practices for prioritization, allocation, and employment of available ISR resources are optimized for combatant commands and joint task forces to achieve their military objectives. The research team (composed of analysts from the Joint Staff J7, J2, and J3) identified 4 findings with 11 actionable recom-



B-1B Lancer, 28<sup>th</sup> Bomb Wing, participates in Baltic Operations Exercise over Baltic Sea, June 9, 2017 (U.S. Air Force/Jonathan Snyder)

mendations as well as several important overarching themes that were outside the study's original scope.

The first finding revealed that joint policies, instructions, and doctrine have not kept pace with the evolution of ISR employment, resulting in ad hoc implementation and disparate organize-train-equip approaches. ISR growth has outpaced ISR policies and enterprise management. There is a stark difference between the information outlined in component doctrine versus joint doctrine. Each Service conducts collection management differently, including use of ISR assets. Recommendations for this finding include providing guidance on roles and responsibilities within the ISR enterprise that will enforce overarching directives and instructions and establish a reporting requirement for better visibility of ISR assets.

The second finding identified the undisciplined processes for enterprise design, architecture, and establishing data standards, resulting in non-interoperable sets of systems and tools that introduced numerous inefficiencies into the ISR enterprise. The recommendation stemming from this finding is that OSD should enforce the provisions of DOD Directive 5143.01, which require the Under Secretary of Defense for Intelligence (USD[I]) to serve as the focal point for intelligence information systems' interoperability and governance processes.

The third finding described the deficiencies in joint force training and joint certification standards necessary for the required skills, knowledge, and abilities at all levels within the ISR enterprise. In short, the joint force needs to professionalize ISR enterprise managers in order to fully optimize assets. The

recommendations associated with this finding included enforcing the requirements for joint certification standards for Service college managers and expanding planners' and leaders' knowledge of how to employ ISR. The latter portion may include developing a curriculum for Services to use in their PME pipelines.

The final finding revealed that joint force organization and manning have not kept pace with the exponential growth of the ISR enterprise. Newly collected ISR data cannot be incorporated if there is an imbalance in the number of personnel assigned to collection; processing, exploitation, and dissemination; and analysis. Recommendations included ensuring that future platform acquisitions are accompanied with commensurate joint force organization, technology, and training; conducting a manpower study to determine the appropriate manning

capacity to support PED and all-source analysis; and minimizing the amount of unprocessed data by implementing the necessary PED manning and technology.

The USD(I), ISR Operations, is leading an executive steering group (ESG) consisting of the Joint Staff J32, Joint Staff Vice Director J2, along with other senior representation from the Intelligence Community (IC) to direct the implementation of the CJCS-approved recommendations and way ahead. The ESG will involve the IC in working groups that will focus on the recommendations, which should provide improvements for optimizing ISR resources. They will not, however, close the widening gap between ISR supply and demand. The current ISR enterprise evolved through an enduring fight against violent extremist organizations (VEOs). Only through an enterprise ISR strategy with associated design/architecture discipline can system integration, interoperability, data analysis, and sharing occur. Governed by a USD(I) defined structure and architecture, the Services, agencies, and partners will be able to provide an ISR force that is flexible, adaptable, organized, trained, and equipped to advance beyond the counter-VEO fight and prepare for a near-peer competitor.

## **The DOD Response to Ebola in West Africa**

This study analyzed *United Assistance*, the DOD support operation for the U.S. Government's response to the Ebola crisis in Liberia in 2014–2015.<sup>6</sup> The operation was the first U.S. military operation to support a disease-driven foreign humanitarian-assistance mission. Initially, the Ebola outbreak seemed to follow its normal pattern, but as infected people traveled to cities to get medical care, the disease spread farther and quicker. Nongovernmental aid agencies normally do not work with the military, but the disease reached a level that could no longer be managed without military logistics.

The unique aspects of the mission, evolving DOD roles, lack of understanding of the operational environment, and force projection shortfalls presented

an array of challenges in establishing an expeditionary base in an austere environment. Although limited in capability, the use of a Service component headquarters, coupled with key enablers, opened the theater, supported immediate operations, and provided time to prepare for a tailored follow-on headquarters and response force. The 101<sup>st</sup> Airborne Division (Air Assault) executed a disciplined operation that supported the lead Federal agency (the United States Agency for International Development), avoided mission creep, and enabled a timely and orderly redeployment that included a 21-day controlled monitoring regimen.

Despite the success of the operation, shortfalls were revealed in planning, policies, and preparedness across DOD, which need to be addressed. Currently, epidemiologists are greatly concerned about future and more dangerous global infectious disease outbreaks. While this report was primarily written for the U.S. military, others, including U.S. departments and agencies, healthcare organizations, and nongovernmental organizations, may benefit from the discussion and recommendations documented.

This study provided key input directly to the White House Ebola Lessons Learned Summit and informed the Ebola report sent to President Barack Obama. More than 100 recommendations for strategic, operational, and tactical issues were produced, which were used to inform and improve joint doctrine, education, training, and concept development. In addition, the study provided key lessons and a framework for U.S. Africa Command senior leader after action review. JLLD additionally produced a Joint Knowledge Online instructional video and two case studies: *Rapid Deployment into an Undeveloped Theater*<sup>7</sup> and *Employment in Support of Interagency Partners*.<sup>8</sup>

## **Operational Contract Support**

The USCENTCOM Director for Logistics (J4) requested that the JLLD conduct a study to analyze and capture lessons and best practices to operationalize and institutionalize operational contract support (OCS) throughout the

command's area of responsibility. The study focused on OCS at its headquarters and forward headquarters, Combined Joint Task Force—Operation *Inherent Resolve*, U.S. Forces—Afghanistan, and subordinate Service components.

While the Armed Forces have routinely used contract support, the scope and scale of contractor use during Operation *Iraqi Freedom* and Operation *Enduring Freedom* were unprecedented. Significant contracting failures and reports of massive fraud, waste, and abuse during this period prompted Congress and the Secretary of the Army to create independent commissions to assess the extent of damage and to develop solutions to this crucial DOD and Service-wide problem. The OCS concept was developed and shaped as one of the solutions to this problem set. The reduction of force structure and manning, mission-specific force cap restrictions, and the continual introduction of high-tech equipment all point to the fact that the use of and diversity of contract support will continue to play a crucial role in military operations. Over the past decade, the Iraq and Afghanistan theaters combined have employed more contractors than military personnel.

The study team discussed OCS challenges in interviews with numerous senior leaders and subject matter experts representing USCENTCOM, OSD, Joint Staff, and the Services. These discussions made it clear that while the *DOD OCS Action Plan (FY2015–FY2018)*—developed by the Deputy Assistant Secretary of Defense (Program Support), Joint Staff Logistics Directorate (J4), and the implementation approach taken by USCENTCOM J4 (CCJ4)—has been successfully guiding and enabling OCS advancement, significant challenges from institutional and operational perspectives still exist.<sup>9</sup>

The study developed 9 critical findings and over 40 recommendations; however, the most crucial challenges that will affect OCS progress are manning and training. Overcoming many of these challenges will require substantial support and endorsement at the highest levels of leadership. A few of the key findings/recommendations of the study include:

- A commander's establishment of and involvement in contract review processes were critical to contract oversight.
- Ill-defined manning requirements, combined with training and education shortfalls, complicated OCS implementation; however, ongoing efforts have reduced gaps and advanced OCS institutionalization.
- Resource constraints, method of manning, and personnel turnover all challenged Operational Contract Support Integration Cell (OCSIC) manning, with no identified institutional solution.
- Inadequate doctrine and policy complicated execution of OCS in theater.
- USCENTCOM's efforts to support the commander with OCSIC information management processes improved, but they remain immature.

While the study focused within the USCENTCOM area of responsibility, the recommendations included both operational (USCENTCOM-specific) and institutional (DOTMLPF-P) perspectives. This study was just recently approved for release to the DOD-wide community, so its full effect is not yet realized. However, JLLD has been working closely with Joint Staff J4 and OSD Program Support representatives, and the study findings and recommendations are being used to support a DOTMLPF-P Change Recommendation package currently being drafted within the Joint Staff and OSD.

## Integration into Joint Force Development

Regardless of the source, the JLLD strives to integrate lessons-based knowledge across the joint force. Primarily, the division does this by maintaining relationships with organizations representing the activities of Joint Force Development: concepts, cyber, doctrine, education and leader development, and training.

The JLLD ensures that the lessons learned community is informed of ongoing and completed studies and reports

and also works to reformat and repackaging lessons-based knowledge in formats that are suitable for other applications. For example, the division frequently creates case studies and educational vignettes that are quickly transitioned into the JPME II program at the Joint Forces Staff College. Regarding concept development, the division provides tailored inputs from lessons-based knowledge (whether studies-based, JLLIS-based, or from other sources) that can improve the development of joint concepts. The JLLD ensures that all joint doctrine under review (or development) benefits from the inclusion of lessons-based knowledge. To support joint training, the division provides tailored analysis summaries, which give combatant command and joint exercise planners resources and information to support their planning for and execution of operational-level exercises. Regarding cyber, the division, in partnership with the Joint Staff J7 Training Division, co-chairs a working group that builds awareness and provides support to the J7. Finally, in support of building the lessons learned community, the JLLD holds action officer and O6-level working groups, hosts an annual conference, and a General Officer's Steering Committee that maintain situational awareness across the community.

Maintaining the profession of arms requires many people working together. The Joint Lessons Learned Division plays a vital role in expanding the body of unique knowledge regarding our profession. This knowledge is gained by canvassing at the grassroots level through the collection of lessons learned. It is augmented by mining those lessons learned to identify key issues, concerns, and best practices to improve DOTMLPF-P and by identifying key themes to senior leaders. It also is augmented by robust and timely analysis of operational issues to provide immediate feedback to the joint warfighter. Many of the studies are shared through PME forums. All studies are posted on classified or unclassified Web sites. Often, sponsors of studies implement recommendations in real time even as the study is under way. In short, JLLD

promotes the profession of arms and ensures that the body of knowledge remains timely, relevant, and useful. Lastly, as the modern nature of warfare continues to rapidly change, the process of learning must keep pace or we will find ourselves at a competitive disadvantage with our adversaries. *JFQ*

## Notes

<sup>1</sup> Joseph F. Dunford, Jr., speech delivered at the graduation exercises of the National Defense University, Washington, DC, June 9, 2016; video available at <[http://original.livestream.com/ndustreampremium/video?clipId=pla\\_e501087a-a2fc-4ec1-9c6a-1dd18f43dc97&rt=3&ra=483661](http://original.livestream.com/ndustreampremium/video?clipId=pla_e501087a-a2fc-4ec1-9c6a-1dd18f43dc97&rt=3&ra=483661)>.

<sup>2</sup> Martin E. Dempsey, *America's Military—A Profession of Arms* (Washington, DC: The Joint Staff, n.d.), available at <[www.jcs.mil/Portals/36/Documents/Publications/aprofessionofarms.pdf](http://www.jcs.mil/Portals/36/Documents/Publications/aprofessionofarms.pdf)>.

<sup>3</sup> Martin E. Dempsey to George Flynn, "Chairman Direction to J7," official letter, October 6, 2011.

<sup>4</sup> *Decade of War, Volume I: Enduring Lessons from the Past Decade of Operations* (Suffolk, VA: Joint Lessons Learned Division, 2012), available at <<https://intelshare.intelink.gov/sites/jcoa/default.aspx>>.

<sup>5</sup> *Security in the Baltic Region* study available with Common Access Card and subscription at <<https://intelshare.intelink.gov/sites/jcoa/EPP/default.aspx>>.

<sup>6</sup> *Operation United Assistance* study available with Common Access Card and subscription at <<https://intelshare.intelink.gov/sites/jcoa/Pages/ebola.aspx>>.

<sup>7</sup> *Operation United Assistance: The DOD Response to Ebola in West Africa—Rapid Deployment into an Undeveloped Theater Case Study* (Suffolk, VA: Joint Lessons Learned Division, 2016), available at <[https://intelshare.intelink.gov/sites/jcoa/Products/OUA\\_Case\\_Study\\_1\\_U.pdf](https://intelshare.intelink.gov/sites/jcoa/Products/OUA_Case_Study_1_U.pdf)>.

<sup>8</sup> *Operation United Assistance: The DOD Response to Ebola in West Africa—Employment in Support of an Interagency Partner* (Suffolk, VA: Joint Lessons Learned Division, 2016), available at <[https://intelshare.intelink.gov/sites/jcoa/Products/OUA\\_Case\\_Study\\_2\\_U.pdf](https://intelshare.intelink.gov/sites/jcoa/Products/OUA_Case_Study_2_U.pdf)>.

<sup>9</sup> *Department of Defense Operational Contract Support Action Plan FY2012–FY2018* (Washington, DC: Office of the Deputy Assistant Secretary of Defense for Program Support, 2015), available at <[www.acq.osd.mil/log/PS/\\_ocs\\_action\\_plan.html/OCS\\_Action\\_Plan\\_FY15-18\\_Extract.pdf](http://www.acq.osd.mil/log/PS/_ocs_action_plan.html/OCS_Action_Plan_FY15-18_Extract.pdf)>.



After serious flooding in Haiti's north, its government, with support of United Nations Mission in Haiti and other UN agencies, responded with evacuations, temporary shelters, and distribution of food and supplies, November 11, 2014 (UN/Logan Abassi)

# Climate Change and Urbanization

## Challenges to Global Security and Stability

By Ronak B. Patel and David P. Polatty IV

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Two global trends that present monumental new challenges for civil-military coordination in humanitarian crises are urbanization—the growth of cities across the world—and climate change. The following article explains how these two trends and their interactive effects will increasingly complicate and test civil-military coordination in human-

itarian crises. Each trend individually intensifies the risk for crises and makes responses remarkably more complicated. The manner in which these two trends interact to drive and escalate further crises is also becoming clearer. The humanitarian community has begun to address these challenges in its operations by debating their impact on coordination and thinking through

potential actions that can facilitate more resilient approaches to crisis preparedness. Militaries, increasingly engaged in supporting humanitarian missions in both natural disaster and conflict settings, face a rapidly changing environment. Civil-military coordination in these crises must be re-examined, and militaries must adapt to this shifting landscape in order to operate effectively with humanitarian actors.

## Climate Change and Cities

Climate change greatly exacerbates and complicates known threats affecting urban areas. The role that climate change plays in driving and compounding natural disasters, displacement, pandemics, and even conflict in cities forces militaries to rethink how they conduct humanitarian assistance and disaster response operations. The Intergovernmental Panel on Climate Change (IPCC) predicts an average sea level rise of 0.4 meters by 2100 in the best and least-likely scenario, but projections with unchecked emissions predict a rise of up to two meters.<sup>1</sup> Global temperature is forecast to increase by 2 to 3 degrees Celsius by the end of the century keeping current emissions commitments.<sup>2</sup> This rise in temperature alters precipitation and ocean atmospheric patterns, increasing the severity and frequency of storms.<sup>3</sup> By 2030, two-thirds of the global population is expected to live within 100 miles of a coastline, with over 1 billion people expected to live in low-lying coastal zones, those within 10 meters of sea level.<sup>4</sup> A majority of megacities, those with populations above 10 million, contain this vulnerable geographic zone and climate change places these urban centers at risk.<sup>5</sup>

Additionally, sea level rise and warming have multiple destructive consequences as they contribute to food insecurity, drive population displacement, and in some cases, conflict. Many experts predict that hundreds of millions of people will migrate in the next few decades due to environmental change that will cause drought and increase the salinity of freshwater sources, leading to food shortages and loss of agricultural livelihoods.<sup>6</sup>

For many, this will be unpredictable, sudden, and maladaptive displacement within and across borders. This displacement will be increasingly into urban areas where the majority of refugees now live.<sup>7</sup>

Both urbanization and climate change also collude to increase the global risk of pandemics. The 2014 Ebola outbreak in West Africa and the recent Zika virus epidemic demonstrate how infectious pathogens can have devastating consequences in a globalized and urban world, with increasing density and inadequate public health and healthcare systems. Previously self-limiting outbreaks can now enter the cauldron of urban slums that receive both migrants and displaced populations within a dense urban landscape, aggressively facilitating the spread of disease. Without the capacity to detect, respond, and quarantine effectively and safely, growing cities fueled the Ebola epidemic in West Africa, threatening a pandemic. Climate change contributes as well by dramatically altering environments. Greater humidity enhances the range and altitude of mosquitos, while warming waters allow conditions for cholera to spread beyond its typical locales, respectively.<sup>8</sup>

## Climate Change and Conflict

Climate refugees are, in and of themselves, imperatives for humanitarian action, but they can also demographically and economically stress local host populations and lead to conflict. While no causal link has been proved, the pathway is becoming more evident.<sup>9</sup> Former Secretary-General of the United Nations (UN) Ban Ki-moon cited the Darfur conflict as a potential example of climate change-induced conflict, as drought drove displacement and ultimately led to conflict.<sup>10</sup>

While climate change has historically been a polarizing topic in U.S. politics, the Intelligence Community, in 2008, prepared the *National Intelligence Assessment on the National Security Implications of Global Climate Change to 2030*. This assessment notes that

*we judge global climate change will have wide-ranging implications for U.S.*

*national security interests over the next 20 years. . . . The United States depends on a smooth-functioning international system ensuring the flow of trade and market access to critical raw materials such as oil and gas, and security for its allies and partners. Climate change and climate change policies could affect all of these—domestic stability in a number of key states, the opening of new sea lanes and access to raw materials, and the global economy more broadly—with significant geopolitical consequences.<sup>11</sup>*

There have been numerous updates since this initial assessment, culminating in the September 2016 release by the U.S. Intelligence Community and National Intelligence Council of a memorandum, *Implications for U.S. National Security of Anticipated Climate Change*.

This memorandum highlighted that climate change “will almost certainly have significant effects, both direct and indirect, across social, economic, political, and security realms during the next 20 years. These effects will be all the more pronounced as people continue to concentrate in climate-vulnerable locations, such as coastal areas, water-stressed regions, and ever-growing cities.”<sup>12</sup> The nexus of climate change and urbanization present wide-ranging threats to not only U.S. national security, but also global security and stability and the health and welfare of potentially billions of vulnerable people.

## Cities and Conflict

Humanitarian response in cities is incredibly challenging, particularly in those afflicted by conflict. As power is typically defined by territorial control, cities represent the most valuable domain in conflict and serve as one of the principal metrics by which to measure control. Cities serve as the seats of power and the battlefields of modern conflict.<sup>13</sup> Coordinating with a humanitarian response in conflict will entail actively engaging these new urban landscapes. The layout and density of these rapidly growing urban spaces present concrete operational challenges. Large swaths of informal settlements,



Fire Controlman from USS *Lake Erie* works with Sri Lankan marines to repair levees in Matara, Sri Lanka, during humanitarian assistance operations in wake of severe flooding and landslides, June 12, 2017 (U.S. Navy/Joshua Fulton)

or slums, which represent over 50 percent of many urban environments, are a hallmark of growing cities.<sup>14</sup> These are often unmapped areas, marked by narrow ingress and egress routes and little to no lighting. Most have proved difficult or nearly impossible to police and many have been ceded in all intents and purposes to criminal elements.<sup>15</sup> In fact, in many of these cities, state authorities do not have a monopoly on power or violence, with multiple actors who are not bound by international humanitarian law effectively in control of many parts of the city. Displayed most prominently in Latin American cities, criminal violence has led to homicide rates that exceed violent death rates in some declared wars.<sup>16</sup> Militaries that engage in humanitarian operations,

either to support logistics or provide security, face a multitude of challenges that they may not have dealt with in the past and, therefore, have not been trained to effectively respond to.

### The Complexity of Urban Response

Due to rapid urbanization, over 50 percent of the global population now lives in urban areas. This is accelerating at a pace that will see the urban population grow to 66 percent of the global total by 2050, while the rural population declines.<sup>17</sup> Humanitarian response will increasingly take place in these rapidly growing cities as they concentrate the risks and hazards to natural and man-made disasters. Unregulated growth, deficiencies in basic services, inadequate

disaster preparedness, and poor mitigation efforts place populations at greater risk for crises that will necessitate an international humanitarian response.<sup>18</sup>

The very nature of humanitarian response is being rethought because of urbanization's increasing complexity.<sup>19</sup> Urban crises now entail a much broader variety of actors aside from international aid agencies, state authorities, and national militaries. There is a larger role being played by municipal authorities that increasingly lead and coordinate aid responses. Local community-based organizations and nongovernmental organizations provide goods and services before, during, and after a crisis, and may be a major source of on-the-ground efforts during an urban response. Similarly, the private sector provides the majority

of goods and services in urban areas, and they are an important part of the initial response and recovery.<sup>20</sup> This is increasingly recognized by humanitarian organizations that now engage in market analyses and cash transfers, as well as support markets, rather than simply delivering hard goods. There are also myriad stakeholders that must be taken into account, especially local communities affected by the crisis, among other informal and formal powerbrokers. As described above, various powerbrokers may control territory and even provide what traditionally have been public services, such as a mafia organization providing electricity. Humanitarian engagement in these environments requires a deep contextual understanding of local communities.

Militaries coordinating with civilian actors will face similar complexities, even when they refrain from the “retail” or service delivery side of the response. The very need to coordinate with numerous actors and authorities will necessitate a re-examination and modification, at the least, of standard operating procedures and traditional frameworks for engagement.

The humanitarian community itself is reassessing its approach to coordination in urban crises, with much of the above informing the new Urban Crises Charter released by the Global Alliance for Urban Crises at the May 2016 World Humanitarian Summit.<sup>21</sup> This charter emphasizes the need to promote a localized and holistic approach to humanitarian response, with a detailed contextual analysis and local participation and ownership of the process. These ideas have permeated various emerging methods such as area-based programming as well as a settlement approach to urban response. While the humanitarian architecture continues to evolve to better deal with urban challenges, militaries coordinating in these crises must similarly adapt, whether coordinating to support logistics, conducting engineering and infrastructure support, or providing protection for a humanitarian mandate.

## Military Operations

Urbanization poses massive security, logistics, health, and healthcare

challenges to any current or future humanitarian response that will take place in or around a megacity. Most international militaries do not specialize or routinely train for urban operations. Even the U.S. Army, arguably the world’s most capable modern ground force, is not designed to operate in complex urban settings. U.S. Army Chief of Staff, General Mark A. Milley, has publicly stated that the Service “has been designed, manned, trained and equipped for the last 241 years to operate primarily in rural areas.” He further elaborated that the Army needs to prepare “for operations in urban areas, highly dense urban areas, and that’s a different construct. We’re not organized like that right now.”<sup>22</sup> Tragic recent and ongoing humanitarian crises in relatively small cities, including Aleppo, Syria (~2.5 million people in 2012), and Mosul, Iraq (~664,000 people in 2015), have highlighted the unique dangers that exist to vulnerable people, medical responders, and humanitarian organizations in urban environments. Not only have these groups found themselves under nearly constant attack by militaries and non-state actors, but they also cannot easily gain access to food, water, medicine, and other basic lifesaving needs.

Observing the death toll of hundreds of thousands of innocent civilians in Aleppo, Syria, from 2001 to 2016—and then considering the fact that Aleppo is not even in the top 150 cities in the world by population—should serve as a warning beacon for humanity to more effectively think through future conflicts and humanitarian emergencies in large cities.<sup>23</sup> In these urban environments, comprehensive civil-military coordination becomes an even greater imperative to ensure that access to vulnerable people is gained and maintained until the conflict is resolved or an enduring ceasefire is implemented.

## Opportunities

Given the challenges for military engagement regarding the acute phase of an urban humanitarian response listed above, there may be an increasing role and opportunity to improve civil-military

coordination in the pre-disaster phase. Performing these activities in predictably high-risk cities, where politically feasible and in line with national interests, opens an area of military engagement in humanitarian efforts as part of a potentially larger grand strategy. Cities that have existing military bases and ongoing activity present a logical starting point with clear direct benefits for those military installations, the communities they are collocated with, and overall efforts by all actors in the humanitarian ecosystem to improve responses.

More frequent, realistic, and robust simulations and exercises with specific involvement of municipal authorities, local nongovernmental organizations, and stakeholders from selected cities, along with the UN and major humanitarian agencies, may help improve humanitarian response and coordination in future crises. When appropriate, including international militaries in these simulations and exercises may allow key relationships to form prior to disasters and provide all actors with a deeper understanding of challenges and opportunities for improving coordination. Also, frameworks and processes for coordination can be explored and tested in the non-acute disaster phase.

Various militaries are engaged in efforts to improve coordination (for example, U.S. Pacific Command’s Rim of the Pacific [RIMPAC] exercise), and sometimes the efforts include key civilian actors from the humanitarian response community. From RIMPAC and other similar exercises and simulations, there is an excellent opportunity to take best practices from civilian-civilian and military-military coordination tools and methods and learn from them to improve civil-military coordination.

Taking global scenarios and long-term predictions of climate change down to likely scenarios, over shorter time frames and for specific regions and cities, may help identify hotspots—indicators for early warning—and develop tools that decisionmakers can use in urban planning, forward deployment of resources, disaster preparedness, and humanitarian response planning. These are shared interests among civilian and military actors



U.S. Servicemembers assigned to Combined Joint Task Force—Horn of Africa periodically visit children in Caritas Djibouti mission in downtown Djibouti to donate food items, toys, clothing and supplies, April 26, 2017 (U.S. Air Force/Eboni Prince)

and may very well serve as a rallying point due to the perceived neutrality of diverse actors coming together in a “safe” academic setting.

Similarly, shared tools and efforts to understand and map the key actors and factors that influence and dictate the security environment, particularly for vulnerable populations, present a common area for work. This may also encourage a wider discussion on how militaries may better comply with international humanitarian law or provide protection and access within humanitarian corridors in conflict environments.

Finally, increased interaction between academics from civilian and military universities—specifically those engaged in humanitarian research and education fields—allows a unique opportunity to conduct research and writing that tackles some of the most pressing issues facing vulnerable people and communities

both in urban environments and due to climate change. Academics from military universities often have tremendous influence on the development and evolution of military doctrine within their nation’s military. The same can be said for academics from civilian universities who frequently work closely with, and often deploy in support of, humanitarian organizations, and therefore can help drive process and framework improvements for humanitarian responses. Expanding opportunities for civil-military academics to exchange ideas in symposia, classrooms, and simulations may only further accelerate improvements to civil-military coordination efforts.

### Conclusions

The profound challenges that urbanization and climate change present for humanitarian response and thus civil-military coordination in disasters

and conflict settings require focused discussion and reevaluation. A new model or architecture for civil-military coordination may be required as global challenges become increasingly complex. Better communication remains a priority and becomes imperative in the face of these new complex challenges. Humanitarians tend to use open communication platforms and new technologies such as Web-based assessment tools, crowd-sourcing, and open street mapping; these innovative approaches are pushing the envelope further. Military communication systems, by design, are closed, often classified in nature, and value information control. A new communications platform for shared resources may better enable aid agencies and militaries to coordinate with each other, let alone with local actors that are increasingly taking a more prominent role in humanitarian response.

Humanitarian actors may also have to align closer to certain international military efforts, in some cases of conflict, to ensure access to populations in need. At the very least, humanitarian and military communities will benefit from exploring new models of coordination together. Options to improve the effectiveness and efficiency of civil-military engagement include joint training, workshops, simulations, and research collaborations where we can explore broad approaches to better innovate together. While certain goals to improve civil-military coordination can be described conceptually, designing a new operational framework is far off until humanitarian actors and militaries commit the time and resources to working together in safe spaces such as conferences and classrooms. The next decade will force all actors to collectively pursue inventive solutions to coordination challenges in these complex crises, and new modes of operation and patterns of engagement may develop on the ground before any pre-defined protocols are formalized. Honest and collaborative discussions and explorations of new civil-military coordination frameworks and processes are urgently needed to keep pace with a rapidly changing and increasingly dangerous world. JFQ

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General Dunford walks past B-52 aircraft during tour of Andersen Air Force Base, Guam, February 8, 2018 (DOD/Dominique A. Pineiro)



# Structuring Airpower to Win in 2030

## Designing a Joint Division of Labor Between Land- and Sea-Based Combat Aviation

By Josh Wiitala and Alexander Wright

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The Chairman of the Joint Chiefs of Staff characterizes American power projection capabilities as “a key military center of gravity” in the pursuit of 21<sup>st</sup> century U.S. interests.<sup>1</sup> Potential U.S. adversaries understand this and are pursuing cost-imposing advances in missile technology and electronic warfare focused on preventing both the deployment and employment of U.S. expeditionary forces. These technologies, along with their associated operational postures, are known collectively as antiaccess/area-denial (A2/AD) and have been the subject of rigorous analysis across the Department of Defense (DOD) for nearly a decade.

This series of studies gained high-level attention in 2009 when Secretary of Defense Robert Gates authorized an operational concept known as Air-Sea Battle (ASB). ASB sought to combine American air and maritime forces in new



KC-135 Stratotanker assigned to 340<sup>th</sup> Expeditionary Air Refueling Squadron, Al Udeid Air Base, Qatar, refuels Navy F/A-18E/F Super Hornet assigned to USS *Theodore Roosevelt*, performing precision airstrikes against six Taliban narcotic targets in Helmand Province, Afghanistan, December 7, 2017 (U.S. Air Force/Jeff Parkinson)

and novel ways that would “disrupt, destroy, [and] defeat” A2/AD systems in order to achieve joint objectives.<sup>2</sup> ASB was evaluated and refined for over 5 years in “more than two dozen Service, combatant command, joint and allied war games, experiments, studies and exercises.”<sup>3</sup> These evaluations not only illustrated the value of closer integration of air and maritime forces, but also revealed that “A2/AD capabilities evolved more quickly than anticipated and could only be dismantled at high levels of risk” under the ASB construct.

As a result, ASB was rescoped and revamped into a new joint concept termed *Joint Concept for Access and Maneuver in the Global Commons* (JAM-GC). This new concept replaced ASB’s comparatively narrow focus on defeating and destroying A2/AD systems with the broader goal of “defeating an adversary’s plan and intent.” JAM-GC also expanded to encompass all five warfighting domains

(land, sea, air, space, and cyberspace) in order to more comprehensively leverage U.S. advantages in overcoming the “challenge of contested access and maneuver in the global commons.”<sup>4</sup>

Going forward, the lessons learned during nearly a decade of concept development must be translated into a joint force structure capable of defeating A2/AD and preserving America’s power projection advantage. However, such a force structure will only be effective if it is pursued through a *joint* approach to acquisitions from concept development through the operational fielding of tomorrow’s warfighting platforms. This article elaborates on how a complementary division of labor between a next-generation, purpose-built carrier air wing and land-based long-range strike bombers could contribute to the air portion of JAM-GC’s multidomain vision for defeating both the “plan” and “intent” behind A2/AD.

## Service-Specific Plans

To set the stage for the attributes required in a genuinely joint force structure, our discussion begins with a depiction of the individual plans for the Air Force and Navy for addressing A2/AD in the air domain, beginning with the Air Force’s Air Superiority 2030 Flight Plan (AS 2030).<sup>5</sup> The overall lead for the study, Brigadier General Alex Grynkevich, asserts American airpower has been so successful in post-Cold War conflicts that “Many can no longer conceive of a world in which U.S. air superiority is not a given”; however, “the world has changed” with the advent of A2/AD.<sup>6</sup> As a result, AS 2030 operates under the assumption that the United States “may no longer be able to prevent adversaries from operating within [its] own integrated air defenses.” Instead, U.S. airpower “will control [its] airspace for a discrete time

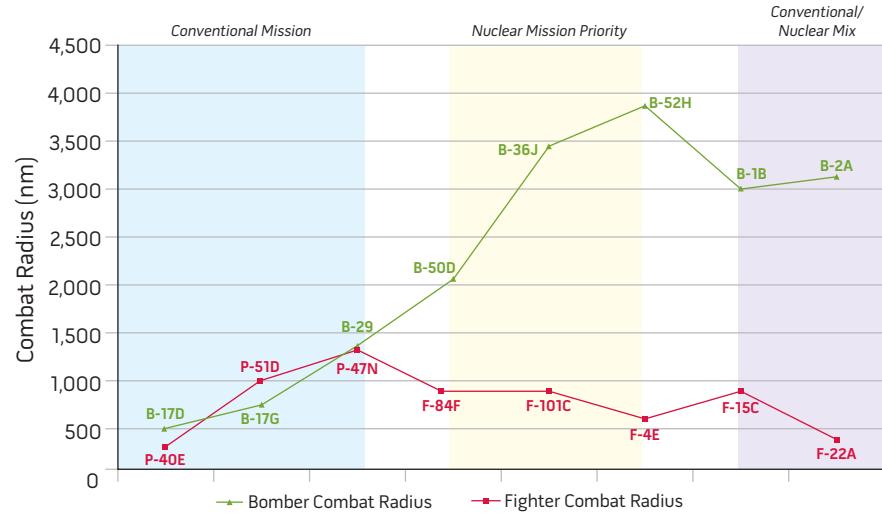
and over a limited area, as defined by the needs of the joint force team.”<sup>7</sup> This vision for airpower in 2030 coincides with the findings of a Defense Science Board Task Force on Air Dominance and aligns well with JAM-GC’s admission that A2/AD capabilities have progressed at a pace that makes ASB’s initial emphasis on destruction of A2/AD systems an overly risky approach.<sup>8</sup>

Given this new operational environment, AS 2030 envisions a multidomain approach (air, space, and cyberspace) to air superiority with four force structure considerations. Three of these are specifically relevant to JAM-GC’s overarching goals. The first consideration is range, which is simply the ability to operate from distances outside the range of most antiaccess threats, making these threats “more manageable” and preserving the Air Force’s ability to field combat power.<sup>9</sup> This consideration seeks to reverse the longstanding trend of ever-shrinking fighter range and ever-increasing bomber range illustrated by the figure.

Second, AS 2030 advocates for a mix of “both standoff and stand-in capabilities.” This force structure allows standoff platforms to launch survivable munitions from safe ranges while survivable stand-in platforms provide the timely targeting information to make such strikes effective. The stand-in portion of this force structure will be characterized by a counter-air and strike team comprised of the Air Force’s new penetrating counter-air (PCA) program and the long-range strike-bomber (B-21) program. In this construct, PCA provides “air superiority . . . within the adversary IADS [integrated air defense systems],” while the new stealth bomber destroys “airfields and logistics targets” critical to adversary counter-air efforts.<sup>10</sup>

Third, these standoff and stand-in platforms are linked together by “new concepts for multidomain command and control (C2) and new multidomain tactics.”<sup>11</sup> Reminiscent of David Deptula’s “combat cloud” concept,<sup>12</sup> this consideration generates “a truly networked and integrated family of capabilities” able to link and therefore leverage all the sensors and shooters in a given area in a seamless

**Figure. Divergence of U.S. Fighter and Bomber Combat Radius Post–World War II**



Source: John Stillion, *Trends in Air-to-Air Combat: Implications for Future Air Superiority* (Washington, DC: Center for Strategic and Budgetary Assessments, 2015), 52, available at <<http://csbaonline.org/uploads/documents/Air-to-Air-Report-.pdf>>.

and lethal fashion.<sup>13</sup> This consideration highlights what Chief of Staff of the Air Force General David L. Goldfein terms “War in the Information Age.”<sup>14</sup> In this new environment, “advantage will be achieved through the speed and integration of information.”

Like the Air Force, the Navy conducted its own examination of the problem-set and proposed a slightly different approach to combating A2/AD within its own unique operational and budgetary environments. The essence of this approach is articulated well by former Chief of Naval Operations Admiral Jonathan Greenert who stated:

*It is unaffordable . . . to adapt a platform by replacing either it or its integral systems each time a new mission or need arises. We will instead need to change the modular weapon, sensor, and unmanned vehicle “payloads” a platform carries or employs. In addition to being more affordable, this decoupling of payload development from platform development will take advantage of a set of emerging trends in precision weapons, stealth, ship and aircraft construction, economics, and warfare.<sup>15</sup>*

In contrast with the Air Force’s plan, the Navy has already largely bought into

its future force structure from a platform perspective and instead envisions countering A2/AD with increasingly capable payloads able to mitigate risk and enhance offensive operations.

## A Vision for Joint Airpower in 2030

The JAM-GC team leads insist that A2/AD requires joint forces that are “distributable, resilient, and tailorable, as well as employed in sufficient scale and for ample duration,” and such attributes are certainly compatible with many of the traits envisioned by individual Service plans.<sup>16</sup> The JAM-GC team is clear, however, that its concept will not impose force structure requirements across the military Services. In short, JAM-GC “will not replace the Services’ unique programming, requirements, and acquisition processes, nor will it direct any specific funding actions.”<sup>17</sup> However, if JAM-GC were allowed to dictate a unique joint force structure from the ground up, it could provide the vision required to secure unity of effort among the Services regarding the A2/AD threat. Given that the Air Force and Navy are looking at large-scale recapitalization of legacy combat aircraft over the next two decades, JAM-GC



B-1 bomber conducts suppression of enemy air defenses training at Ellsworth Air Force Base, South Dakota, July 15, 2016 (U.S. Air Force/Sadie Colbert)

should be the foundation for a division of labor between air- and sea-based combat aviation designed specifically to negate the operational advantages of A2/AD. Today's Air Force and Navy combat aviation forces fight well together but are, with few exceptions, built and scaled to fight independently of each other. If designed to depend on each other for specific functions, such a *purpose-built* approach could yield efficiencies that make the force more effective against emerging threats.

One example of a purpose-built approach exists today in the partnership between the Air Force's penetrating long-range strike community and the Navy's electronic attack community. While every carrier air wing has its own organic complement of EA-18G electronic attack aircraft, the Navy also fields four expeditionary squadrons that operate from land. These squadrons consistently train and integrate with Air Force B-2s outside the normal carrier air wing construct. This longstanding operational relationship facilitates seamless integration between the two communities and reflects a truly joint division of labor for the electronic attack and long-range strike mission sets.

Some argue Air Force retirement of the EF-111/F-4G team without dedicated replacements left the Service with critical capability shortfalls in the electronic attack (EA) and the suppression of enemy air defenses (SEAD) mission sets.<sup>18</sup> But this critique seems to focus on the small size of today's EA/SEAD fleet rather than on today's joint division of labor, which actually represents a rare success in the longstanding pursuit of joint force structure development. If a purpose-built joint division of labor were applied to other mission sets across the joint force, individual Services could develop platforms that intrinsically complemented other joint capabilities from inception through fielding. Applying this concept to the air superiority mission illustrates what a purpose-built carrier air wing could bring to the fight against A2/AD if partnered in a complementary manner with Air Force long-range strike.

### The Purpose-Built Carrier Air Wing

Today's carrier air wing is best described as a "jack-of-all-trades," able to effectively transition between counter-air, strike, SEAD, and counter-maritime

missions. This level of flexibility is enabled by the F/A-18 family of strike fighters; however, such adaptability comes at a cost. While today's Super Hornets offer increased speed, maneuverability, and overall survivability over their fleet predecessors, the F/A-18's 370 nautical mile combat radius significantly reduces the carrier air wing's reach compared to previous generation platforms, such as the A-7, with its more than 600 nautical mile combat radius.<sup>19</sup> This dynamic will change somewhat with the introduction of the F-35C. In a stealthy configuration, the F-35 will not be able to match the payload of the F/A-18E/F variants; however, it has a lot to offer the fleet given its advanced sensor suite, next generation datalink, low observable technology, and 613 nautical mile combat radius.<sup>20</sup> Yet as a multirole fighter "optimized" for air-to-ground missions, the F-35 will not be tailored to counter key aspects of the A2/AD environment in the same manner as AS 2030's envisioned PCA program.<sup>21</sup>

This is where a truly joint force structure offers important advantages that extend beyond those gained by simply

developing joint platforms. If the Navy relied on Air Force bombers to provide strike capacity and augment the counter-maritime capabilities of the carrier strike group, air wings could focus on the counter-air and, to some extent, SEAD mission sets. Such a change to force structure would not mean that every carrier air wing would convert to this new arrangement; the jack-of-all-trades air wing will remain immensely valuable to American power projection for the foreseeable future, particularly in areas without strong A2/AD capability. However, if specific air wings were designed from the ground up for the counter-air mission, in terms of both force structure and platform attributes, their contribution to JAM-GC would be immense as they provided the temporary air superiority in a contested environment discussed by AS 2030.

The Air Force envisions PCA as the air superiority capability of the future and stresses the need for increased platform range and survivable basing.<sup>22</sup> For the Air Force, the concept of survivable basing is inherently influenced by the specific geography of a given scenario. For the Navy, geography certainly matters, but one of the paramount virtues of the carrier is its mobility. In an operational sense, carrier mobility creates bases at more optimized distances from areas of interest. In a tactical sense, carrier mobility increases combat aircraft basing survivability. These dynamics led the Hudson Institute to conclude that a “major reduction in the number of tactical fighter sorties generated from short-range airbases due to aircraft and missiles attacking airbases would place a premium on the ability of the [carrier strike group] to conduct [offensive counter-air] and selective [defensive counter-air] missions, or other missions such as escorting long-range Air Force bombers.”<sup>23</sup>

In a recent op-ed, Chief of Naval Operations Admiral John Richardson wrote that A2/AD threats to the surface fleet “represent danger . . . but the threats are not insurmountable.” Instead, he asserts that a “successful engagement requires completion of a complex chain of events [where] each link . . . is vulnerable and can be interrupted.”<sup>24</sup> Admiral Richardson’s statement reflects the reality

**Table. Bomber Contributions to Conventional Combat Operations Since World War II (%)**

	Korea	Vietnam	Desert Storm	Allied Force	Enduring Freedom	Iraqi Freedom
Percent Munitions Delivered	27	44	32	47	66	27
Percent of Combat Forces (USAF, USN)	8	8	3	5	10	7

*Source:* Michael R. Moeller, *U.S. Bomber Force: Sized to Sustain an Asymmetric Advantage for America* (Arlington, VA: Mitchell Institute for Aerospace Studies, 2015), 13, available at <[http://docs.wixstatic.com/ugd/a2dd91\\_252420b7d1d04ae59b818e72c416af16.pdf](http://docs.wixstatic.com/ugd/a2dd91_252420b7d1d04ae59b818e72c416af16.pdf)>.

that even in an era of highly accurate long-range missiles, mobile targets continue to stress the world’s most advanced long-range kill chains as tacticians develop new employment paradigms for naval forces such as “hit-and-run” tactics that minimize the carrier’s time in a given threat envelope.<sup>25</sup> In certain global geographies and threat environments, this enhanced survivability of naval aviation basing will be vital to supplementing land-based air superiority forces in the 2030 timeframe, making it critical that the carrier air wing is able to provide the right portion of American power projection at the appropriate time and place.

Fielding an air wing focused largely on the counter-air mission will require a platform or family of platforms similar to the Air Force’s envisioned PCA program. This future program could end up resembling today’s Joint Strike Fighter program where three Services develop their own variant of the same aircraft. The early phases of the F-35 program, however, illustrate that attempting to field a single aircraft capable of suiting Air Force and Navy requirements can result in delays and cost overruns.

A more germane example of how multiple approaches to the same design requirements can be leveraged to field multi-Service capabilities may be the Lightweight Fighter/Air Combat Fighter program of the 1970s. This program yielded two distinctly different flying prototypes for testing: the YF-16 and YF-17. The Air Force eventually chose the F-16 for production, but the Navy remained reticent to accept a single-engine fighter for carrier operations. However, the Navy saw potential in the YF-17 to provide similar air combat capability as a sea-based

platform and eventually developed it into the highly successful F/A-18 series of strike fighters.<sup>26</sup> Air Force and Navy collaboration on PCA could end up working out similarly as each Service applies the differing contexts of land- and sea-based aviation to the requirement to field a purpose-built next-generation air superiority capability able to counter A2/AD.

## The Future of Long-Range Strike

The Air Force side of such a joint force structure needs to consider what tailored carrier air wings mean for the size and shape of the B-21 program. Based on the division of labor and purpose-built force structure envisioned in this article, the bomber’s historical advantages in payload become even more critical, which shapes the discussion of how big the B-21 buy needs to be. The table comes from a recent Mitchell Institute study written by Lieutenant General Michael Moeller, USAF (Ret.). It illustrates how bombers provided a high percentage of the munitions expended in every post-World War II conflict but represented only a fraction of the combat aircraft in theater.<sup>27</sup>

If the joint force fielded tailor-made carrier air wings capable of providing effective escort for land-based long-range strike in the 2030 timeframe, the ability to field penetrating bombers in sufficient mass to capitalize on the modernized force structure described in this article would be essential and should be the subject of in-depth analysis.

On the topic of shaping the B-21 program, Deptula offers three important attributes, in addition to payload, that the B-21 will provide to the joint fight. First, he highlights the value of long-range

bombers able to “swing” combat power between widely separated theaters of operation” while being based “outside the range of most enemy strike systems.”<sup>28</sup> This flexibility would be critical in taking advantage of the temporary air superiority created by both land- and sea-based PCA aircraft in areas potentially separated by long distances. Second, Deptula stresses the importance of high survivability.<sup>29</sup> As part of the stand-in force packages described by AS 2030, the stealthy B-21 will be survivable against high-end threats.<sup>30</sup> Third, he discusses the need for the versatility to adapt. This attribute is best understood through his assertion that the next bomber should be known as a “long-range sensor shooter” that can rapidly integrate new capabilities.<sup>31</sup> As part of the purpose-built joint team envisioned here, this attribute would be critical to ensuring long-term interoperability with the rest of the networked force. Deptula’s depiction of the new bomber’s attributes is important because it builds on yesterday and today’s combat successes in a manner that accounts for evolving threats, while modernizing the features that made the bomber force such a critical part of American power projection since the start of World War II.

## Evolving JAM-GC and AS 2030

JAM-GC, along with Service-specific plans, provide a solid conceptual foundation for building an optimized joint airpower force structure capable of winning in 2030. This does not mean, however, that these concepts should not continue to evolve. For example, JAM-GC’s emphasis on preserving America’s ability to conduct offensive operations across the globe should not preclude supplemental defensive approaches when appropriate. In the post-Cold War world, most U.S. foreign policy interests revolve around maintaining existing security architectures and defending regional allies from aggression. In an era when A2/AD capabilities are increasingly effective at contesting power projection, the United States should exploit the convergence of its largely defensive foreign policy goals with the relative rise of defensive capabilities.<sup>32</sup> The potential

value of this type of A2/AD approach implemented by the United States and its partners is clearly illustrated by the sharp reaction of competitor states to even modest deployments of advanced U.S. defensive technologies to key allies around the world.<sup>33</sup>

This approach does not diminish the absolutely critical task of modernizing American power projection. However, defensive approaches should be seen as playing an important supporting role to this enduring “source of strength” in the pursuit of 21<sup>st</sup>-century U.S. interests.<sup>34</sup>

Similarly, Service plans must continue to evolve as well. One area that deserves ongoing attention across both land- and sea-based aviation is the potential for teaming “good enough” unmanned aircraft with higher end manned platforms. Given the high cost of combat aircraft, the joint force must explore ways of increasing capacity at an affordable price point in order to combine the highly capable sensors and networks of high-end platforms with the capacity of lower cost unmanned aerial systems.<sup>35</sup> AS 2030’s discussion of potentially “bending the cost curve” for massed low-cost systems through advanced manufacturing techniques shows promise in this regard and could enable airpower, as a platform-reliant force, to take the operational risks required to defeat A2/AD at an acceptable cost.<sup>36</sup> In short, effective manned-unmanned teaming may be required to ensure airpower remains a cost-imposing means of waging war.

## Conclusion

A2/AD is changing the way America projects power through the air. Blending the payload and range of Air Force penetrating long-range strike platforms with the counter-air and SEAD capabilities of a next-generation, purpose-built carrier air wing would help preserve America’s power projection advantage into the 2030s. Building this force structure requires a joint approach to acquisitions from the beginning that goes beyond basic interoperability to embrace a genuinely joint division of labor built on the relative strengths of land- and sea-based combat aviation.

Just over 30 years ago, DOD reorganized under the Goldwater-Nichols Act to close organizational seams between commanders and joint warfighters in order to win on the battlefield. Winning on tomorrow’s battlefield will require a similar level of jointness to close seams in the acquisition process between tomorrow’s warfighting platforms.

JAM-GC’s predecessor concept, ASB, envisioned this type of approach to acquisitions in a 2013 implementation plan. It advocated for the development of a “pre-integrated joint force” where “solutions and innovations are collaboratively developed and vetted to ensure they are complementary where appropriate, redundant when mandated by capacity requirements, fully interoperable, and fielded with integrated acquisition strategies.”<sup>37</sup> Whether this level of collaboration is achieved within existing mechanisms such as the Defense Planning Guidance, accomplished through targeted acquisitions reform, or pursued as part of a major reorganization on the scale of Goldwater-Nichols, building an effective joint airpower team for 2030 will require a new approach that effectively translates today’s visionary concepts into tomorrow’s joint force structure. JFQ

## Notes

<sup>1</sup> Michael E. Hutchens et al., “Global Commons: A New Joint Operational Concept,” *Joint Force Quarterly* 84 (1<sup>st</sup> Quarter 2017), 135.

<sup>2</sup> Ibid., 135–136.

<sup>3</sup> Terry S. Morris et al., “Securing Operational Access: Evolving the Air-Sea Battle Concept,” *The National Interest* (March–April 2015).

<sup>4</sup> Hutchens et al., 136.

<sup>5</sup> *Air Superiority 2030 Flight Plan: Enterprise Capability Collaboration Team* (Washington, DC: Headquarters Department of the Air Force, May 2016), available at <[www.af.mil/Portals/1/documents/airpower/Air%20Superiority%202030%20Flight%20Plan.pdf](http://www.af.mil/Portals/1/documents/airpower/Air%20Superiority%202030%20Flight%20Plan.pdf)>.

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<sup>7</sup> Ibid.

<sup>8</sup> *Defense Science Board Task Force Report on Air Dominance* (Washington, DC: Department of Defense, December 2016),

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<sup>9</sup> Alex Gryniewich, “The Future of Air Superiority, Part III: Defeating A2/AD,” *War on the Rocks*, January 13, 2017, available at <<https://warontherocks.com/2017/01/the-future-of-air-superiority-part-iii-defeating-a2ad/>>.

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<sup>11</sup> Ibid.

<sup>12</sup> David A. Deptula, *Evolving Technologies and Warfare in the 21<sup>st</sup> Century: Introducing the “Combat Cloud”* (Arlington, VA: Mitchell Institute for Aerospace Studies, September 2016), available at <[http://media.wix.com/ugd/a2dd91\\_73faf7274e9c4e4ca605004d-c6628a88.pdf](http://media.wix.com/ugd/a2dd91_73faf7274e9c4e4ca605004d-c6628a88.pdf)>.

<sup>13</sup> Gryniewich, “Air Superiority, Part III.”

<sup>14</sup> David L. Goldfein, “War in the Information Age,” *DefenseOne*, November 16, 2016, available at <[www.defenseone.com/ideas/2016/11/war-information-age/133193/](http://www.defenseone.com/ideas/2016/11/war-information-age/133193/)>.

<sup>15</sup> Jonathan W. Greenert, “Payloads Over Platforms: Charting a New Course,” *Proceedings* 138, no. 7 (July 2012), 16–23.

<sup>16</sup> Hutchens et al., 137.

<sup>17</sup> Ibid., 139.

<sup>18</sup> Mike Pietrucha, “The Need for SEAD, Part I: The Nature of SEAD,” *War on the Rocks*, May 17, 2016, available at <<https://warontherocks.com/2016/05/the-need-for-sead-part-i-the-nature-of-sead/>>.

<sup>19</sup> Timothy A. Walton, “The Evolution of the Modern Carrier Air Wing,” Center for International Maritime Security, September 17, 2015, available at <<http://cimsec.org/the-evolution-of-the-modern-carrier-air-wing/18860>>.

<sup>20</sup> Ibid.

<sup>21</sup> Alex Gryniewich, “The Future of Air Superiority, Part II: The 2030 Problem,” *War on the Rocks*, January 5, 2017, available at <<https://warontherocks.com/2017/01/the-future-of-air-superiority-part-ii-the-2030-problem/>>.

<sup>22</sup> Gryniewich, “Air Superiority, Part III.”

<sup>23</sup> Seth Cropsey, Bryan G. McGrath, and Timothy A. Walton, *Sharpening the Spear: The Carrier, the Joint Force, and High-End Conflict* (Washington, DC: Hudson Institute, October 2015), 42, available at <<https://s3.amazonaws.com/media.hudson.org/files/publications/201510SharpeningtheSpearTheCarriertheJointForceandHighEndConflict.pdf>>.

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<sup>25</sup> Cropsey, McGrath, and Walton, 52.

<sup>26</sup> Erik Simonsen, “Legacy of the Lightweight Fighter Competition,” *Air Force Magazine* (February 2017), available at <[www](http://www).

[airforcemag.com/MagazineArchive/Documents/2017/February%202017/0217lightweigh.pdf](http://airforcemag.com/MagazineArchive/Documents/2017/February%202017/0217lightweigh.pdf)>.

<sup>27</sup> Michael R. Moeller, *U.S. Bomber Force: Sized to Sustain an Asymmetric Advantage for America* (Arlington, VA: Mitchell Institute for Aerospace Studies, 2015), 13, available at <[http://docs.wixstatic.com/ugd/a2d-d91\\_252420b7d1d04ae59b818e72c416af16.pdf](http://docs.wixstatic.com/ugd/a2d-d91_252420b7d1d04ae59b818e72c416af16.pdf)>.

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<sup>29</sup> Ibid., 29.

<sup>30</sup> Josh Wiitala, “The Price of Admission: Understanding the Value of Stealth,” *War on the Rocks*, June 2, 2016, available at <<https://warontherocks.com/2016/06/the-price-of-admission-understanding-the-value-of-stealth/>>.

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<sup>32</sup> Josh Wiitala, “Seizing the Defensive: A Balanced Approach for the Third Offset,” *The Strategy Bridge*, June 14, 2016, available at <<https://thestrategybridge.org/the-bridge/2016/6/14/seizing-the-defensive-a-balanced-approach-for-the-third-offset>>.

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<sup>34</sup> The term *source of strength* in this context is attributed to General Dunford in Hutchens et al., 139.

<sup>35</sup> Steve Callicutt and Josh Wiitala, “What the Future of GPS, Bombers, Fighters Should Be,” *Breaking Defense*, August 22, 2016, available at <<http://breakingdefense.com/2016/08/what-the-future-of-gps-bombers-fighters-should-be/>>.

<sup>36</sup> *Air Superiority 2030 Flight Plan*.

<sup>37</sup> *Air-Sea Battle: Service Collaboration to Address Anti-Access and Area Denial Challenges* (Washington, DC: Air-Sea Battle Office, May 2013), 9, available at <<http://archive.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf>>.

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*Cross-Functional Teams in Defense Reform: Help or Hindrance?*

By Christopher J. Lamb



There is strong bipartisan support for Section 941 of the Senate’s version of the National Defense

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CFTs are a popular organizational construct with a reputation for delivering better and faster solutions for complex and rapidly evolving problems. The Department of Defense reaction to the bill has been strongly negative. Senior officials argue that Section 941 would “undermine the authority of the Secretary, add bureaucracy, and confuse lines of responsibility.” The Senate’s and Pentagon’s diametrically opposed positions on the value of CFTs can be partially reconciled with a better understanding of what CFTs are, how cross-functional groups have performed to date in the Pentagon, and their prerequisites for success. This paper argues there is strong evidence that CFTs could provide impressive benefits if the teams were conceived and employed correctly.



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North Carolina Army National Guardsman with Detachment 4, Recruiting and Retention Battalion, Joint Force Headquarters, exits simulated shoot house, pulling litter with simulated casualty, as competitor in 2013 Army National Guard Best Warrior Competition, Little Rock Arkansas, July 23, 2013 (U.S. Army/Betty Boyce)



# Continuing the Big Data Ethics Debate

## Enabling Senior Leader Decisionmaking

By Paul B. Lester, Pedro S. Wolf, Christopher J. Nannini, Daniel C. Jensen, and Delores Johnson Davis

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In *Joint Force Quarterly* 77, Karl Schneider, David Lyle, and Francis Murphy presented a foundational debate on the ethical use of big data within a military context. The authors offered several cases where the military would benefit from improving its analytical capabilities to leverage the potential that big data offers. Most germane to the current article, they argued that “the collection and use of big data

cannot compromise the organization’s core value of trust: that the military will both provide for the national defense and also look out for the best interest of its Servicemembers.”<sup>1</sup>

It would appear that their concern was quite prophetic, as recent data breaches in the private sector, government, and military continue to shed light on the endemic challenges that persist in the ethical use and protection of large

volumes of sensitive personal data.<sup>2</sup> Though some have claimed that the era of privacy is waning,<sup>3</sup> both Federal law<sup>4</sup> and Department of Defense (DOD) policy<sup>5</sup> clearly state otherwise. Thus, we concur with Schneider, Lyle, and Murphy that it is incumbent on DOD leadership to safeguard personal data—the digital representation of a Servicemember’s military history—within its system and use the data ethically both for research and policymaking. Yet a key question remains: How do we balance protecting the best interests of Servicemembers and maintaining their trust while also using available data and advanced analytics for the good of the Defense Department? This is a question that each Service must answer.

In the 2 years since *JFQ* published the big data ethics article, a multidisciplinary group of leaders within the Department of the Army has worked toward answering this question. The Federal Government and DOD have exercised tremendous leadership to balance privacy management with big data technology and training. DOD agencies now have an opportunity to consolidate data centers and systems to reduce the number of disparate silos and fuse data results for analytics-based projects and decisionmaking. Likewise, information technology systems with strong governance processes have emerged that place ethical, legal, and moral considerations at the forefront of approving personnel and medical data analytic projects. When coupled with recent big data policy decisions made within the Army Secretariat, current advances in this domain suggest that our military is at a critical policy juncture, presenting us with an opportunity to extend the debate on the ethical, legal, and moral use of Servicemember big data, as well as ensuring that DOD keeps pace with private-sector big data analytics innovations.

In this article, we begin by exploring the Human Capital Big Data (HCBD) initiative, an approved strategic policy framework intended to integrate and coordinate the ethical use of the Army’s massive data stores by the research and analysis community. Next, we introduce

the Person-Event Data Environment (PDE), the operational information technology platform designed from the ground up with the ethical use and security of Army personnel big data in mind. Later, we highlight some of the critical machine learning and predictive analysis research already under way within the PDE that supports the Army’s personnel, medical, and intelligence communities. We close by outlining key operational and strategic opportunities and challenges of applying this emerging technology to the dynamic and complex human behavior we will face.

### The HCBD Initiative

Like other Services, the Army has existing data stewardship strategy and policy that broadly sets data goals and governs the management, storage, and security of its data; this strategy is known as the Army Data Strategy (ADS), while the accompanying policy is known as the Army Data Management Program (ADMP). Though the ADS and ADMP present a comprehensive approach for strategic management of the Army’s data and its information architecture, both documents take a neutral position toward unique characteristics of data and associated ethical, legal, and moral considerations. Thus, the Assistant Secretary of the Army (Manpower and Reserve Affairs) established a multidisciplinary working group in 2014 to begin addressing operational, security, and ethical considerations related to the use of big data in the human capital domain. A “big tent” approach was taken as members from major commands, information technology, military and civilian personnel, medical, training, legal, law enforcement, marketing, and research communities were invited to participate.

What first emerged from this working group was a white paper that accomplished three objectives. First, the paper described how new data policy related to the Human Capital Enterprise (HCE) would need to be nested within the Army’s existing data stewardship policies, but that new HCE data policy terminology (taxonomy) should be

harmonized with existing policies where possible. In short, the working group members concurred that emerging HCE big data policy would be a new branch growing on the larger Army Data Management tree. Second, the paper delineated how human capital data fit in a separate legal and ethical category from other data collected and stored by the Army, and further outlined how the proposed use of human capital data should trigger deliberate ethical, legal, and moral considerations. Quite simply, both the Privacy Act of 1974 and Health Insurance Portability and Accountability Act of 1996 set a high bar for organizational use of personal information, which in turn should be used as a guide during strategic planning for the legally acceptable use of human capital data. Third, the paper identified five fundamental principles DOD must consider in any future HCE big data endeavor, described in greater detail in the table.

The three objectives met via the white paper set the conditions for strategic planning intended to set key objectives for the use of big data in the human capital domain. Published in 2016, the Human Capital Big Data (HCBD) Strategy echoed many of the strategic goals found in the ADS and ADMP, particularly that data should meet VAUTI standards:

- *visible* by posting them to shared spaces and registering metadata related to structure and definition
- *accessible* to authorized users through those shared spaces and data services; will be controlled in accordance with the asset’s security-related metadata
- *understandable* by creating data models, integrating data, and identifying requirements for information traceability
- *trusted* by identifying authoritative sources and making data storage and access structure
- *interoperable* by complying with information exchange specifications and establishing master data management and unique identifiers, which will allow the same data to be used across multiple systems and applications.

**Table. Five Fundamental Principles of Army Big Data Policy**

Transparency	Individuals are entitled to understandable information about how the Army collects data on them, who has access to that data, and how that data will be used and secured. A responsible enterprise approach must balance the tradeoffs made among privacy, security, and convenience.
Privacy	An individual's right to privacy is fundamental. A breach of privacy can become a breach of trust between the organization holding an individual's data and that individual, regardless if harm occurs. Collection of large amounts of data specific to an individual—even without the inclusion of personally identifiable information—cannot be assumed to maintain an individual's anonymity.
"Do no harm"	All necessary steps will be taken by the Army to ensure that application and use of data maximizes benefits and minimizes harm to Army personnel, individually and collectively.
Validity and verification	Consequential or preemptive prediction applications of data will be held to accepted scientific standards of validity and verification with appropriate peer review before implementation within the Army.
Security	Datasets must be protected from both internal and external threats. This maintains the fidelity of the data and keeps faith with our people. Users access to Big Data, particularly as datasets are combined and stored together, needs to be specifically addressed.

The HCBD Strategy also tackles several of the operational challenges discussed by Schneider, Lyle, and Murphy by outlining six guiding principles that should be practiced within the HCE. First, the HCBD data management culture must exist in a manner that reinforces trust within the Army culture. While the Service has a duty to share data when legally permissible, this legal requirement should be balanced with the notion that Army personnel must also have confidence in the accuracy, secure storage, and ethical and legal use of the data. Second, the quality of any HCBD endeavor largely depends on systems engineering, human-system integration, and user training. In most cases, high-quality data stem from having information technology platforms that are engineered with traceable data quality metrics and objectives and are relatively easy to use by trained personnel. Third, a common lexicon and taxonomy are necessary to create an operating vocabulary for shared situational understanding and transparency across the diverse silos of data. For example, a common term used in the Army's data environment is *data owner*, which suggests that an individual or organization managing data may make final decisions about when and how the data may be shared. Yet in most cases, individuals or organizations are actually *data stewards* charged with the collection, management, and operational use of the data, leaving decisions on data-sharing to be made by a higher authority. Thus, developing a common lexicon helps to standardize and codify the data-sharing and governance process.

Fourth, the Army must protect all forms of HCE data—both personally identifiable information (PII) and protected health information (PHI)—at rest and in transit; doing so ensures that the Army meets legal and regulatory requirements while also maintaining the bond of trust with its personnel. Fifth, individuals with data release authority, and those who conduct analysis or inference based on Army data, must receive appropriate training and certification. Here, the HCBD strategy recognizes the expertise required in the emerging field of data science and calls for the implementation of certification standards for those who manage, analyze, and use HCE data. Sixth, the Army must establish a standardized process for the use of disparate data within the HCBD framework. This principle recognizes there are some data assets that, while unclassified, are highly sensitive and thus great care must be taken with their use and sharing (for example, Provost Marshal General data, security clearance data, and others).

### From Strategy to Operationalization

After publishing the HCBD Strategy, the working group moved toward preparing the HCBD implementation plan, which was approved in August 2017. The plan addresses governance, ethical oversight, phasing and tasks for implementation, data management, and associated technical processes needed to support the HCBD enterprise. Perhaps most important, the implementation plan establishes the HCBD Steering

Committee as subordinate to the Army Data Board, and consists of senior leaders from the Assistant Secretary of the Army for Manpower and Reserve Affairs, Deputy Chief of Staff G1 (Personnel), and Deputy Chief of Staff G8 (Resources). The committee is tasked with directing the HCBD data governance process across the Army. For example, the plan imbues the committee with the power to review disputed requests for data access and make adjudicative decisions on sharing data. Additionally, the committee shall establish data-sharing criteria; routinely review the ethical, moral, and legal sufficiency of conducting certain high visibility analysis projects; review and manage the HCBD data use agreements; and review enterprise audits.

Beyond governance, the HCBD implementation plan also establishes three categories of analyses supported by HCBD—descriptive statistics, policy analysis, and research. The implementation plan recognizes that several research and analysis organizations already have extensive data access and management policies, such as the Office of Economic Manpower Analysis at West Point, Army Medical Command, Army Research Institute, and others; those organizations may continue to operate as they have, while still leveraging the governance capabilities offered by HCBD. However, many organizations across the Army do not have a long history with data analytics and are not resourced to establish their own information technology and staff infrastructure to support big data



Soldier with U.S. Army Reserve 312<sup>th</sup> Engineer Company fires M4 rifle paintball gun while opposing force member hides during urban operations training and building clearing procedures, April 18, 2015, at Camp Ripley, Minnesota (U.S. Army/Timothy L. Hale)

analytics. The implementation plan therefore calls for those organizations to turn to the Person-Event Data Environment, HCBD's enterprise architecture for big data analytics and data management.

### The PDE

The Person-Event Data Environment, operated by the Army Analytics Group and its Research Facilitation Laboratory, serves as a key enabler for the HCBD's success. Initially established in 2008 as a business intelligence platform with a limited scope focused on civilian personnel forecasting, the PDE added capabilities over time based on emerging project requirements. Below, we describe three watershed events occurring over the last decade that brought the PDE to the forefront of the Army's big data solution set.

First, in 2008, Army senior leadership set a course toward addressing the suicide

problem after the Service's suicide rate exceeded the national average for the first time. Because suicide is such a low base-rate event (approximately 30 suicides per 100,000 Soldiers), a significant amount of data from a wide variety of sources was needed to properly study the phenomenon, with even more data needed to build predictive models. What emerged was the Study to Assess Risk and Resilience in Servicemembers (STARRS), an epidemiological and neurobiological study of suicide involving world-renowned scientists.<sup>6</sup> Also in 2009, Army senior leadership directed the creation of a resilience development program known as Comprehensive Soldier Fitness that was designed to address the endemic stressors of Army life.<sup>7</sup> Because resilience is characterized by equifinality (that is, there are many pathways to becoming resilient and resilience is evident in many aspects of a Soldier's life), measuring the

program's effectiveness required massive amounts of personnel, deployment, training, family, and medical data, and the data needed to be gathered at multiple points across a long period of time. Lastly, subsequent to an extensive legal review in 2012, Army senior leadership signed an agreement with the University of Pennsylvania to allow a consortium of researchers from across the United States to use the PDE and its data to answer important research questions related to the mental and physical health of Soldiers; though the research is done by consortium researchers, the projects are governed by Army personnel.

In all three cases, each project led to major advancements in the PDE system or changes in philosophical approaches to how the Army used its human capital data. For example, while the STARRS project led to the accumulation of a vast array of data from across DOD to study suicide,

this also opened a pathway for repurposing the data for use by other research teams focused on different topics. Here, processes were developed for establishing Data Use Agreements (DUAs), and electronic workflows were developed to speed the review and approval processes that trigger access to the data. The emergence of the Comprehensive Soldier Fitness project focused attention on the need for a comprehensive and integrated human subjects research governance structure within the PDE. Here, every project conducted in the PDE is reviewed by a Human Protection Administrator for compliance with Federal and DOD guidelines related to the ethical and legal protection of human subjects, and, if required, projects undergo additional reviews by external scientists and are later reviewed by Institutional Review Boards. Lastly, the project with the University of Pennsylvania showcased the value of the Army's data for not only answering important Army research questions but also examining important problems affecting the public, such as cardiovascular disease. Here, the Army approves specific research questions posed by the consortium of university scientists. The Army in turn benefits from the knowledge created, but does so at a significant financial discount because the university funds most of the research from an external grant.<sup>8</sup> Arrangements like the one described here not only highlight the value of Army data but also underscore a path toward decreasing the cost of research if handled carefully.

## Why Use the PDE?

While the PDE's success in the last decade can be in part attributed to the amassing of data, there is more to the story than the clichéd, "If you build it they will come." In fact, a common question we receive is, "What is PDE's special sauce?" The answer is not an advanced machine-learning algorithm, high-performance computing, or hard-to-get data; while the system has each of those, they are not what set PDE apart. Rather, what makes PDE special is the philosophical approach taken toward data management, which can be summarized in five tenets.

First, privacy concerns coupled with the ethical and legal use of data within the PDE is paramount. Beyond the human research protections governance process previously described, data within the PDE are also carefully managed by coupling security requirements and procedures outlined in the Army chief information officer/G6 ADMP with data de-identification best practices from industry. Typically, all individual identifiers within datasets provided by stewards are either completely removed as the system ingests the data or, in some cases, are encoded with special keys that are kept on separate systems with separate encryption and firewalls. Some "low density" data, such as military or civilian rank, unit identification codes, medical conditions, and others are merged into groups. For example, colonels and general officers are typically grouped into a single "senior leader" group, and exceptions to this policy are granted rarely in order to prevent re-identification based on demographic characteristics. So a study intending to analyze data on female African American general officers who are aviators, flew for the 101<sup>st</sup> Airborne Division, and later developed a heart condition likely could not be supported by PDE due to data policy restrictions. Data within the PDE are held in separate enclaves—the "Staging Enclave," where data are merged to support the need for each project, and the "Analysis Enclave," where data are first provided to a research team after being encoded for a second time—and researchers are never given access to the Staging Enclave. When data are requested for projects, system administrators monitor automated data transport programs that assemble, de-identify, and position data for the research team. In addition, for sensitive datasets (for example, law enforcement and security clearance information), two-person controlled access is required, and, even then, administrator access is partitioned based on domain (that is, some administrators may access only medical data while others may access only personnel data). Lastly, the PDE is fully auditable, with each action within the system being logged and monitored.

Second, the PDE brings the researcher to the data rather than sending data to the researcher. One does not have to search hard for examples where PII or PHI on DOD personnel was exposed due to losing a laptop or handheld device. Quite simply, the PDE is a private cloud computing environment, and data that support approved projects within the PDE are not allowed to leave the cloud. Thus, researchers may access the PDE cloud from anywhere in the world at any time—even from an aircraft—provided they have a network connection, an approved PDE account, and a computer with a Common Access Card reader and required software. However, they cannot download data to their local machine. When researchers complete their analysis and want to export their findings out of the PDE, privacy specialists review the export request within 24 hours to ensure that item-level data are not part of the export package. This philosophy balances the on-demand and accessibility needs of the consumer with control and protection over DOD data.

Third, while still operating within its governance structure, the PDE will remove barriers to data access and lift administrative and technical burdens from the research and analysis community whenever possible. For example, assume that the Army's Medical Research and Material Command funds 10 projects at 10 universities, with each project requiring data from 10 different DOD systems. Theoretically, this would require the preparation, staffing, and approval of 100 different DUAs between the Army and 10 different universities, each with its own bureaucracies, potentially resulting in thousands of hours spent getting the DUAs approved while losing even more hours *not* doing research. Additionally, all 10 universities would theoretically have to accredit their own systems to meet DOD Information Assurance requirements to store military data, in turn creating additional burdens on the Army staff. Our own internal analyses suggest that researchers working DOD-sponsored data-intensive projects within the human capital domain spend approximately 60 percent of their time and financial



Servicemembers aboard USS *Dwight D. Eisenhower* paint starboard anchor gold, commemorating ship earning Retention Excellence Award for 2016, Norfolk, Virginia, March 28, 2017 (U.S. Navy/Anderon W. Branch)

resources accomplishing these administrative tasks, leaving only 40 percent of the remaining resources to be applied toward doing the actual research; the numbers look even worse when university overhead is factored into the equation. Does it not make sense to do this in an enterprise fashion? Should researchers not spend more time doing what they are trained to do—scientific research—rather than focusing most of their efforts on meeting administrative burdens? The PDE takes an enterprise approach to the data acquisition process such that the PDE data acquisition team writes and staffs “omnibus” DUAs for the PDE system, rather than for individual projects, thus making them scalable. Likewise, researchers using the PDE do not have to be concerned with system accreditation problems because they are simply accessing a secure cloud; the Information Assurance requirements for the PDE are handled by the system administrators.

Fourth, the PDE is a “digital data commons” that should be used by the widest possible audience, necessitating breadth and depth of data and analytics capabilities. Thus, while the data acquisition team typically acquires new data assets when a new “demand signal” emerges (that is, a new project), the team also acquires data in anticipation of future needs. Likewise, the PDE offers a wide variety of statistical platforms, such as R, SAS, SPSS, STAT-A, Mplus, and others, thus precluding individual researchers from having to purchase the software themselves, which further brings down the cost of DOD research. Because the PDE is a scalable architecture that allows for layering in additional technical capabilities, the system can adapt to new technology like the recently acquired Hadoop cluster that allows for massive parallel computational processing, or the inclusion of other high performance and artificial intelligence capabilities being

explored now, such as IBM’s Watson, Google’s DeepMind, C3IoT’s Ex Machina, and others.

Fifth, though the data mantra may be “acquire once, share many times,” the PDE staff respects the rights and responsibilities of data providers. For example, data within the PDE are categorized in three ways. Data in the least restrictive “open” category are typically DOD assets that are widely shared across many organizations repeatedly (for example, demographic data) and are available to any PDE user without additional reviews by data providers. Requests for data in the “restricted” category triggers the workflow engine to send notifications to data stewards assigned to organizations providing data to the PDE. Once the stewards receive a notification, they may log into PDE, review the research protocols, communicate with the researcher requesting the data, and finally vote for or against access to the data. The final



Commander of Combined Joint Task Force—Operation *Inherent Resolve* and XVIII Airborne Corps reenlists paratroopers of 2<sup>nd</sup> Battalion, 325<sup>th</sup> Airborne Infantry Regiment, 2<sup>nd</sup> Brigade Combat Team, 82<sup>nd</sup> Airborne Division, near Bartallah, Iraq, February 1, 2017 (U.S. Army/Loni Ayers)

“closed” data category walls off the associated data from all but those researchers who are invited to use it by the provider. Typically, data in the closed category are collected by the researchers themselves in the field and they do not wish to share the data with other researchers until their project is complete. However, in keeping with the digital data commons theme, we highly encourage those controlling closed data to transition them to a less restrictive category once they complete their project.

### Research Under Way Now

In its current configuration, the PDE supports approximately 50 research and operational analysis projects annually, and all the projects fall within the human capital domain. As the HCBD program of record emerges, the concept plan calls for investments to scale up both PDE’s technical capability and staff to meet the increasing demands of the Army’s broader research and analysis community. Although the research domains supported by PDE varies widely, we highlight two projects that are likely of great interest to *JFQ* readers.

### The Complex Behavior Models Project

It is clear from the Comprehensive Soldier and Family Fitness training

program and the broader Ready and Resilient capabilities that the Army has placed significant emphasis and resources behind a preventive approach toward improving Soldier psychological health and resilience. While developing resilience may be the Army’s proximal goal, a distal goal is to improve overall personal readiness of those serving in uniform. And there is little question that improved personal and unit readiness are needed given the recruiting and retention landscape noted by senior Army leaders: Only 400,000 young people become eligible for military service each year, and of those, over 250,000 are needed to meet national recruiting requirements across all Services; within the Army, approximately 20 percent of Soldiers contracted never make it to their first duty station; approximately 40 percent do not complete their first term of enlistment; only approximately 40 percent of West Point and 4-year scholarship ROTC graduates serve past 10 years.<sup>9</sup> When taken together, the annual personnel churn within the U.S. military costs billions of dollars while also degrading military readiness.

While we readily admit that there is no substitute for good leadership and innovative recruitment and retention strategies, the use of predictive analytics should support these strategies. Focusing

more narrowly on preventing involuntary attrition and medical readiness of those Soldiers in uniform, the Army Resiliency Directorate launched an initiative 3 years ago known as the Complex Behavior Models (CBM) project that couples advanced machine-learning methodologies with the power of the PDE’s data stores. Because Soldiers attrite for many different reasons—personal choice, legal problems, medical ailments, and others—the goal of CBM is identifying health and resilience characteristics of Soldiers that in turn influence personal readiness. To accomplish this, a team of scientists integrated over 40 PDE datasets—and intend to double that number in the coming years—to develop a suite of models that can predict emerging problems, which could result in involuntary attrition or medical non-deployability with a reasonable level of accuracy.

The data requirements for CBM are massive and likely could not easily be managed outside of a system like the PDE. For context, a single integrated CBM dataset focused only on the Active-duty component consists of 387 columns and over 25 million rows of data, resulting in over 9.8 billion cells of data. While this is a lot of data, it is admittedly relatively small when compared to data processed by organizations such as Google, Facebook, Amazon, and others. Yet CBM’s goals are to compute outcomes much more complicated than online purchasing decisions or whether someone will “like” another’s posting. Here, CBM is using data to understand highly complex behavioral outcomes, and the computational power required to run these analyses both continuously and on demand is significant.

### Insider Threat

The insider threat (InT) of malicious behavior by insiders, whether it is on a network or violence within the workplace, continues to be a challenge within DOD. Executive Order 13587, *Structural Reforms to Improve the Security of Classified Networks and the Responsible Sharing and Safeguarding of Classified Information*; the National Insider Threat Policy; DOD Instruction

5205.16, *DOD Insider Threat Program*; and the Army Insider Threat Directive provide guidance on the establishment and conduct of InT programs. We know from the work of the Defense Personnel and Security Research Center and others that the InT problem is complex—there are many reasons why someone decides to commit an InT act, and there are usually many smaller antecedent indicators that typically go unnoticed. Despite the wave of media coverage when they occur, InT acts are exceedingly rare events. Statistically, this rarity makes predicting an InT act extremely challenging.

Taking a cue from private sector companies such as JP Morgan Chase, Goldman Sachs, LexisNexis, and others, scientists working within the PDE are applying its data to machine learning and other statistical methodologies to better understand the InT problem. Statistically, it is much easier to accurately predict a large population of people who probably will *not* commit an InT act than it is to accurately predict specific individuals who probably *will* commit one. Thus, the goals of the Army's InT research and analysis program is to use de-identified data to accurately pool a small population of individuals who, based on their behavioral risk factors, are at higher risk for committing an InT act than those in the large population of those who clearly are not at risk. Though the work is still in the nascent stage, three InT statistical models emerging from the project perform reasonably well, though much work is yet to come.

## Challenges Over the Horizon

Though HCBD and its enablers such as PDE represent a significant step forward in helping the Army use its data to better “see itself,” there are several challenges that must be addressed in the next few years to ensure that the Army continues to protect its most valuable asset, its people. For example, though emerging technical capabilities within the big data domain suggest that we can create new knowledge, great care must be taken to avoid causing harm. Stated differently, just because we *can* do

something with data, the more important question is, “Should we?” The HCBD Steering Committee is charged with addressing this concern. Returning to the CBM and InT examples, once the machine-learning models are validated, how will Army senior leaders decide to operationalize the models within an ethical, legal, and moral governance framework? One option is to transition these models out of the PDE research environment and later integrate them into carefully governed leader decision support tools to assist in making Army-, unit-, and individual-level decisions that should help stave off some of the Army’s readiness, attrition, and InT challenges. And though the PDE system administrators go to great lengths to protect anonymity, is there a certain point when so much data are merged that the current PDE data management policies are not sufficient to protect that anonymity? A recently launched project within PDE will run for the life of the system and attempt to answer this question, providing regular recommendations to leadership for policy adjustment. Finally, despite the fact that PDE operates with DOD-standard firewalls and encryption, at what point does the merger of a certain number of unclassified datasets raise the risk to the point where the data should be classified? A working group within the HCBD community is tackling this concern now.

Though what we present here is viewed through a decidedly Army lens, the challenges described are not altogether different than those facing other Services; there are many commonalities. While the Defense Human Resources Activity recently created the Office of People Analytics to provide policy guidance to the Services in the coming years, each Service will likely pursue a human capital data analytics solution set that best meets its needs. For the Army, the HCBD initiative and the PDE both represent an effort toward getting actionable information in the hands of leaders quickly while also protecting the Army community members’ privacy.

Regardless of each Service’s chosen path, the paramount requirement before us all is to create systems that balance the data analytic needs of leaders while strengthening the bond of trust with our Servicemembers. JFQ

## Notes

<sup>1</sup> Karl F. Schneider, David S. Lyle, and Francis X. Murphy, “Framing the Big Data Ethics Debate for the Military,” *Joint Force Quarterly* 77 (2<sup>nd</sup> Quarter 2015), 16.

<sup>2</sup> Jody Westby, “The Government Shouldn’t Be Lecturing the Private Sector on Cybersecurity,” *Forbes*, June 15, 2015, available at <[www.forbes.com/sites/jodywestby/2015/06/15/the-government-shouldnt-be-lecturing-the-private-sector-on-cybersecurity/#607d6354621b](http://www.forbes.com/sites/jodywestby/2015/06/15/the-government-shouldnt-be-lecturing-the-private-sector-on-cybersecurity/#607d6354621b)>.

<sup>3</sup> Michael Zimmer, “Mark Zuckerberg’s Theory of Privacy,” *Washington Post*, February 3, 2014, available at <[www.washingtonpost.com/lifestyle/style/mark-zuckerbergs-theory-of-privacy/2014/02/03/2c-1d780a-8cea-11e3-95dd-36ff657a4dae\\_story.html](http://www.washingtonpost.com/lifestyle/style/mark-zuckerbergs-theory-of-privacy/2014/02/03/2c-1d780a-8cea-11e3-95dd-36ff657a4dae_story.html)>.

<sup>4</sup> Family Educational Rights and Privacy Act, U.S. Code 20 § 1232g; 34 CFR Part 99 (1974).

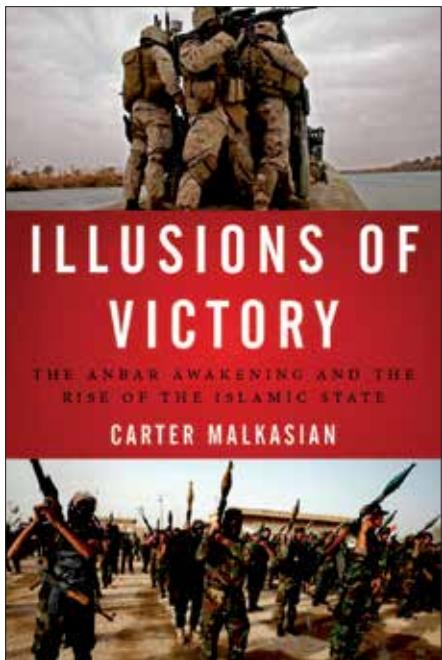
<sup>5</sup> Department of Defense (DOD) Directive 5400.11, *DOD Privacy Program* (Washington, DC: DOD, September 1, 2011), available at <[www.disa.mil/~media/Files/DISA/About/Privacy-Office/540011p.pdf](http://www.disa.mil/~media/Files/DISA/About/Privacy-Office/540011p.pdf)>.

<sup>6</sup> Anne M. Gadermann et al., “Prevalence of DSM-IV Major Depression among U.S. Military Personnel: Meta-Analysis and Simulation,” *Military Medicine* 177, suppl. 8 (2012), 47.

<sup>7</sup> Rhonda Cornum, Thomas D. Vail, and Paul B. Lester, “Resilience: The Result of a Totally Fit Force,” *Joint Force Quarterly* 66 (3<sup>rd</sup> Quarter 2012), 28.

<sup>8</sup> Loryana L. Vie et al., “The Person-Event Data Environment: Leveraging Big Data for Studies of Psychological Strengths in Soldiers,” *Frontiers in Psychology* 4, no. 934 (December 2013); Loryana L. Vie et al., “The U.S. Army Person-Event Data Environment: A Military-Civilian Big Data Enterprise,” *Big Data* 3, no. 2 (2015), 67–79.

<sup>9</sup> C. Todd Lopez, “To Become ‘Force of Future,’ Army Must Fix Personnel Churn,” *Army.mil*, June 26, 2015, available at <[www.army.mil/article/151308](http://www.army.mil/article/151308)>.



## Illusions of Victory: The Anbar Awakening and the Rise of the Islamic State

By Carter Malkasian  
Oxford University Press, 2017  
\$27.95 280 pp.  
ISBN: 978-0190659424

Reviewed by Conrad C. Crane

In *Enforcing the Peace: Learning from the Imperial Past* (Columbia University Press, 2006), Kimberly Zisk Marten recounts the dismal record of Western military interventions that could achieve temporary stability but not foster any lasting political change. Her solution is to lower expectations while extending presence; outsiders cannot shape the course of internal political change but can maintain security for the lengthy period required for equilibrium to be restored after a society is disrupted. The team writing the new counterinsurgency (COIN) doctrine for the Army and Marine Corps in 2006 was quite aware of this dilemma and that success in COIN is always a long and costly process. The team listed long-term commitment as one of its most important principles.

At the same time those ideas were being incorporated in what would become doctrine in Field Manual 3-24, *Counterinsurgency*, the war in Iraq was beginning to turn with a movement that would be called the Anbar Awakening. Sunni tribes in that province rose up to resist al Qaeda in Iraq (AQI) and, along with Soldiers and Marines, eventually expelled those foreign fighters. This result was touted as one of the great successes of the new American approach to counterinsurgency, and a model for future operations. Yet it did not take long after the United States pulled its forces out of Iraq in 2011 for the province again to fall under the influence of violent outsiders, this time from the so-called Islamic State (IS). Carter Malkasian—both a practitioner and chronicler of COIN whose *War Comes to Garmser: Thirty Years of Conflict on the Afghan Frontier* (Oxford University Press, 2013) is a modern classic of the genre—has again applied his astute analysis to another region unsettled by an insurgency. He concludes that the Anbar example should be a cautionary tale for anyone who believes the United States can create any kind of a lasting peace with just a short military intervention or change a regime and expect its replacement to stand on its own in just a few years.

He describes his work as “a short book burdened with details.” It is a quick read, but clear in its trajectory. He begins by describing the origins of the conflict in Anbar from 2003 to 2005, with particular focus on tribal dynamics. He then concentrates in great detail on the battle for Ramadi from 2005 through the Awakening and collapse of AQI, much from personal experience. He concludes by describing the rise of IS and what lessons can be drawn from the disappointing experience. Throughout, his narrative is informed by many insights about the roles of key individuals on both sides in shaping the course of events, shaped by first-hand observations.

The two most common explanations for the Anbar Awakening have been that it was the result either of enlightened American leaders who used innovative new tactics, or that AQI incited the

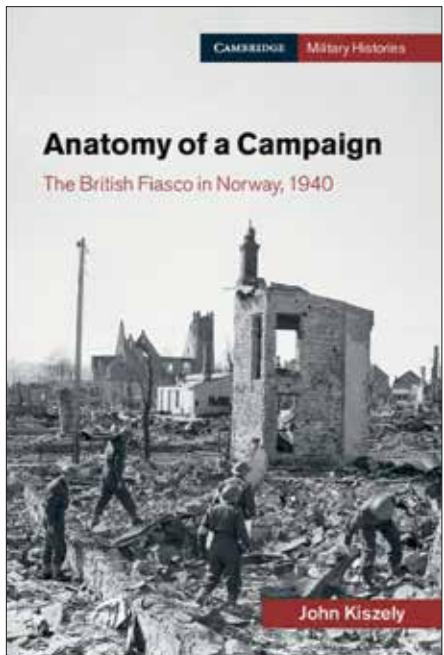
tribal resistance with its own brutality. Malkasian argues that both were necessary for the success of the movement, but there were other important factors as well. One was that as AQI’s power grew, it challenged and marginalized tribal leaders, who then were motivated to regain their positions of influence in a “violent mafia-esque struggle.” Another important condition that is most often overlooked was the “esprit de corps and cohesion within the tribes opposing AQI” during the period of the Awakening. Previous efforts to oppose al Qaeda had failed, but this time losses did not break the resistance, and they persevered through tough trials because of individual determination and social bonds.

Malkasian provides three reasons for the eventual rise of IS and reversal of the success of the Awakening. The first two are directly related to the U.S. withdrawal, which included diplomatic and financial support as well as military forces. Without any outside restraint, the Nouri al-Maliki government quickly moved to marginalize and abuse the Sunni tribes in Anbar. And the tribes fragmented. Without American resources they could not provide goods and services to their people or sustain security forces, while traditional competitive infighting further reduced their strength. IS was not only able to exploit those divisions, but it also took advantage of widespread Sunni popular support for their view of Islam, just as AQI had.

There is much in this short book for military and political leaders to ponder. Despite the apparent success of the Anbar Awakening, in the end the result there must just be added to the long litany of failed Western military interventions that Marten describes. Just as the FM 3-24 team realized, Malkasian argues that policymakers must understand that any American military intervention will have to be lengthy to accomplish any lasting result—and should be planned accordingly. Perhaps a few thousand troops and some money, as some have argued, would have kept Anbar stable and avoided the rise of IS there. He also cautions, however, that “the course of an insurgency, an internal conflict, or a civil war may be determined

by unmalable internal dynamics more than the actions of an outside power such as the United States.” JFQ

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## Anatomy of a Campaign: The British Fiasco in Norway, 1940

By John Kiszely  
Cambridge University Press, 2017  
\$44.99 390 pp.  
ISBN: 978-1107194595

Reviewed by Williamson Murray

John Kiszely had an outstanding career in the British army. As a major, he won the Military Cross while leading his company of Scots Guards in the attack on Tumbledown Mountain in the last days of the Falklands War. During his career, he served in the bureaucracy in Whitehall as the Assistant Chief of the Defence Staff and served stints in British operations in Northern Ireland, Bosnia, and Iraq, finally retiring as a lieutenant general. He has seen war at both ends: the

hard, sharp end of combat and the making and coordinating of policy and operations. He has brought that wide-ranging experience to bear in an extraordinary account of the disastrous British campaign in Norway in the spring of 1940.

What General Kiszely has managed to do is tie the thoroughly faulty strategic decisions by the British military and political leaders that led to equally faulty operational decisions that placed British troops on the ground in impossible situations. Without a sensible effort to connect ends with the means available, what might have been a major victory floundered from the start, and the initial mistakes only exacerbated those that followed.

In a cabinet meeting at the beginning of September 1939, Winston Churchill, finally added to the cabinet as First Lord of the Admiralty, proposed that the Royal Navy mine the Norwegian Leads (coastal waters) to cut off the flow of Swedish ore that moved through the port of Narvik during the winter when the ports were iced over. It was a sensible suggestion because Swedish iron ore was vital to the functioning of the Nazi war economy.

But with considerable opposition from members of the cabinet, worried about the impact of a violation of Norwegian neutrality, Prime Minister Neville Chamberlain refused to make a decision—and this inability sums up British strategic decisionmaking over the next 7 months until the ruthless German invasion of Norway in April 1940. As the future Prime Minister Harold MacMillan noted, “It does throw a piercing light on the present machinery and method of government, the delay, the vacillation, changes of front, standing on one foot one day and on the other the next day before a decision is given. . . . The moral of the history of these three months to be drawn for the future is, to use Burke’s phrase, ‘a proof of the irresistible operation of feeble council.’”

So, the British political and military leaders took council of their fears. Endless meeting followed endless meeting with no decision as to what to do. Chamberlain was incapable as

the supposed wartime leader in pushing his colleagues or, for that matter, himself into action. Chiefs of staff were incapable of providing politicians with coherent or even sensible advice. They were incapable of cooperating, and they did not possess the competence required to provide their masters with nuanced, realistic, or intelligent advice. Churchill was all for action but showed why he would need the irascible Field Marshal Alan Brooke as a minder when he became prime minister to prevent him from making disastrous mistakes. But while all held their endless meetings, the military seemed not to have devoted much time to training unprepared troops for the terrible challenges of combat against the Wehrmacht. Moreover, all the meanwhile in the winter of 1940, the Germans began ruthlessly preparing to launch Operation *Weserübung*, code name for the amphibious assault on the Norwegian ports that would occur in early April 1940.

The denouement came on April 9, 1940, when the Kriegsmarine seized virtually every major Norwegian port. Immediately before the German invasion, the British went ahead and mined the Norwegian Leads, a totally pointless action because the Baltic ice was already breaking up. At least they provided the Germans with an excuse for the actions they were about to undertake. British intelligence provided a rich lode of warnings, all of which the politicians and military leadership totally ignored. After all, it was inconceivable that the Germans would undertake such a risky venture.

While the Germans were seizing the crucial Norwegian ports and airfields, Churchill and Admiral Dudley Pound sent the Royal Navy on a wild goose chase into the North Atlantic in the belief that the Kriegsmarine was attempting to break out there. Had the British reacted immediately, they could have destroyed most of the German invasion force and virtually all the German navy.

What followed was an inexcusable operational muddle as the British attempted to pull together a strategy that would restore their disastrous initial mistakes. Churchill was at his worst with

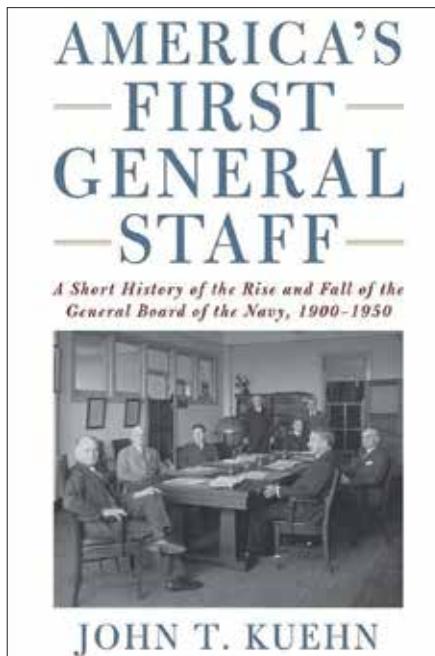
no one able to restrain him. Only his splendid days as prime minister in the days to come would save his reputation from having another Gallipoli hung around his neck. Unprepared for the combat conditions that late winter and early spring brought to Norway, British troops floundered in a muck of melting snow and mud. To make matters worse, British commanders on the ground were contemptuous of the Norwegians, who were putting up significant resistance. At least the Norwegians recognized and had operated in such conditions.

It took the British, with their control of the sea, nearly 2 months before they were able to launch an effective ground attack on Narvik. Among those leading the assault were two battalions of the French Foreign Legion, recently arrived from Africa, who performed in outstanding fashion. As one of their officers commented, "Ah, it's all very difficult. We are used to travelling on camels across the desert, and here you give us boats and we have to cross the water. It is very difficult, but it will be all right. I think so." Acidly, a French officer pointed out "that the British have planned this campaign on the lines of a punitive expedition against the Zulus, but unhappily we and the British are in the position of the Zulus." Events in France forced an Allied withdrawal in early June, ending a truly badly run campaign that lacked strategic sense, military effectiveness, and above all *professional* military leadership.

For those who are really interested in the study of war and the interrelationship between strategy, operations, and tactics, General Kiszely has written an extraordinarily important book. If military leaders fail to take the study of their profession seriously, they will inevitably find themselves incapable of connecting means to ends. Nor will they be able to provide sensible advice to politicians who have no background in military affairs or who, as occurred in Iraq in 2003, are willfully ignorant. Moreover, perhaps most disastrously, generals who have not taken the trouble to study their potential opponents will not understand the other side of the hill and, on the basis of the

most facile assumptions, will send their troops into combat unprepared to deal with a living, adapting opponent. JFQ

Dr. Williamson Murray has held numerous teaching positions at joint professional military education institutions, including the Marine Corps University, U.S. Army War College, and U.S. Naval War College.



### America's First General Staff: A Short History of the Rise and Fall of the General Board of the Navy, 1900–1950

By John T. Kuehn  
U.S. Naval Institute Press, 2017  
\$34.95 320 pp.  
ISBN: 978-1682471913

Reviewed by Randy Papadopoulos

This trim book explains the full course of the U.S. Navy's General Board, its institutional forum for innovation, during the period from 1900 to 1950. To remedy challenges identified during the Spanish-American War, Navy Secretary John D. Long established the board as an experiment. The Secretary realized he needed military advice, so he chose a mix of up-and-coming Navy

officers, the head of the Bureau of Navigation that managed careers, and one Marine officer, all led by the redoubtable Admiral George Dewey, to offer it. From the outset, the General Board strove to coherently align what we today term strategy, campaign plans, force structure, personnel, and ship design.

The author of this institutional history, John Kuehn, is a former naval aviator who earned his doctorate while teaching at the U.S. Army Command and General Staff College. *America's First General Staff* is an offshoot of his dissertation-turned-book, *Agents of Innovation: The General Board and the Design of the Fleet That Defeated the Japanese Navy* (U.S. Naval Institute Press, 2008). The consistency between that book and this more comprehensive one lies in Kuehn's conviction that military problem-solving is best revealed by understanding the decisionmaker's options and constraints.

In the case of naval strategy and fleet designs, the constraints are many. Innovation is not easy, and the Armed Forces must design ships, procure equipment, create doctrine, and plan wars with degrees of uncertainty. Civilian leaders can swiftly change the context, while navies are long-term investments with ships lasting up to 30 years, causing rivalries for ship design authority. In *America's First General Staff*, readers learn what happened when a 1921 Service secretary openly proposed bold international cuts to a principal weapon system (battleships) to save money, and subsequently agreed by treaty not to improve bases. That second point robbed the U.S. fleet of vital infrastructure needed for a protracted Pacific war. Only an organization that could assess threats, recommend investments, and provide top-level sponsorship for change could respond to such complexity, and Kuehn persuasively demonstrates how the Navy's General Board provided that vision and ultimately shaped innovation across the fleet.

According to the author, the General Board grappled sequentially with changing technology, World War I's evolving lessons, post-1922 treaty limits to construction, the Great Depression, World War II, and the early Cold War. Throughout the pre-1941 period, the board sponsored studies,

recorded testimony from witnesses (a reason historians appreciate it), and weighed the choices to be made. Its answers meant some ideas wound up discarded, as in fending off a single aviation service in 1925 before any procurement changes or realignment of careers took place.

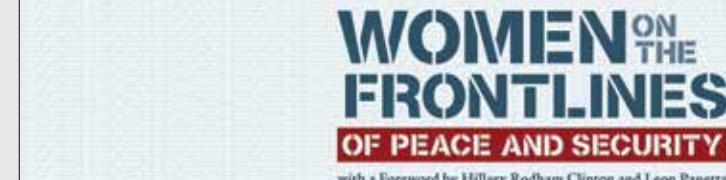
The book uses the records of the General Board, backed by a large helping of related literature. The only book missing is Dirk Bönker's *Militarism in a Global Age: Naval Ambitions in Germany and the United States Before World War I* (Cornell University Press, 2012). Authors need not cite every book related to their work, but since Kuehn centers his argument on the Navy's desire to create a Prussian-style "Great General Staff," Bönker's explicit comparison would have helped make his case.

Was the General Board "America's first general staff"? As a measure of the board's value, on one occasion President Herbert Hoover chaired a daylong meeting with the Secretaries of the Navy and State in attendance. The specific 1929 issue was negotiating cruiser limits with Great Britain. For the General Board to serve as the arms control forum, while writing war plans with the help of Newport, speaks to its central place as the Navy's strategy organ. There was nothing equivalent anywhere else in the U.S. Government of its day.

In sum, *America's First General Staff* explains how the U.S. Navy's leadership grappled with rapid pre-1950 change. Through this work, Professor Kuehn provides a collective intellectual biography of the Navy's leadership for the period. Among those leaders, pride of place must go to Rear Admiral Henry C. Taylor, who set up General Board practices before his death in 1904. Only more than 40 years later, when it faced the changed context of the Cold War, a new Department of Defense, and a bureaucratically stronger Navy staff, did its role lose importance. That it took such a long time and an array of altered circumstances to negate the General Board's influence is a testament to the value it offered. JFQ

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Dr. Randy Papadopoulos serves as the Secretary of the Navy Historian at the Department of the Navy.



## From NDU Press

### Women on the Frontlines of Peace and Security

Foreword by Hillary Rodham Clinton and Leon Panetta

NDU Press, 2015 • 218 pp.

This book reflects President Barack Obama's commitment to advancing women's participation in preventing conflict and keeping peace. It is inspired by the countless women and girls on the frontlines who make a difference every day in their communities and societies by creating opportunities and building peace.

Around the globe, policymakers and activists are working to empower women as agents of peace and to help address the challenges they face as survivors of conflict. When women are involved in peace negotiations, they raise important issues that might be otherwise overlooked. When women are educated and enabled to participate in every aspect of their societies—from growing the economy to strengthening the security sector—communities are more stable and less prone to conflict.

Our understanding of the importance of women in building and keeping peace is informed by a wide range of experts, from diplomats to military officials and from human rights activists to development professionals. The goal of this book is to bring together these diverse voices. As leaders in every region of the world recognize, no country can reach its full potential without the participation of all its citizens. This book seeks to add to the chorus of voices working to ensure that women and girls take their rightful place in building a stronger, safer, more prosperous world.

Available at [ndupress.ndu.edu/Books/  
WomenontheFrontlinesofPeaceandSecurity.aspx](http://ndupress.ndu.edu/Books/WomenontheFrontlinesofPeaceandSecurity.aspx)



Two Navy MH-60S Sea Hawk helicopters from USS George H.W. Bush take off during joint fire exercise with Army AH-64 Apaches from 3<sup>rd</sup> Battalion, 159<sup>th</sup> Attack Reconnaissance Battalion, 42<sup>nd</sup> Combat Aviation Brigade, and Air Force joint terminal attack controllers from 82<sup>nd</sup> Expeditionary Air Operations Squadron, on July 8, 2014, near Camp Buehring, Kuwait (New York Army National Guard/Harley Jelis)



# Preparing for Tomorrow's Fight

## Joint Concepts and Future Readiness

By Andrew J. Loiselle

*We need to learn to set our course by the stars, not by the lights of every passing ship.*

—OMAR BRADLEY

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Military forces that quickly adapt to change usually prevail. It is difficult to adapt in the near term, more so when there is an extended time horizon, but not adapting can exact a heavy toll in blood and treasure. The high cost of not adjust-

ing to new situations underlies the stereotypical conservatism of military organizations, and it is borne in their propensity to lean heavily on the lessons of the last war and eschew radical change. But those who do not try to anticipate change risk surrendering the

initiative on the future battlefield. In the words of the new National Defense Strategy (NDS), the joint force “cannot expect success fighting tomorrow’s conflicts with yesterday’s weapons and equipment.” Neither is “modernization defined solely by hardware; it requires change in the ways we organize and employ forces.”<sup>1</sup>

Modernization also requires that we make informed choices between the demands of the *now* and the demands of the *future*. The Chairman of the Joint Chiefs of Staff recently called for a balanced inventory of capabilities and capacities to meet current challenges, for forces positioned to manage strategic risk, and for joint concepts to address future challenges. He stressed that we “cannot afford to choose between meeting today’s operational requirements and making the investments necessary for tomorrow.”<sup>2</sup>

The U.S. military uses joint concepts to inform its investments in future force readiness and, in the words of the NDS, to “evolve innovative operational concepts.” Put simply, a joint concept proposes a way to employ the joint force to solve a military problem when existing solutions are ineffective or nonexistent. The joint concept is the centerpiece of a proactive approach to achieving future joint force readiness. It postulates a viable hypothesis for testing and ultimately leads to changes in doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P). A joint concept provides a unifying vision for how the joint force will solve an anticipated problem. It guides force development efforts across the entire community by providing a focus on nested Service-centric or domain-based concepts. The concept is not doctrine, nor does it guarantee success. It does, however, exercise the war-winning ability to adapt and ideally improves the joint force’s future readiness by getting it mostly right, thereby reducing the amount of adaptation that will inevitably occur once the truths become apparent. Joint concepts give us a head start on the race to the technological and operational high ground that will dominate the future battlefield.

To be sure, future joint force development is necessarily speculative because no one can predict the future. A comprehensive view of the future requires wide-ranging, open-minded, and keen analytical perspectives on anticipated challenges and solutions. Accordingly, the Joint Staff J7 leads a deliberate, collaborative approach to joint concept development. The approach begins with educated judgments about the future battlefield, then determines how this evolved environment will affect the current joint force’s ability to accomplish projected missions. Joint concept developers identify gaps in the current ability to meet future challenges and then propose solutions in the form of new operating methods and the DOTMLPF-P changes needed to achieve them. In both describing the future operating environment and postulating solutions to forecasted military challenges, the Joint Staff casts a wide net to capture diverse views, compares competing predictions, and ultimately determines the solutions to anticipated challenges. The two following articles discuss how and why the Joint Staff explores possible futures and then develops joint concepts to address anticipated future military challenges.

The *Joint Operating Environment 2035* summarizes the Joint Staff’s understanding of the challenges and opportunities ahead.<sup>3</sup> The Joint Staff derives this understanding through consultation with hundreds of futurists drawn from domestic and foreign governments, academia, industry, and think tanks. The objective is not only to determine a broad understanding of possible futures but also to spark debate and foster critical thinking about their military implications. The first article, “Exploring the Future Operating Environment,” elaborates on the Joint Staff’s work to anticipate future challenges and opportunities. It stresses the need to study joint operations within the context of clear strategic and military trends and the importance of balancing well-grounded intelligence assessments with diverse perspectives on possible futures. The exploration of possible futures sets the stage for joint concepts.

Strategic guidance shapes joint concepts. The 2016 National Military Strategy established the strategic framework for the joint force, identifying Russia, China, Iran, North Korea, and violent extremist organizations (commonly referred to as the “4+1”) as the most pressing challenges. From a force development perspective, they typify possible scenarios that span the range of plausible future military operations. Collectively, they call for an inventory of advanced capabilities and sufficient capacity to *compete, deter, and win* across the entire range.<sup>4</sup> The family of joint concepts extends this framework to 2035, examining how trends might create gaps in the current joint force’s ability to meet these challenges and proposing solutions in the form of concept-required capabilities. The combination of concept-required capabilities shapes the future joint force and informs investments in future readiness. The second article, “A New Approach to Joint Concepts,” discusses how the family of joint concepts serves the Services, combatant commands, and other capability developers throughout the Department of Defense (DOD).

From inception through implementation, the Joint Staff methodology for concept development hinges on extensive collaboration among DOD stakeholders, other governmental organizations, academic institutions, think tanks, and multinational partners. The production team includes members from the Services, combatant commands, and Joint Staff. Their research draws from current strategic guidance, the *Joint Operating Environment 2035*, *Joint Strategic Assessment*, and other joint, Service, and agency studies to identify future trends, implications, and challenges. They also look beyond the joint force to other governmental and nongovernmental organizations, academia, industry, and multinational partners to expand understanding of the challenge and explore potential solutions. Foreign military partners, in particular, provide valuable input based on unique perspectives or expertise, especially as the United States prefers to conduct military operations within a coalition whenever possible.



Aviation Electronics Technician assigned to Battlecats of Helicopter Maritime Strike Squadron 73 conducts maintenance on MH-60R Seahawk in hangar bay of USS *Theodore Roosevelt*, Pacific Ocean, April 24, 2017 (U.S. Navy/Bill Sanders)

The production team consults with these experts throughout concept development to refine the military challenge and discover innovative ideas that might contribute to its solution.

The draft concept undergoes rigorous review by multiple stakeholders and subject matter experts. A planner-level working group and general officer steering committee—both consisting of representatives from the Services,

National Guard Bureau, combatant commands, Joint Staff directorates, DOD agencies, and international partners—meet regularly to evaluate proposed concepts, review progress, resolve issues, and promote collaboration among the joint community. Both bodies provide a mechanism for J7 accountability to stakeholders and act as clearinghouses that ensure DOD-wide unity of effort in the development of concepts. The Joint

Staff director approves concept recommendations and issues a memorandum to facilitate broad collaboration. Ultimately, the Chairman or Vice Chairman approves completed joint concepts after thorough staffing throughout DOD. The entire process takes 12 to 18 months to allow for thorough review and collaboration.

From scouting the future joint operating environment to proposing solutions to anticipated military challenges, wide-ranging participation is the key to success. The Joint Staff’s approach to concept development reflects the essentiality of collaboration and coordination in the governance process, production team composition, use of multiple external reviews, and comprehensive staffing. The approach not only ensures the concept is thoroughly researched and contains sound recommendations, but it also unifies multiple force development efforts across DOD, U.S. Government, and multinational partners. Ultimately, joint concepts inform the Chairman’s recommendations for balancing current and future readiness by providing well-grounded solutions to highly plausible challenges. *JFQ*

#### Notes

<sup>1</sup> *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening America’s Competitive Edge* (Washington, DC: Department of Defense), 7, available at <[www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf](http://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf)>.

<sup>2</sup> Joseph J. Dunford, Jr., “Maintaining a Boxer’s Stance,” *Joint Force Quarterly* 86 (3<sup>rd</sup> Quarter 2017), available at <<http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-86/>>.

<sup>3</sup> *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: The Joint Staff, July 14, 2016), available at <<https://fas.org/man/eprint/joe2035.pdf>>.

<sup>4</sup> *Summary of the 2018 National Defense Strategy*, 1.

Explosive Ordnance Disposal Mobile Unit 8 and Norwegian army explosive ordnance disposal team participate in cold-weather endurance ruck march during Exercise Arctic Specialist 2017, Ramsund, Norway, February 5, 2017 (U.S. Navy/Seth Wartak)



# Exploring the Future Operating Environment

By Jeffrey J. Becker and John E. DeFoor

*The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish . . . the kind of war on which they are embarking.*

—CARL VON CLAUSEWITZ, *ON WAR*

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**A**s we move past the plan of the day, proceed outside of the budget cycle, and venture beyond the 10-year horizon of strategic planning efforts, significant ongoing changes in the security environment

will alter the character of warfare beyond recognition. Competent, competitive states will combine military and societal power to coerce others, including the United States. Corrosive economic, social, and environmental



Sailors handle line aboard USS *Green Bay*, part of Bonhomme Richard Amphibious Ready Group, along with Embarked 31<sup>st</sup> Marine Expeditionary Unit, underway in U.S. 7<sup>th</sup> Fleet area of operations, Okinawa, Japan, April 8, 2015 (U.S. Navy/Scott Barnes)

forces will foment widespread, violent disorder. Rapidly evolving technologies will upend socioeconomic structures and threaten current joint force advantages. Understanding how these forces might reshape warfare does not come naturally or easily. Colin Gray, reflecting on this difficulty, observed that the outbreak of war often resembles a “race between belligerents to correct the consequences of the mistaken beliefs with which they entered combat.”<sup>1</sup>

### Why We Look Forward

In the past, describing the future security environment as “complex” was good enough. Until recently, hard military choices could be deferred. Truly existential threats were few. We no longer enjoy that luxury. Balanced against the indecision inherent in complexity, we see history as replete with audacious—yet ultimately erroneous—predictions about how the future would unfold.<sup>2</sup> Neither

of these errors—errors of indecision and false confidence—excuses military professionals from considering and confronting change in the character of warfare.

Thinking about the future lays the groundwork for the successful adaptation of our military.

One example of a flawed view of future force requirements may be seen in the U.S. fleet immediately prior to World War II. A “mistaken belief” in the 1920s and 1930s might have been a conviction that the battleship would remain the centerpiece of the fleet, with aircraft carriers operating in support of scouting and raiding missions. The attacks on Pearl Harbor and battle at Midway quickly disabused the Navy of this conviction. But in the preceding years, thoughtful, structured investigation of the use of the aircraft carrier as the fleet’s main striking arm enabled rapid adaption and innovation. Admiral Chester Nimitz, reflecting on the Navy’s ability to adapt, stated that he “had not seen anything we had not prepared for—except the kamikaze tactics towards the end of the war; we had not visualized those.”<sup>3</sup>

What beliefs must we challenge today? New adversary stratagem and operational approaches will contest U.S. influence around the world, rupture relationships, and circumscribe our ability to protect our global interests. Will the current joint force be able to operate effectively when faced with antiaccess/area-denial capabilities, including contested logistics systems, loss of cyberspace, and a denied electromagnetic spectrum? Can we defend allies—and ourselves—against subversion by great power competition short of armed conflict, hybrid and proxy approaches, and cyber-enabled global ideological insurgencies?

There are serious implications of inaction in the face of these challenges. Although the United States will likely remain the world’s most powerful nation out to 2035, it will face threats that might overwhelm its current military capabilities. Success in direct military engagements may not result in lasting political settlements—much less peace. More urgently, inaction raises the possibility of outright military defeat of the

joint force in battle and political accommodation on an adversary's terms rather than our own. These projected challenges demand continuous examination of the joint force's ability to secure the Nation today and tomorrow.

## Doing Military Futures Right

For the joint force, there is a right way and a decidedly wrong way to think about the future of conflict and war. First and foremost, military futuring is not about identifying specific conflicts or the trajectory of strategic relations with specific competitors and adversaries. Nor should it seek to identify the location or proximate causes of the next war.

To be useful, military futures should focus on those factors and circumstances that will most directly affect the decisions and actions of future joint commanders. It should consider those international, human, and technological factors that will drive conflict. It should develop a set of competitive spaces that will alter the character of conflict. It should cultivate the intellectual agility and mental resilience that will allow members of the joint force to have—much as Admiral Nimitz intimated—a sense of *déjà vu* in the midst of crisis. It is about understanding the missions the future joint force will be asked to conduct and about ensuring the joint force has the tools and operational approaches it needs to win. Doing military futures in the right ways will allow us to prepare the joint force, as a whole, to be ready—both materially and mentally—when the inevitable surprises arrive.

Envisioning a future war is difficult, particularly as we push beyond a decade. Because of this difficulty, we often default to a predictive rather than a preparatory mindset. Dr. Frank G. Hoffman suggests that thinking about the future “should not be a senseless exercise in eliminating uncertainty and making choices based on clear-cut prediction.”<sup>4</sup> Pursuing such an exercise can lead to the two major “sins of military futuring,” both of which divert us from thinking about the military implications of strategic change.

The first of these sins is to dwell on grand strategy. What competitor is rising? What nation might collapse? When will a

## Future Security Environment vs. Future Operating Environment

The *Future Security Environment* (FSE) refers to political, economic, social, or technological factors that influence national security. It is specifically designed to prepare the Nation for the full range of potential national security problems. The National Intelligence Council's recent *Global Trends: Paradox of Progress* is an example of a well-executed FSE.

The *Future Operating Environment* (FOE) is a composite of the conditions, circumstances, and influences that may affect the employment of the joint force and abide by the decisions of a commander. An *FOE* prepares all or part of the Armed Forces to anticipate and prepare for future military challenges (or potential opportunities). The *Joint Operating Environment* is the Joint Staff's perspective on the *FOE*.

Service futures efforts such as the Army's *Operational Environment and the Changing Character of Future Warfare* or the Air Force's *Strategic Environment Assessment* provide domain-focused perspectives linked to the broader joint view of future warfare found within the *Joint Operating Environment*.

peer competitor's economy surpass our own? Is this nation truly a military peer? These discussions are insufficient for future joint force development. They do not tell us how conflict is changing. They do not focus on the military character of potential adversaries and their evolving stratagem. They do not define how our own missions, capabilities, and operational approaches might need to evolve to outpace our competitors.

The Joint Staff must consider the future to understand the implications of change for the structure and function of the joint force. While appreciating the larger context of the future *security* environment, our focus should be the future *operating* environment and its effects on the joint force.

The second major sin is to place too much emphasis on technological advances. For the military futurist concerned with force development, this means not fixating on the technology, but rather examining its implications for the joint force.

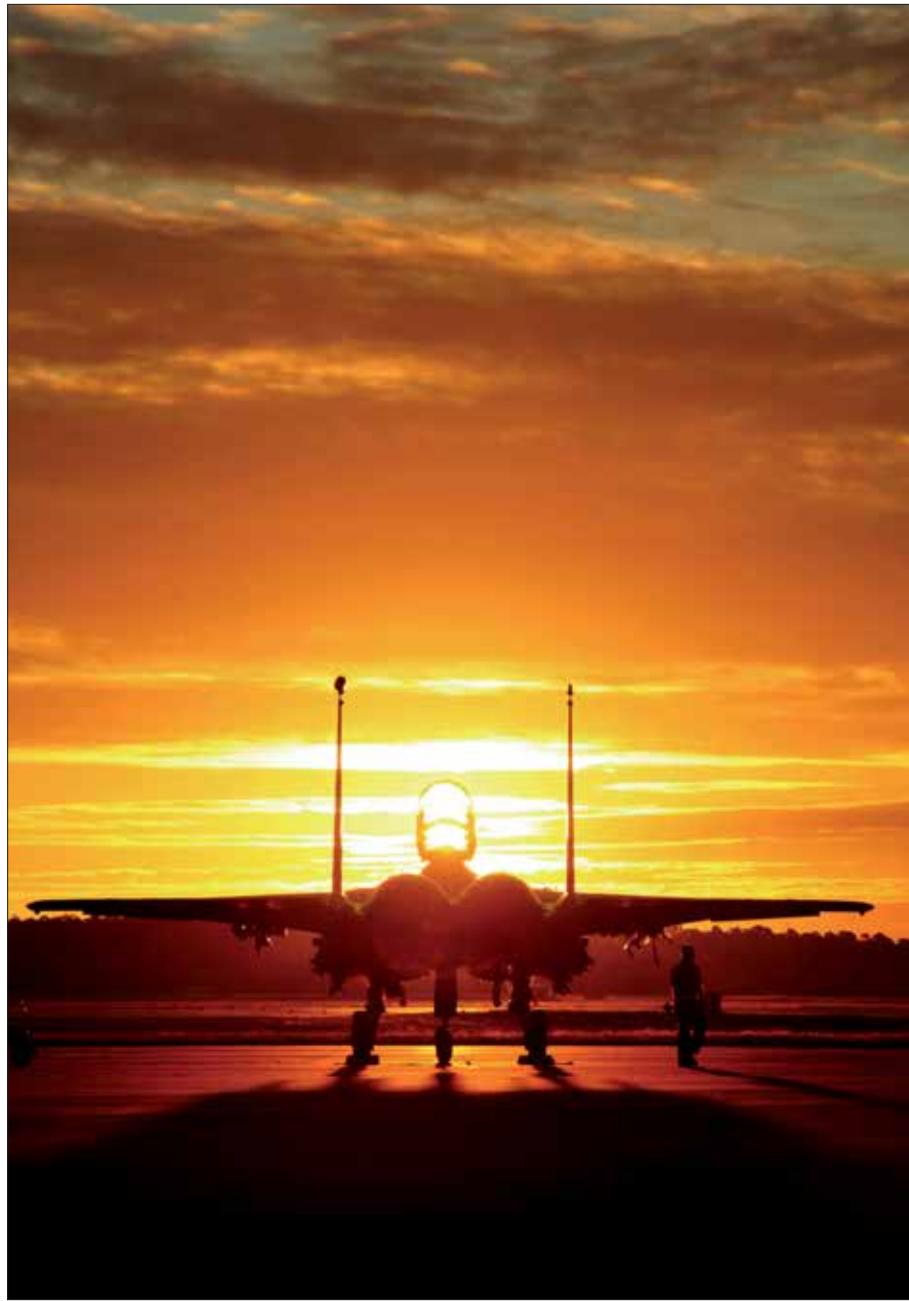
Futurists must think in terms of time. This means that we must strike a balance between *credibility* and *innovation* when making assertions about the changing character of warfare. Credibility relies on thorough descriptions of trends grounded in the intelligence developed through Joint Staff J2 and Defense

Intelligence Agency reporting. We must balance the desire for credibility with sufficient open-mindedness and curiosity to ignore some of the certitudes that anchor us to the present and the familiar. Innovation in futuring requires that we imagine a range of challenging—and even counterintuitive—conditions that might alter our world. The future will be different from the present in important ways. It will not simply be a continuation of today.

This balance between credibility and innovation in our assertions depends on the targeted time frame. We should not elect a time frame so close to the present as to constrain or bound our view of possible changes. But it should remain within a period in which we can reasonably project trends based on the intelligence record and historical experience.

Finally, doing joint futures right means engaging many different perspectives and ensuring that *creative friction* is integral to any conversation. Engaging with partners may require unclassified discussions to include other partners across the Department of Defense, as well as with subject matter experts from the research community, universities and laboratories, and foreign partners.

Perhaps the most difficult part of futuring is understanding where we as a nation and a military force fit into the



F-15 Eagle traveled to Tyndall Air Force Base, Florida, September 17, 2017, to participate in weapons system evaluation program as part of Combat Archer Exercise (U.S. Air Force/Beth Holliker)

broader world. International partnerships remind us that the single most important factor in the future security environment is often the United States itself. The international community gives us a clear-eyed, dispassionate perspective on U.S. strategic strengths, weaknesses, advantages, and vulnerabilities. Our partners help keep us honest by forcing us to examine our own perspectives and assumptions, and how

our activities may be perceived by others around the world.

Thus, doing military futuring right should emphasize change in the operating environment, not overly focus on technologies, and account for evolving adversary stratagem and operational approaches. It should balance credibility and innovation, and target a time frame in which we can reasonably project trends. Finally, the best military futures

planners challenge assumptions and cast a wide net when seeking ideas.

## Using Futures to Support Military Change

These ideas are important guideposts for the depiction of a future operating environment that addresses broad changes in the character of conflict. In fact, they guided the Joint Staff J7's Joint Futures series of events and reports that led to *Joint Operating Environment 2035* (JOE).<sup>5</sup> Several versions of the JOE have been issued over the years. The Joint Staff continually monitors change in strategic, social, technological, and military conditions and publishes a new JOE once, as then-General James Mattis noted in 2010, "we have a sufficient understanding to make a new edition worthwhile."<sup>6</sup>

This latest edition of the JOE addresses a growing need for clarity as a number of pressing themes driving new and dangerous sources of military competition became apparent. It describes the future operating environment as driven by two distinct but related sets of security challenges. *Contested norms* describe military challenges resulting from increasingly powerful revisionist states and select nonstate actors that use any and all elements of power to establish their own sets of rules in ways unfavorable to the United States and its interests. *Persistent disorder* is characterized by an array of weak states that become increasingly incapable of maintaining domestic order or good governance.

Reflecting troubling combinations of strategic, social, and technological trends, the JOE notes that the future joint force must be able to confront:

- persistent violent ideological conflicts with transregional terrorist movements and cross-border insurgencies
- the ability of adversaries to threaten U.S. territory and sovereignty and the freedom and autonomy of its citizens
- the reality of persistent great power competition, including long-term technologically advanced adversary military modernization efforts and

- a range of new stratagem to impose their will
- the contesting and disruption of the use of global commons (maritime, electromagnetic, and outer space) in both peacetime and war by adversaries
- the race to define and defend national sovereignty and freedom of action in and through cyberspace
- the global and regional repercussions of shattered or forcibly reordered regions around the world.

These military contexts drive an evolving set of future joint force missions. Each of these future missions in turn demand new operational approaches and capabilities. The future joint force must be prepared to support a range of potential national strategic goals including adapting to changing conditions, imposing change, and enforcing outcomes. It does this through a number of discrete military tasks (for example, shaping or containing conditions and consequences or destroying an adversary's will or capability to resist).

A set of 24 future joint force missions is designed to encourage joint concepts to address what the future force might need to do and be. Additionally, they encourage wide-ranging conversations during concept development about how we balance future missions. Where should the joint force focus its future development efforts in order to address the full range of these potential missions? Should we? Can we?

The JOE defines the missions by the intersection of military contexts with a range of military tasks, including missions to:

- shape or contain challenges or conditions to cope with new situations
- deter or deny to manage the antagonistic behavior of competitors or to impose costs on competitors or adversaries taking aggressive action
- disrupt or degrade forces, capabilities, or initiatives to punish aggressive action by an adversary or force an adversary to retreat from previous gains

- compel or destroy to impose desired changes to the international security environment and subsequently enforce those outcomes.

This span of missions will require a diverse set of capabilities and operational approaches. The joint force may not be able to meet the full range of missions with currently projected capabilities and fiscal limitations. Today's defense strategies are driven by priority missions, which are intended to ensure that joint concepts account for the full range of potential military responses.

Future U.S. strategy will be defined by a range of strategic goals, from adapting to future conditions to imposing change and enforcing outcomes. A family of joint concepts should enable the future joint force to *support a wide range of potential strategic goals*.

## **The Future of the Future Operating Environment**

The ideas found within the JOE set the stage for a more detailed evolution of operational concepts to organize and employ joint forces in the future operating environment. The JOE is the entry point for "rigorously defining the military problems anticipated in future conflict."<sup>77</sup> Looking into the future in this way can accelerate new concepts to support future strategy and thus identify a foundation on which to build enduring U.S. military advantages.

Dialogue with U.S. and international partners about the future operating environment informs numerous future force development activities across the U.S. military. Vice Admiral Kevin Scott, director of the Joint Staff J7, introduces the JOE by stating, "The ideas here should encourage a dialogue about what the Joint Force should do and be to protect the United States, its allies, its partners, and its interests around the world in 2035."<sup>78</sup> This approach to the future operating environment has informed concepts for the use of robotics on the battlefield, joint operations in the global commons, and operations in a pervasive information environment. It has assisted in developing an integrated campaigning

concept to address Gray Zone challenges at the cusp between peace and war.

The *Joint Operating Environment 2035* defines the emerging problem set and provides a foundation for focused concept development efforts within the emerging family of joint concepts. As the National Security Strategy and National Defense Strategy alter how we confront and compete with great powers, increase the lethality of our forces, and rally the widest and most powerful set of allies and partners for the arduous path ahead, we will assess the implications of these changes for the view of the future we have articulated in the JOE. We will adapt and refine our vision of the future operating environment and, perhaps, build a new JOE when the time is right. Adapting our joint capabilities through a structured look at the future will continually focus on seeking new operational military advantages for the Nation and ensuring a future joint force with fewer "pre-war mistaken beliefs" than its opponents. JFQ

## **Notes**

<sup>1</sup> Colin Gray, *Another Bloody Century: Future Warfare* (London: Weidenfeld & Nicolson, 2005), 43.

<sup>2</sup> For a discussion, see Lawrence Freedman, *The Future of War* (New York: Perseus Books, 2017).

<sup>3</sup> John M. Lillard, *Playing War: Wargaming and U.S. Navy Preparations for World War II* (Washington, DC: Potomac Books, Inc.), 2006.

<sup>4</sup> F.G. Hoffman, "The Future Is Plural: Multiple Futures for Tomorrow's Joint Force," *Joint Force Quarterly* 88 (1<sup>st</sup> Quarter 2018), available at <<http://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-88/Article/1411221/the-future-is-plural-multiple-futures-for-tomorrows-joint-force/>>.

<sup>5</sup> *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington, DC: The Joint Staff, July 14, 2017).

<sup>6</sup> *Joint Operating Environment 2010* (Norfolk, VA: U.S. Joint Forces Command, February 2010), 2.

<sup>7</sup> *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening America's Competitive Edge* (Washington, DC: Department of Defense, 2018), 7.

<sup>8</sup> *Joint Operating Environment 2035*, i.



Damage Controlman tests countermeasure wash-down system on forecastle aboard USS *Green Bay*, Gulf of Thailand, February 9, 2017  
(U.S. Navy/Chris Williamson)

by the rise of competent and competitive states; economic, social, and environmental challenges; and rapidly evolving technologies, these changes will necessitate innovation within the Department of Defense (DOD). Innovation must develop and employ new capabilities, organizational constructs, and approaches to warfighting to maintain competitive advantage over a broad range of potential adversaries. However, plans for innovation within DOD must not start with a blank sheet of paper. Rather, the joint force should be provided with a blueprint for innovation to channel creativity toward addressing specific operational challenges. Innovation aligned with strategy will help ensure that the future joint force will have the ability to stand firm, while at the same time maintain responsiveness to adapt and respond in new ways as the environment evolves.

In the past, joint operating concepts were developed to describe how the joint force would execute military operations within a specific mission area.<sup>1</sup> However, the 2016 National Military Strategy reoriented the strategic framework for the joint force, identifying Russia, China, Iran, North Korea, and violent extremist organizations—commonly referred to as “4+1”—as the most pressing challenges.<sup>2</sup> These challenges, when aggregated, serve to benchmark and inform capability development and defense innovation.<sup>3</sup> To align joint concept development with strategic guidance, the decision was made to adopt a challenge-based structure for future operating concepts. This change will enable the family of joint concepts, consisting of the capstone concept, joint operating concepts, and supporting concepts, to extend the challenge-based framework out to 2035 and will realize the Chairman’s vision for joint concepts “offering educated judgments about future military challenges . . . defining future requirements and addressing gaps in our existing approaches and capabilities.”<sup>4</sup>

Applying the challenge-based framework to the family of joint concepts will provide real-world context to the environment in which the future joint force

# A New Approach to Joint Concepts

By Erik Schwarz

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Lieutenant Colonel Erik Schwarz, USAF, is an Intelligence Officer in the Joint Concepts Division, Joint Staff J7.

The future operating environment will feature broad changes in the character of warfare. Driven

will be called to operate. This reinforces clear thinking about the true character of future challenges and helps to guard against building the force for the fight we want rather than the fight we will actually face. Regardless of future technological innovation, war will remain a human endeavor, a competition between and among belligerents. The contextual aspects of politics, history, culture, and geography, as well as technological capabilities, must be considered as joint concepts propose new ways of operating. Ultimately, the challenge-based family of joint concepts will provide a blueprint for the joint force out to 2035 with the fidelity to drive future force development and inform senior leaders as they make investment decisions today to prepare the joint force for tomorrow.

### Family of Joint Concepts

Joint concepts provide solutions to compelling, real-world challenges, both current and envisioned, for which existing doctrinal approaches and joint capabilities are deemed inadequate.<sup>5</sup> As the range of strategic goals evolve and battlefield conditions, technology, and opposing force capabilities change, the family of joint concepts provides an overarching structure to address these challenges in a comprehensive and strategically relevant way (see figure). When applied comprehensively, the family of joint concepts will support the Chairman's best military advice to alter the trajectory of future risk.

**Capstone Concept.** The capstone concept represents the Chairman's unifying vision for how the joint force must adapt and evolve to counter future challenges. It provides a common view of the future operating environment and vision for how the joint force will conduct globally integrated operations. The National Military Strategy's Secretary of Defense Global Integration annex defines *global integration* as "the arrangement of cohesive military actions in time, space, and purpose, executed as a whole to address transregional, multidomain, and multi-functional challenges."<sup>6</sup> The capstone concept will incorporate and extend this vision of globally integrated operations to

provide comprehensive options to meet future strategic challenges. A capstone concept will be developed when the confluence of new concepts, strategies, lessons learned, and emergent challenges necessitates an updated, unifying vision for future force development.

The capstone concept is developed in collaboration with combatant commanders and Service chiefs, enabling horizontal integration of force development responsibilities and priorities. Much as the National Military Strategy is the foundation for strategic integration, planning, and resource allocation for the joint force out to 2025, the capstone concept forms this foundation for future force development across the spectrum of doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P).

**Joint Operating Concepts.** Joint operating concepts that are synchronized with and complementary to national strategy provide a clear vision of how the joint force may be called to operate in the future operating environment. By establishing touchpoints between strategy and a vision of future joint operations, joint operating concepts arm the Chairman with the required information to balance near- and mid-term risk with long-term force development requirements.

The Joint Staff, in coordination with the Services and combatant commands, are developing joint operating concepts that correspond to the 4+1 priority challenges identified in the National Military Strategy. The joint operating concepts should not be viewed as a prediction of future conflict. Rather, these priority challenges are being utilized as benchmarks for future force development, recognizing that adversaries are developing capabilities and stratagems to exploit perceived vulnerabilities in our way of war. Holistically, the 4+1 represent great power competitors with modernized nuclear arsenals and advanced counter-power projection capabilities, who export malign influence, pose threats to homeland security and regional peace, and perpetuate violent extremism. By integrating concept-required capabilities from the joint operating concepts into

a coherent set of force development recommendations, senior leaders will be better prepared to make capability and capacity decisions that provide the joint force with the inherent operational flexibility necessary to address any unexpected or emergent challenge.

By leveraging the joint operating environment and intelligence estimates, the joint operating concepts will project future capabilities and strategies of the adversary out to 2035. These will be compared to anticipated U.S. and allied capabilities and strategies to expose shortfalls the joint force will face if the force development trajectory is not altered. The concept will then describe alternate methods of operating to mitigate these shortfalls and identify the corresponding implications for joint force development.

**Supporting Concepts.** Supporting concepts describe how the future joint force will execute a function, domain, or activity to allow a future joint force commander to synchronize, integrate, and direct joint operations. Supporting concepts may be specific to a joint operating concept or may support multiple joint operating concepts equally. Ultimately, they will add depth and breadth to the compelling operational approaches required to meet the challenges of the future. There is a significant library of active joint concepts that serve as the baseline supporting concepts for the family of joint concepts.<sup>7</sup> Future supporting concepts will be developed as additional conceptual gaps are identified during the development of the challenge-based joint operating concepts.

### What Will the Challenge-Based Joint Operating Concepts Do?

The persistent degradation of joint force readiness resulting from 16 years of war, a deteriorating global security situation, and adversaries' growing capability to contest U.S. military capabilities require fundamental changes to how we develop the future joint force. New capabilities and weapon systems will be necessary, but we will not be able to simply purchase competitive advantage. New operational approaches must be developed so we can rethink how we



USS *Ronald Reagan*, USS *Theodore Roosevelt*, and USS *Nimitz* conduct operations in international waters as part of three-carrier strike force exercise, Western Pacific, November 12, 2017 (U.S. Navy/James Ku)

use existing capabilities, integrate new capabilities, and present our adversaries with unsolvable dilemmas. Joint operating concepts will serve as the foundation of operational adaptation to convert potential military strength into actual combat power.

The decision to adopt the 4+1 challenge-based construct for the joint operating concepts has required a significant shift in how we approach concept development. This new approach is focused on meeting the operational needs of a future joint force commander. Joint operating concepts should serve as precursors for future plans, expanding the options available to joint force commanders by anticipating changes in the character of war, delivering joint force capabilities, and proposing alternate approaches necessary to maintain competitive overmatch.

While joint operating concepts will inform future plans, it is important not to view them as operational or contingency plans. Rather than address a specific operational challenge, each joint operating concept will address the full span of missions while accounting for the transregional, multidomain, and multifunctional aspects of the challenge.<sup>8</sup> This broad approach will enable the operationalization of the concepts by describing how the joint force must be integrated across functions, domains, organizations, and geographic boundaries.

To ensure operational relevance of the challenge-based joint operating concepts, the decision was made to write the documents at the classified level. This has enabled the incorporation of Service and combatant commander assessments, wargame results, and intelligence products as the foundation for joint operating concept development. While these

assessments—particularly those from the combatant commands—tend to focus on near- and mid-term challenges, they provide useful insights into challenges that current joint force commanders are facing and highlight areas where competitive overmatch is eroding relative to the 4+1 challenges.

The joint operating concept writing teams require a detailed understanding of how each of the 4+1 challenges affects national objectives, military capabilities, operational concepts, socioeconomic trends, and threat perceptions from today through 2035. To achieve this in-depth understanding, operations, planning, and intelligence subject matter experts from across the combatant commands, Services, and Intelligence Community have been incorporated into the core writing teams for each concept. This approach integrates diverse perspectives into the development process. Ultimately, the

process of reexamining and revalidating the challenges and proposed solutions serves to enhance the concepts' credibility and utility.

Finally, by integrating the development of the joint operating concepts across the Services and combatant commands, proposed solutions will truly reflect the aspirational goal of globally integrated operations. The ideas will break the longstanding paradigm of Service interdependence and drive the future joint force toward true integration. The goal is to provide the future joint force commander with a force capable of operating and winning in the future operating environment, however it may manifest.

## Integration

Each of the joint operating concepts will present a hypothesis for how the joint force could operate to achieve national military objectives relative to 4+1 challenges. These potential solutions will include concept-required capabilities that will span the range of DOTMLPF-P. However, the family of joint concepts is not suggesting that the future joint force will require five unique sets of capabilities to address the most pressing challenges. Rather, aggregation and analysis of required capabilities across the family are required to ensure that future force development activities provide solutions capable of addressing the full range of future challenges.

A comprehensive understanding across the full range of priority challenges will not only serve to identify capability requirements that are cross-cutting but will also highlight challenge-specific, high-consequence capability requirements. By providing a comprehensive understanding of future capability requirements, senior leaders will be able to make informed joint force development decisions with an understanding of future risk balanced with current operational requirements.

To be successful, this effort requires a shift from the current view that the joint force exists when the Services are employed by combatant commands. A common, DOD-wide view of future

force development requires integrated joint force capability development, resourcing, and prioritization from inception. To maintain competitive overmatch, the family of joint concepts must lead the Services' concept and capability development processes by providing a single standard for how the future joint force must operate. This will likely force us to rethink how we approach domain-specific concept development and drive hard choices about the future trajectory of Service capabilities.

Ultimately, the family of joint concepts must serve as a shared point of departure for future joint force development. The ideas in the concepts must be continually evaluated and refined through wargames, experiments, and studies. As the conceptual ideas are honed, they must inform the Chairman's tools for influencing the budgeting process—namely, the Chairman's Risk Assessment and the Chairman's Program Recommendation—to ensure a unified view of near-term and future joint force requirements.

The operating environment that the joint force will be called to operate in, both today and into the future, is marked by contested norms and persistent disorder. The joint force cannot mortgage its ability to compete below the threshold of armed conflict to dominate the conventional battlefield. Nor can we further delay future force development to meet our current operational requirements and buyback readiness.

The family of joint concepts will provide the Chairman and Services with a blueprint required to meet the operational challenges of the future operating environment. The family will be innovative, operationally relevant, and provide novel solutions to our most pressing challenges to guide senior leader priorities for future force development. Joint concepts will enable the Chairman to alter the trajectory of future risk and ensure that future joint force commanders are armed with the competitive advantage to fight and win the Nation's wars. **JFQ**

## Notes

<sup>1</sup> The previous family of joint concepts contained cooperative security, deterrence operations, irregular warfare, major combat operations, stability operations, and homeland defense/civil support.

<sup>2</sup> *National Military Strategy* (Washington, DC: The Joint Staff, November 11, 2016), foreword. This document is CLASSIFIED.

<sup>3</sup> Joseph F. Dunford, Jr., "Meeting Today's Global Security Challenges," speech, Washington, DC, March 29, 2016.

<sup>4</sup> Joseph F. Dunford, Jr., "Maintaining a Boxer's Stance," *Joint Force Quarterly* 86 (3<sup>rd</sup> Quarter 2017), 3.

<sup>5</sup> Joint Publication 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: The Joint Staff, March 25, 2013, Incorporating Change 1, July 12, 2017), vi–9, available at <<https://fas.org/irp/doddir/dod/jp1.pdf>>.

<sup>6</sup> *National Military Strategy*, Secretary of Defense Global Integration annex, 1. This passage is UNCLASSIFIED.

<sup>7</sup> The full library of joint concepts is available at <[www.jcs.mil/Doctrine/Joint-Concepts/Joint-Concepts/](http://www.jcs.mil/Doctrine/Joint-Concepts/Joint-Concepts/)>.

<sup>8</sup> These missions are to shape or contain, deter or deny, disrupt or degrade, and compel or destroy.



U.S. Coastguardman watches as crew boat departs from *Ardenne Venture* after annual exam to ensure it complies with U.S. and international regulations prior to operating in U.S. waters and ports, San Diego, California, August 3, 2012 (U.S. Coast Guard/Henry G. Dunphy)

# The U.S. Government's Approach to Environmental Security

## Focus on Campaign Activities

By George E. Katsos

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This article continues the discussion on human security's<sup>1</sup> seven relevant dimensions: economic, food, health, environmental, personal, community, and political.<sup>2</sup> Complementing previous *Joint Force Quarterly* installments on health and food security,<sup>3</sup> the following describes the U.S.

Government's approach to environmental security with a focus on combatant commander campaign activities.

Populations rely on a healthy physical environment, primarily land, water, and air. Certain threats to the environment, whether from pollution, contamination, natural resource depletion, or climate

change, know no borders and their hazardous effects can harm farming, fishing, and herding practices that sustain human life. While human ambitions may inflame threats to the environment, population movements can overwhelm institutional capacity and generate the need for external intervention. Along with poor governance and environmental neglect, these challenges affect overall political stability, human security, and the global economy, making environmental security a pillar of national security. A former National Intelligence Director highlighted the connection between stability and security in the environmental context, “Unpredictable instability has become the new normal . . . extreme weather, climate change, environmental degradation, rising demand for food and water, poor policy decisions and inadequate infrastructure will magnify . . . instability.”<sup>4</sup>

To better understand environmental security, two examples highlight U.S. Government perspectives. The first is a report that describes environmental security as a process whereby solutions to problems contribute to national security objectives and cooperation among stakeholders to prevent threats before they affect national security.<sup>5</sup> Another is a Department of Defense (DOD) policy that defines environmental security as a program that enhances readiness by institutionalizing the Department’s environmental, safety, and occupational health awareness, making environmental security an integral part of daily activities.<sup>6</sup> For purposes here, environmental security includes protecting human populations, wildlife, mammals, and ecosystems from and curbing harmful practices that contribute to environmental degradation.<sup>7</sup> With the government’s increasing role as a security provider and growing political focus on human security, the U.S. military will most likely support an expanding role to protect national interests against threats to environmental security. In the following sections, research and informal discussions form the following analysis: history of U.S. policy and international initiatives, executive branch strategy and organizational roles, and military

campaign activities in support of environmental security efforts.

## Legislative Actions and International Engagement

U.S. environmental law beginnings can be linked to the *Rivers and Harbors Act of 1899*,<sup>8</sup> which protected navigable areas from negative human practices such as discharge or fill-in matter processing without a permit. Since 1946, Congress generated multiple environmental protection measures such as laws on clean air,<sup>9</sup> clean water,<sup>10</sup> protection of land,<sup>11</sup> protection and preservation of life forms,<sup>12</sup> and the disposal or recovery of hazardous waste.<sup>13</sup> Two laws that significantly affect Federal Government approaches are the *National Environmental Policy Act of 1969*,<sup>14</sup> which requires detailed statements of environmental effects for all major Federal actions significantly affecting the environment, and the *Endangered Species Act of 1973*,<sup>15</sup> which protects species from extinction. Also worth mentioning is the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*<sup>16</sup> and *Pollution Prevention Act of 1990*,<sup>17</sup> which provide for hazardous material cleanup and pollution prevention enforcement through efficiencies and cost effectiveness, respectively. These measures combine to protect humanity and domestic ecosystems and curb harmful environmental practices both at home and abroad.

The United States also provides international assistance for global environmental initiatives within developing countries. Under President Barack Obama, U.S. participation in the Global Climate Change Initiative (GCCI)<sup>18</sup> aimed to integrate changing climate considerations into U.S. foreign assistance through a range of bilateral, multilateral, and private-sector mechanisms. Efforts include the promotion of sustainable and climate-resilient societies, fostering of low-carbon economic growth, and reduction of greenhouse gas emissions from deforestation and land degradation. The United States also participates with international organizations such as the United Nations (UN) and other regional

organizations (for example, the North Atlantic Treaty Organization) to achieve environmental objectives.<sup>19</sup>

In 1988, the U.S. Government supported the establishment of the UN Intergovernmental Panel on Climate Change to identify political and economic impacts of human-induced climate change and provide scientific options for adaptation and mitigation.<sup>20</sup> More recently, the Environmental Protection Agency (EPA) signed a memorandum of understanding with the UN Environment Programme to provide a framework for cooperation activities to protect human health and the environment.<sup>21</sup> The EPA also works with Environmental Canada under the Canada-U.S. Joint Inland Pollution Contingency Plan to cooperate on pollutant release measures that can cause environmental harm along the shared inland border.<sup>22</sup> While the United States ratified the UN Framework Convention on Climate Change treaty in 1992, the President did not endorse the subsequent 1998 Kyoto Protocol to limit greenhouse gases, whether economically not feasible, politically unacceptable, or factually impalpable to the United States. In addition, although the United States did not ratify the 1994 UN Conference on the Law of the Sea, it does follow laws protecting the marine environment.<sup>23</sup> For a better understanding of how the government supports agreements, legislative actions, and forms of international engagement, the following reviews the executive branch’s approach to environmental security.

## The Executive Branch

The President’s National Security Strategy articulates overarching policy goals that can involve environmental security approaches.<sup>24</sup> Subsequent strategies and plans such as the U.S. Agency for International Development (USAID) Climate Change and Development Strategy and 2013 Climate Action Plan support the National Security Strategy by linking environmental security objectives such as reducing greenhouse gases to political objectives.<sup>25</sup>

Another tool the President uses to establish overarching policy is authoring

an executive order. In 1970, one order directed a national approach on environmental issues by establishing the independent EPA. It also created the National Oceanic and Atmospheric Administration (NOAA) under the Department of Commerce.<sup>26</sup> Other notable orders were developed over the last 40 years: *Federal Compliance with Pollution Control Standards* ensures necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities;<sup>27</sup> *National Oil and Hazardous Substances Pollution Contingency* and its National Contingency Plan (NCP) provide organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous materials;<sup>28</sup> *Environmental Effects Abroad of Major Federal Action* provides Federal agency officials with responsibility for authorizing and approving actions of pertinent environmental considerations;<sup>29</sup> and *Planning for Federal Sustainability in the Next Decade* revokes or replaces four previous orders and other public environmental laws.<sup>30</sup> Most recently in 2017, *Promoting Energy Independence and Economic Growth* sponsors clean and safe development of our nation's vast energy resources; however, it also revokes a previous order to prepare the United States for the effects of climate change.<sup>31</sup>

The President also articulates specific national security policy through Presidential directives. Over the last 15 years, the following directives set conditions for improving environmental security and national strategy development: *U.S. Global Development Policy* emphasizes environmental security through the GCCI;<sup>32</sup> *National Preparedness* replaces a previous directive to better synchronize whole-of-government responses to threats that include the environment; *Implementation of the National Strategy for Countering Biological Threats* supports biodefense directives;<sup>33</sup> *Critical Infrastructure Resilience* revokes a previous directive that replaced another and identifies administrative sectors such as Food and Agriculture, Health Care and Public

Health, Water and Waste Systems, and Nuclear Reactors, Materials, and Waste;<sup>34</sup> and *U.S. Security Sector Assistance* supports building partner capabilities in addressing common security issues.<sup>35</sup> To analyze the breakdown of Federal environmental security efforts, the following overview captures them in three categories: significant, additional, and remaining.

**Significant Efforts.** Both the Department of State and EPA play significant roles in achieving global U.S. Government environmental security objectives. The State Department manages foreign affairs and conducts diplomacy for the President, which can result in foreign aid, security assistance, and economic development support to other nations. For State, USAID coordinates and integrates economic development and disaster assistance expertise and resources abroad. For purposes of this discussion, USAID is categorized as an entity under the State Department as they both share one Cabinet Secretary.<sup>36</sup> Three strategic documents that provide organizational guidance on environmental security are the Quadrennial Diplomacy and Development Review, State and USAID Joint Strategic Plan, and USAID Global Climate Change and Development Strategy.<sup>37</sup> As the principal lead for governmental security-sector assistance, State oversees policies, programs, and activities to engage with, help build and sustain the capacity of, and enable foreign partners to address their own common security challenges, including environmental security.<sup>38</sup> State also arranges financial climate change initiative assistance so that USAID's Office of U.S. Foreign Disaster Relief Assistance can administer and implement GCCI programs.<sup>39</sup> For responses to domestic challenges, State manages international contributions of support.

The EPA is a non-Cabinet, stand-alone government agency managed by a Presidential-appointed administrator who attends related Cabinet meetings. The EPA develops national environmental policies, regulations, and enforcement regimes to safeguard air, land, water, and ecosystems from harmful substances,

pollutants, or contaminants. Under the NCP, the EPA leads on-scene U.S. Government efforts to remove and mitigate oil spills and the release of hazardous materials on land. The EPA also works closely with state regulators and industry stakeholders to coordinate development, implementation, and enforcement of new and existing environmental standards. Additionally, the EPA manages environmental science and technology programs such as the Strategic Environmental Research and Development Program (SERDP) through a memorandum of understanding with DOD and the Department of Energy (DOE). Per the Department of Homeland Security (DHS), the National Response Framework (NRF) identifies the EPA as the lead agency for Emergency Support Function (ESF) #10—Oil and Hazardous Materials Response.<sup>40</sup>

**Additional Efforts.** Other departments make substantial contributions to U.S. Government environmental security efforts. DHS provides domestic security and coordinates Federal crisis response and recovery efforts through the Federal Emergency Management Agency (FEMA). DHS also supports environmental security through cross-border protection and prepares for mass migration in the Caribbean through exercise participation.<sup>41</sup> Per the NCP and through the U.S. Coast Guard, DHS leads on-scene U.S. Government domestic efforts to remove and mitigate oil spills and hazardous materials released into waters and adjoining shorelines. The Coast Guard also has a National Response Center that tracks reporting of oil spills and other chemical releases.<sup>42</sup>

The Commerce Department's environmental objectives focus on understanding and predicting changes to the environment due to the frequency and severity of extreme weather events.<sup>43</sup> Under NOAA, Commerce provides access to comprehensive oceanic, atmospheric, and geophysical data, and delivers scientific solutions.<sup>44</sup> NOAA also deploys scientific support teams for pollution response within the United States and monitors coastal tidal gauges.<sup>45</sup>



Sailor surveys healthy reef off coast of Guantanamo Bay to assess and compare possible effects of recreational diving on ecosystem, Naval Station Guantanamo Bay, Cuba, November 23, 2015 (U.S. Navy/Charles E. White)

DOD supports environmental security efforts primarily through its military workforce. In support of capacity-building activities abroad, DOD contributes to engagement and prevention programs, surveillance and response systems, and develops missions, resource requirements, and operational considerations posed by current and projected climate variations.<sup>46</sup> Organizational policies also establish environmental security standards on issues such as low-level radiation waste practices and environmental restoration as well as inform commander environmental programs.<sup>47</sup> DOD also participates in SERDP,<sup>48</sup> provides temporary power generation and grid repair,<sup>49</sup> conducts homeland defense, and provides Defense Support To Civilian Authorities (DSCA) through research, preparation, surveillance, and response efforts.

The Department of Agriculture develops markets, protects natural resources

through conservation, and manages the Forest Service and Natural Resources Conservation Service. Its workforce supports the health and vitality of the agricultural sector that depends on clean air, land, soil, and water, as well as environmentally sound practices.<sup>50</sup> In support of crisis response, the Department of Agriculture is delegated by DHS in the NRF to lead ESF #4—Firefighting to protect the public, property, and the environment.<sup>51</sup>

The Energy Department provides assistance and information regarding energy supply and system damage that covers infrastructure, environmental management, civilian radioactive waste management, and hydroelectric power. It also ensures sound management of the disposition of the national nuclear arms complex and participates in SERDP.<sup>52</sup> Under the National Nuclear Security Administration, DOE responds

to radiological and nuclear emergency events with scientific and technical expertise.<sup>53</sup> For domestic crisis response, DOE facilitates the restoration of damaged energy systems and components as the lead coordinator for ESF #12—Energy.<sup>54</sup> DOE also manages the Nation's Strategic Petroleum Reserve.<sup>55</sup>

**Remaining Efforts.** Other departments maintain domestic capabilities and may have equity in support of global environmental security efforts. The Department of the Interior manages the Nation's public lands, minerals, national parks, and has the responsibility of western water resource management and conservation of natural resources.<sup>56</sup> The Department of Transportation works to increase energy efficiency, reduce greenhouse gas emissions, conserve water resources, eliminate waste, and prevent transportation services and facility pollution.<sup>57</sup> The Department of Health

and Human Services via the Centers for Disease Control and Prevention and Food and Drug Administration coordinates environmental health expertise in preparation of and during public health emergencies.<sup>58</sup> The Department of Justice enforces Federal pollution abatement laws to protect the environment,<sup>59</sup> and the Treasury Department implements GCCI activities through international organizations.<sup>60</sup> Furthermore, the National Aeronautics and Space Administration (NASA) is an independent agency that tracks and characterizes orbital debris in space.<sup>61</sup>

As U.S. Government departments continue to develop their own strategies to achieve national environmental security objectives, the future is uncertain on how the government will plan for a robust international workforce response that includes environmental relief for massive population movement and critical public infrastructure failure.<sup>62</sup> For interoperability and educational reasons, non-DOD organizations should keep a watchful eye on their portrayal in and participation in the development of U.S. military joint doctrine—the core foundation of military workforce best practices.

## Military Campaign Activities

Threats and their hazardous effects can increase the risk of instability and conflict, requiring security institution involvement. DOD is one security institution that supports environmental security efforts when directed to do so, but it also relies on stable physical environments for maximum interoperability. In support of government activities, combatant commanders integrate environmental considerations, such as compliance and protection, into plans and missions to prevent and mitigate environmental degradation and other negative effects. However, this may not always be feasible due to competing operational interests that commanders must assess, such as the inherent right of self-defense or combat.

While many terms describe DOD environmental security, this discussion refers to them as *campaign activities*. Under military investments, campaign

activities revolve around mutual agreements and commitments to promote long-term regional stability. Within limited military deployments, campaign activities include crisis response and contingencies that meet defined short-term requirements such as protecting civilians. For large-scale military missions, campaign activities are more complex, standalone, and longer.<sup>63</sup> Operational and tactical commanders also develop tasks in support of organizational policies and campaign activities through command environmental programs to mitigate negative environmental effects and harmful practices generated by military forces that affect local ecosystem, wildlife, mammal, and human survival. The following sections categorize campaign activities that counter negative effects and reform existing practices within three physical elements of the operational environment: air, land, and water.<sup>64</sup>

**Air.** Air quality affects civilian populations and military personnel, as well as technological equipment, instruments, and communication systems. Pollutants such as carbon dioxide and other gases, radioactive material, or manufactured pathogens released into the air can harm air quality and deposit hazardous materials in other locations (for example, through air plumes, acid rain).<sup>65</sup> Conditions created by severe weather climates and ozone depletion also can negatively affect clean air. These hazards can generate effects that produce smog, inflame wildfires, and increase ultraviolet radiation that harm human health and create uninhabitable environments. DOD campaign activities include foreign humanitarian assistance (FHA), disaster relief, and DSCA.

In 2011, DOD personnel under U.S. Pacific Command (USPACOM) supported U.S. Government efforts in Japan to conduct radiation reconnaissance monitoring and mitigation for the Fukushima nuclear reactor response.<sup>66</sup> In support of government relief against deliberate contamination, DOD personnel in 1991, under U.S. Central Command, assisted the Kuwaiti government's oil-refinery fire mitigation efforts. Oil fires were perpetrated

by retreating Iraqi military forces and were intended to impede allied military advances and interoperability as well as damage the Kuwaiti economy.<sup>67</sup> In 2016, DOD personnel gathered air samples in an allied Iraq and trained government forces to assist to control oil well and sulfur plant fires ignited by terrorists.<sup>68</sup> At home, DOD—through U.S. Northern Command (USNORTHCOM) or USPACOM—leads homeland defense efforts against external threats, such as weapons of mass destruction, delivered through and disseminated into the air. DOD also conducts campaign activities to build institutional capacity of foreign forces against ecoterrorism (commonly known as environmental terrorism). Additionally, combatant commands integrate extreme weather-driven scenarios into exercises to maintain U.S. military readiness capabilities and interoperability with foreign forces.<sup>69</sup>

For disaster preparation and building partner capacity efforts, DOD personnel, under USNORTHCOM and U.S. Southern Command (USSOUTHCOM), provide courses and conferences<sup>70</sup> as well as hazmat response training with countries such as Mexico and others in Central America, respectively.<sup>71</sup> DOD also assists in domestic environmental security efforts. In 2017, in support of response and recovery efforts for Hurricane Harvey, DSCA focused on assisting state and local authorities in stemming toxic airborne emissions from dozens of damaged petrochemical plants and refineries around the Houston area.<sup>72</sup> For curbing harmful practices, DOD strives to mitigate air pollution emissions through the transition of fossil fuel usage to more biofuel in ships, aircraft, and vehicles.<sup>73</sup> Additionally, DOD conducts basecamp cleanup, develops alternatives to burning waste in open pits, protects endangered species and wildlife, safeguards natural and cultural resources, and practices noise abatement.

**Land.** The quality of land affects the livelihood and survival of civilian populations as well as the interoperability and protection of military personnel. Pollution and contamination from human practices can intensify land or soil

degradation. Activities such as deforestation, overgrazing, poor sanitation, over salinization, certain types of landfill, and chemical or biological release can lead to desertification, combustible vegetation wildfires, smog and smoke, increased greenhouse gases, severe weather climates, famine and drought, crop failure, poverty, natural resource depletion, unusable and inaccessible terrain, inability to produce foodstuff, and topsoil and vegetation absorption of foreign materials.

In 2011, in support of U.S. Government efforts to the Japanese government, DOD personnel under USPACOM participated in foreign consequence management in the form of radiological response at and around the Fukushima nuclear reactor.<sup>74</sup> Japan continues to clean up and store hazardous material from the accident on land today.<sup>75</sup> Besides disaster relief, DOD provides support against deliberate land degradation perpetrated by retreating forces such as critical industrial infrastructure destruction and scorched earth policies. Pollutants on land can also seep into the ground and contaminate fresh underground water supplies.<sup>76</sup> DOD also trains host-nation security forces on pollution and spill prevention, conservation, and environmental restoration.

At home, DOD leads homeland defense efforts against external threats such as weapons of mass destruction delivered on or from land and supports state and local efforts managed through DSCA.<sup>77</sup> Recently, DOD personnel under USNORTHCOM cooperated with domestic authorities on hurricanes Harvey, Irma, and Maria's response and recovery efforts to rebuild infrastructure, generate power, and institute emergency protective measures.<sup>78</sup> DOD also strives to reduce energy consumption and enhance energy self-sufficiency, such as drawing on local clean energy sources or using solar power during military operations to create technological and equipment efficiencies; promoting green programs and energy initiatives to reduce vehicle reliance on liquid fuels through alternative fuel usage and on-board power;<sup>79</sup> implementing aggressive conservation and efficiency efforts while repurposing energy through

renewable fuels in buildings, facilities, and vehicles;<sup>80</sup> and procuring renewable energy on installations to increase resiliency in the event of commercial grid disruption.<sup>81</sup> DOD also monitors coastal erosion, sinking land, the effects of landfills, threatened and endangered species habitats, regulated sites, and cultural resources.<sup>82</sup> On basecamps and installations, commanders provide oversight of hazardous material, solid waste (garbage), wastewater, storm water, and land-farming of liquid spill management.

**Water.** Naval and maritime forces operate on, under, or above the water to influence results on land.<sup>83</sup> The quality of water is worsened by pollution or contamination from human practices.<sup>84</sup> While water degradation affects potable water access, aquifer protection, legal fishing, or habitats,<sup>85</sup> climate variations can affect frozen waters and Arctic cover resulting in rising sea levels and changing shorelines from melting ice that threaten population centers and water-based military installations. The over pumping of groundwater can also lead to scarcity and depletion.

In USPACOM, DOD personnel supported U.S. Government assistance for the Fukushima nuclear reactor accident in 2011 to mitigate radioactive water leaks from distressing local and maritime environments. In the previous year, DOD personnel under USNORTHCOM reinforced the government's Gulf of Mexico oil spill response with air and logistical support.<sup>86</sup> Within other geographic combatant commands, campaign activities can include building the capacity and resilience of other organizations through events such as oil spill drills<sup>87</sup> and sharing information and best practices to address topics on climate change, coastal erosion, water management, waste management,<sup>88</sup> rising sea levels, storm surges, and installation resource management. At home against deliberate contamination, DOD leads homeland defense efforts against external threats such as weapons of mass destruction delivered from, on or immediately above water. For the Arctic, rising temperatures, melting sea ice, thawing permafrost and shoreline erosion raise

alarms on sea level heights and military training.<sup>89</sup>

While DOD is committed to ensuring safe, secure, and stable water conditions,<sup>90</sup> some situations warrant alarm. First, nuclear reactor accidents at sea and how to respond are real concerns. In 1982, Russia scuttled a radioactive submarine that places today's Arctic maritime environment in jeopardy from radioactive leaks under water.<sup>91</sup> Other examples include coastal installation vulnerabilities from normal wind and high tide flooding, less prevalent rising sea levels generated from ice shelf melting, and storm surges. On DOD's largest naval base Norfolk Naval Station, normal flooding occurs at least once or twice a month due to rising waters and land erosion (also known as sinking land).<sup>92</sup> For curbing harmful practices, DOD seeks to decrease sewage discharge, coastal habitat destruction, impacts to mammals and other wildlife, and clean water scarcity.<sup>93</sup> For alternate energy usage, DOD develops and deploys alternate powered nuclear aircraft carriers and submarines, and their escort ships use advanced biofuel. Deployed assets also perform energy conservation measures during the course of normal operations.<sup>94</sup>

In the remaining physical area of the operational environment known as space, DOD under U.S. Strategic Command manages the DOD Space Surveillance Network to monitor satellites and certain orbital debris. Other campaign activities include atmospheric pollution (for example, rocket launch debris and space litter) observation and its potential threat to Earth. DOD also cooperates and shares responsibilities with NASA for characterizing the contents of the satellite area in space.<sup>95</sup> Additionally, within the information environment, organizations throughout DOD and its U.S. Cyber Command, as well as civilian entities including the independent National Security Agency, defend against cyberspace intrusion that could generate infrastructure damage and remotely trigger catastrophic environmental releases.<sup>96</sup>

Populations care about and depend on clean environments. DOD support to U.S. Government environmental security



By 2025, approximately 1.8 billion people will live in countries with absolute water scarcity, with 3.4 billion people living in countries defined as water-scarce, Manatuto, Timor-Leste, March 20, 2009 (UN/Martine Perret)

efforts will lessen anxieties that inflame root causes of community dissatisfaction and put the legitimacy of governments and regional organizations into question. Although U.S. military forces participate in environmental security efforts, it does not mean that they are immune to the negative effects of the affected environment. In the 2011 Japanese Fukushima nuclear reactor incident, DOD personnel and responder ships suffered lasting contamination effects from radioactive water that emptied in the ocean.<sup>97</sup> While protection is a joint function previously related to military forces that now includes civilians,<sup>98</sup> the forms of slow, rapid, complex, and catastrophic events can lead to forced population movement and most likely generate additional U.S. Government and U.S. military assistance or intervention. To plan for and reduce instability, increase interoperability, and avoid laying the groundwork for any type

of species extinction, combatant commanders and their forces should be ready to support U.S. environmental missions and continue to integrate environmental security-related risk management into normal planning processes and operations. JFQ

#### Notes

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## **JPs Revised (signed within last 6 months)**

- JP 1-05, *Religious Affairs in Joint Operations*
- JP 3-07.3, *Peace Operations*
- JP 3-12, *Cyberspace Operations*
- JP 3-15.1, *Counter-Improvised Explosive Device Operations*
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- JP 3-60, *Joint Targeting*
- JP 4-02, *Joint Health Services*
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# CHARTING A COURSE

Strategic Choices for a New Administration

Edited by R.D. Hooker, Jr.

From NDU Press

Charting a Course:

Strategic Choices for a New Administration

2016 • 396 pp.

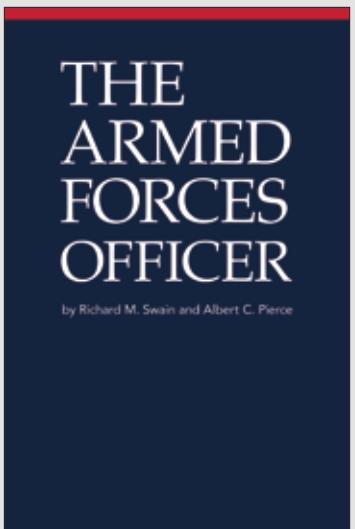
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