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Global Health Engagement

Inside U.S. Cyber Command

American Wolf Packs

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Cover 2 images (top to bottom): Airman from 93rd Air Refueling Squadron prepares to refuel KC-10 Extender during all-female mission held to honor and commemorate Women's History Month, March 13, 2014 (U.S. Air Force/Veronica Montes); Hull Technician grinds piece of metal aboard *Wasp*-class amphibious assault ship USS *Essex* (LHD 2), December 1, 2015 (U.S. Navy/Liam Kennedy); U.S. Army Captain demonstrates side choke during Marine Corps Martial Arts Program course aboard Military Sealift Command joint high-speed vessel USNS *Millinocket* (JHSV 3), July 27, 2015 (U.S. Marine Corps/James Gulliver).

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U.S. Marine Corps Lance Corporal Edward A. McPherson, an AV-8 fixed-wing aircraft mechanic, conducts preflight procedures at south combat aircraft loading area in support of Weapons and Tactics Instructor Course (WTI) 1-16 at Marine Corps Air Station Yuma, Arizona, October 1, 2015 (U.S. Marine Corps/Jorge A. Dimmer)

U.S. Marine Corps General Joseph F. Dunford, Jr., Chairman of the Joint Chiefs of Staff, meets with Servicemembers before USO holiday troop visit at Bagram Air Field, Afghanistan, December 8, 2015 (U.S. Air Force/Robert Cloys)

From the Chairman

Our Force and Our Fight

During my first 90 days as Chairman, I have engaged Soldiers, Marines, Sailors, Airmen, and Coast Guardsmen at all levels. I am confident that our nation has the most professional and capable military in the world. The Joint Force has proved effective and resilient throughout years of combat, kept the homeland safe, and advanced our national interests across the globe. Every day, in every task, our men and women in uniform deliver. But we should expect no credit tomorrow for what we did yesterday.

We must continually adapt to meet current challenges and innovate to develop the capabilities we will need to win future fights. As we do that, we will focus on improving our joint warfighting capability and joint readiness and developing leaders who will be the foundation of Joint Force Next. This contribution to *Joint Force Quarterly* is intended to provide some initial thoughts regarding these three priorities.

In the months ahead, my intent is to use this space to share thoughts about where we are headed, while generating an open dialogue that will allow us to fully leverage the insights and ideas of leaders across the Joint Force.

Improving Our Joint Warfighting Capability

The strategic landscape is characterized by complexity, uncertainty, and rapid change. While the nature of war is enduring, the character of war today is extraordinarily dynamic. Information operations, cyber, space and counterspace capabilities, and ballistic missile technology are among the true game changers on the modern battlefield. Both state and nonstate actors are constantly looking for ways to harness such capabilities in order to avoid our strengths and exploit our vulnerabilities.

This dynamic has significant implications for how we will fight, and makes it probable that future conflicts will most often be transregional and fought across multiple domains and functions. Driven by this assumption, one of my highest warfighting priorities is to improve our

ability to integrate joint capabilities in a transregional, multidomain, and multifunctional fight. From my perspective, our current organizational and command and control constructs are optimized neither for the current fight nor for the challenges we will confront in the future.

Whether we are confronting state or nonstate actors, we must be able to quickly and decisively bring to bear the full weight of the Joint Force. Collaboration and cooperation across regions, domains, or functions is not enough. We must achieve true integration. The Joint Staff will lead an effort to further frame and tackle this challenge.

Joint Readiness

A ready Joint Force is one that can effectively meet the steady-state requirements of the combatant commanders, deter our adversaries, and respond decisively in the event of a contingency. A comprehensive approach to joint readiness requires that we focus on the traditional metrics associated with unit readiness while also assessing and adjusting our posture to deliver joint capabilities where it matters, when it matters.

The Secretary of Defense, supported by the Joint Staff, determines the right inventory of Service capabilities and capacities to meet our national security requirements across the range of military operations. The Secretary also determines how the force is best postured to support our defense strategy. The Services, in turn, must focus on ensuring that units are properly led, trained, organized, and equipped. When assessing joint readiness, we must consider all three of these elements.

One combatant commander has suggested the term *comprehensive joint readiness* to describe a holistic view of the relationship between unit readiness, the Joint Force inventory, and the posture of the Joint Force. This is how we will define joint readiness in the future. We will refine our readiness processes and metrics to ensure that we maintain the right balance of unit readiness, the right inventory of joint capabilities, and the optimal posture in support of our defense and national military strategies.

Develop Leaders for Joint Force Next

The men and women of the all-volunteer force are our true competitive advantage and greatest asset. The future operating environment will place new demands on leaders at all levels. To best prepare our future leaders for success, we must continuously assess and refine our leader development. The Joint Staff will lead an effort to define the qualities and characteristics of the leaders we will need in the Joint Force Next. This study will inform how we will select, train, educate, and manage the talent of tomorrow's leaders.

Our Mutual Responsibilities

Meeting the challenges of today's dynamic and demanding operating environment while preparing the Joint Force to win future fights will be a team effort. To be successful, we must harness the intellect, insights, and innovative ideas from men and women across the Joint Force. I have an obligation to encourage and energize the dialogue. We all have an obligation to contribute—it is our force and our fight.

In closing, it is an honor to serve as your Chairman, and I look forward to hearing from you.

General Joseph F. Dunford, Jr.
Chairman of the Joint Chiefs of Staff

General John R. Galvin, NATO's Supreme Allied Commander, Europe, takes part in farewell ceremony in honor of troops of 1st Infantry Division, 1991 (DOD/Edward Pillars)

Executive Summary

As we publish this 80th issue of *Joint Force Quarterly*, we mark the transition of two of our biggest supporters and best commentators, the 18th Chairman of the Joint Chiefs of Staff, General Martin E. Dempsey, and the Senior Enlisted Advisor to the Chairman of the Joint Chiefs of Staff, Sergeant Major Bryan B. Battaglia, USMC. Each provided us with important insights about the joint force and should take great credit for and pride in stewarding two important and popular NDU Press books, *Lessons Encountered: Learning from the Long War* (2015) and *The Noncommissioned Officer and Petty Officer: Backbone of the Armed Forces* (2013). We wish them well in their future lives as we welcome the 19th Chairman of the Joint Chiefs of Staff, General Joseph F. Dunford, Jr., and the Senior Enlisted Advisor to the Chairman, Sergeant Major John W. Troxell, USA, to the front of the joint force and *JFQ* team.

When the present is in such a state of flux that even a dim light of understanding seems improbable, I find myself turning to nonfiction accounts of lives lived and the events the people found themselves navigating. One such account, *Fighting the Cold War: A Soldier's Memoir* by former Supreme Allied Commander Europe (SACEUR) General John "Jack" Galvin, USA (Ret.), is reviewed in this issue's Book Reviews section. General Galvin was SACEUR and commander of U.S. European Command from 1987 until his retirement in 1992. I was lucky enough to know him while an aide to his chief of staff, and he offered this junior officer a brief glimpse of the power and grace of a military officer whose service was remarkable. Few senior officers in the Nation's history have had to lead in such a period as that during the end of the Cold War. Without question, General Galvin was *the* right leader in the right place at the right time. You do not have to take my word for it, but this is a life every serving officer should learn from.

For two reasons alone—leadership by example and thinking about the future of the military—I recommend his book to the joint force. In keeping with General Galvin's example of thinking about the way ahead, I believe this issue of *JFQ* offers articles that provide a number of interesting ideas about how efforts before, during, and after warfighting can advance the joint force toward learning and applying those lessons he describes.

As we continue in a postcombat phase for U.S. forces in Afghanistan, our Forum section provides two articles with firsthand insights on where we are headed and two articles that suggest how the United States can more effectively help our partners who are in similar circumstances as the Afghans. First, there is an assessment of U.S. performance in Afghanistan by Richard Outzen, a senior military fellow in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, who was asked by the theater commander to evaluate the current situation and progress there. Aaron Tucker and Aimal Pacha Sayedi describe how the U.S. advisor effort to help the Afghans build an air force is one success story from the conflict with applicability to other partner nations. Discussing an important mission that can bolster the local forces' ability to meet their mission, Thomas Ross outlines how to plan for fielding capability packages that allow effective security cooperation.

More than a year ago, I was approached by two of our authors, Aizen Marrogi and his colleague Edwin Burkett, both military doctors with extensive backgrounds in providing medical support around the world, and asked to consider global health engagement as a *JFQ* theme. Our Special Feature section provides the first set of discussions from their efforts to broaden joint force awareness of the role health care plays not only in military operations but also as a part of our national contribution to international peace and stability operations.

Our JPME Today section offers a mix of ideas from students and practitioners, two on jointness and one on warfare. Considering the traditional three levels of war most commonly discussed in school (strategic to operational to tactical), Michael Matheny makes the case for adding another level between operational and strategic. Brent French tackles the issue of how to help the Reserve Component achieve jointness.

Continuing our efforts to give you access to the most senior joint leaders in our military, our Commentary section has my interview with Admiral Michael Rogers, commander of U.S. Cyber Command, director of the National Security Agency, and chief of the Central Security Service. Accompanying the interview is a summary article that helps explain how U.S. Cyber Command is developing and working to meet its mission of defending our networks and beyond. Aundre Piggee and his co-authors—leaders from the joint team responsible for the retrograde operations that ended Operation *Enduring Freedom* in Afghanistan—discuss their observations from a successful and complex effort.

In the Features section, four articles provide updates on how to deal with a range of uncertainty facing the joint force. U.S. Special Forces Commander General Joseph Votel, USA, and his co-authors discuss how unconventional warfare can effectively be used to work conflicts within the "gray zone," or places between peace and war. Returning *JFQ* author John Morton focuses on the evolving joint integration capabilities of Aegis-equipped warships in pursuit of integrated air and missile defense. Thinking on the offense side of this missile defense problem, Mark Vinson and John Caldwell help us understand the state of play on violent nonstate groups seeking to acquire and field missile technologies. Sarah Mussoni, Gert-Jan de Vreede, and Alfred Buckles suggest ways and techniques associated with better collaborative planning as a means to help those in that business develop more effective plans for all our joint operations.

In the Recall section, F.G. Hoffman, one of our nation's leading thinkers on warfare, writes about World War II submarine warfare and shows how successful adaptation to the threat environment is something the United States has done successfully for a long time. Three outstanding book reviews follow.

Our Joint Doctrine section has two important articles to consider. Following our global health engagement discussion, a Joint Staff–interagency team brings us the second in their series of pieces on Interorganizational Cooperation. James McArthur and his co-authors take a look at the humanitarian aspect of getting to a whole-of-government approach. Next, speaking to what he sees as a gap in existing joint doctrine, Marc Tranchemontagne describes our current state of affairs in countering improvised explosive devices and offers suggestions on how to solve the problem. As always, we round out this issue with the Joint Staff J7 joint doctrine update.

If you find our articles about warfare, global health engagement, joint planning, joint doctrine, or emerging threats interesting and would like to write a few words of your own, or if you have important thoughts to share with the joint force, please let us hear from you. When a leader like Jack Galvin saw or thought of something important, he passed it on. *JFQ* is dedicated to helping you do just that. **JFQ**

William T. Eliason
Editor in Chief

Joint Force Quarterly is published by the National Defense University Press for the Chairman of the Joint Chiefs of Staff. *JFQ* is the Chairman's flagship joint military and security studies journal designed to inform members of the U.S. Armed Forces, allies, and other partners on joint and integrated operations; national security policy and strategy; efforts to combat terrorism; homeland security; and developments in training and joint professional military education to transform America's military and security apparatus to meet tomorrow's challenges better while protecting freedom today. All published articles have been vetted through a peer-review process and cleared by the Defense Office of Prepublication and Security Review.

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ANA 205th Corps Commander Brigadier General Dawood Shah Wafadar and Train, Advise, and Assist Command–South Commander U.S. Army Brigadier General Paul Bontrager conduct aerial battlefield familiarization flight in southern Afghanistan, August 4, 2015 (DOD/ Kristine Volk)

Eight Signs Our Afghan Efforts Are Working

By Richard H.M. Outzen

As the defense attaché tasked with reopening the U.S. Defense Attaché Office in Kabul, Afghanistan, beginning in late 2014, I had the opportunity to watch "fighting season 2015" unfold from a proximate vantage point.[1] I returned with the impression that Afghanistan is better than it might have been—and stable enough to warrant continued investment. In this article, I contend that the high level of American (and Western) pessimism regarding Afghanistan's security status deserves reexamination. I offer some thoughts on why pessimism has come to dominate policy debates on Afghanistan, as well as observations on the realities of Afghanistan in 2014–2015 that merit balanced reassessment. I then conclude with eight observations that provide some basis for optimism for 2016 and beyond.

It is not unfair for analysts to point out that Afghanistan has had its share of dark days in 2015, including those of August 7–8 when a trio of attacks

Colonel Richard H.M. Outzen, USA, is a Senior Military Fellow in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University.

in Kabul left 48 people dead and more than 300 injured, and the Taliban seizure of Kunduz City for several days in early autumn.[2] Yet given generally pessimistic assessments of how ready the Afghan government and security forces were to survive the departure of most Western troops at the beginning of the year, it is fair to state that, from a U.S. perspective, the worst outcomes have not materialized. Based on the 2015 fighting season—a long one, since the Afghan National Defense and Security Forces (ANDSF) opened it with major operations in February and March—it appears that Afghanistan is stable enough to create space for political progress and that the sustained partnership may suffice to keep it so. There are trends and signs of growth, outlined below, that mark this as a watershed when compared to the past decade. While it is possible that economic and political efforts may lag behind relative progress in the realm of security—perhaps enough to undo that progress over time—there is reason for guarded optimism as 2016 begins.

Dire Predictions

The U.S. Intelligence Community and segments of the media have been consistently pessimistic in recent years regarding the prospects for stability in Afghanistan after coalition drawdown. The persistent tone of this skepticism seems to have been established in gloomy National Intelligence Estimates (NIEs) of 2008 and 2010.[3] The late-2013 NIE reportedly went even further, setting a tone of expected failure that would persist throughout 2014 and into 2015, despite significant political and operational changes in Afghanistan during that time. The *Washington Post* described the 2013 version:

A new American intelligence assessment on the Afghan war predicts that the gains the United States and its allies have made during the past three years are likely to have been significantly eroded by 2017, even if Washington leaves behind a few thousand troops and continues bankrolling the impoverished nation, according to officials familiar with the report.

The National Intelligence Estimate, which includes input from the country's 16 intelligence agencies, predicts that the Taliban and other power brokers will become increasingly influential as the United States winds down its longest war in history, according to officials who have read the classified report or received briefings on its conclusions. The grim outlook is fueling a policy debate inside the Obama administration about the steps it should take over the next year as the U.S. military draws down its remaining troops.[4]

Pessimism was echoed in the public sphere as well. Stephen Biddle of the Council on Foreign Relations argued, for instance, that the ultimate failure of the Afghan forces was so certain that the United States would be best served to either cut a deal with the Taliban sooner rather than later or to end its participation altogether.[5] Former U.S. Ambassador Karl Eikenberry described American counterinsurgency in Afghanistan as an unequivocal failure, and lumped it together with Vietnam as another failed effort.[6] Some who defend continued serious U.S. involvement in Afghanistan, such as Anthony Cordesman at the Center for Strategic and International Studies, have also expressed deep misgivings about the readiness of the ANDSF and the cohesiveness of the Afghan government.[7] Negative assessments were also widespread among both Afghans and foreign officials within Afghanistan.[8] These projections reflected the concerns and dynamics of late 2013 and 2014, but are overdue for assessment in light of the past year's developments.

Policy critics raised valid concerns, and the absence of catastrophe this year neither invalidates those particular concerns nor precludes dramatic deterioration in the future. Furthermore, the clear developmental gaps in Afghan security forces and institutions are not a matter of debate or interpolation; they are facts.[9] One fighting season during which a largely independent ANDSF survives does not clear the slate. It does, however, indicate that worst-case planning for Afghanistan increasingly looks like remote-case planning, and that U.S. policymakers should take note of the changed trajectory as they consider the costs and benefits of sustained investment there.

What the Numbers Don't Say

Judgments about progress in the Afghan conflict come with the caveat that unclassified information is less abundant and comprehensive than was once the case. From 2009 through 2014, a variety of statistical parameters were tracked and published in unclassified form under Section 1230 of Public Law 110-181 (the so-called 1230 reports).[10] These reports were issued semi-annually, but military reporting was criticized as decreasingly transparent after 2011, and in 2013 the International Security Assistance Force headquarters had to retract some data it had used in previous years to assert progress in the campaign.[11] Since that time, public data have become less abundant and less comprehensive. The Intelligence Community, the U.S. Embassy in Kabul, and the headquarters for Operation *Resolute Support* continue to collect data related to overall security, but their products are not generally accessible to the public.[12] Perhaps the best, most consistently available set of security-related data is that compiled by the Special Inspector General for Afghan Reconstruction (SIGAR), a watchdog body that studies the impacts of U.S. civil and military assistance and includes non-U.S. data in its reports. Appearances before Congress or think tanks by *Resolute Support* senior leaders provide some amplifying data, as do occasional publications from the Afghanistan Analysts Network, the International Crisis Group, and other research organizations with focused efforts there. Although the amount of public reporting provided by the Department of Defense (DOD) has declined, Section 1225 of the National Defense Authorization Act (NDAA) for 2015 still requires a semi-annual report to Congress that remains a valuable source of information. Together, these data sets reflect continued high levels of violence in 2015, and in some cases troubling

Afghan National Policemen take break between explosive ordnance disposal and IED defeat classes at ANP Central Training Center–Kabul (DOD/Charity Edgar)

security trends, but no evidence yet of dramatic deterioration of either the government's ability to govern or the ANDSF to fight. The numbers are striking in what they do *not* say—that despite the intentions of the Taliban and the fears of many observers, security in Afghanistan did not spiral out of control in 2015.

During late 2014 and early 2015, the pattern of overall violence in Afghanistan conformed to the seasonal norms of previous years: a drop in insurgent attacks in fall and winter, an increase in spring, and a peak in the summer.[13] SIGAR comparison of violent incidents per day in late 2014 and early 2015 found a slight decrease September through November 2014, a 10 percent increase December 2014 through February 2015, and a 6 percent increase from February through April 2015, compared to the same periods a year prior. Summer 2015 data showed nearly a 5 percent drop from the previous year, impacted by Ramadan and insurgent infighting.[14] The fighting has been bloody on both sides, and the government has lost control of nearly a dozen district centers for varying periods of time. Many of those districts, however, have been de facto beyond government control for most of the past decade, and most of the district centers that insurgents occupied came back under government control within days.[15] Insurgents briefly held one provincial center (Kunduz), but they were driven out without having consolidated control over new or large areas. Theirs remains for the most part a hit-and-run fight, in a small number of cases a hit-linger-and-run affair.

DOD reporting to Congress indicates that, on a national basis, violence across Afghanistan was down in 2015 compared to 2014 for much of the year. Violence has decreased in the southern, eastern, and western regions of the country, while increasing in the north. Violence in Kabul has also increased, a reflection of the fact that with foreign troops gone from much of the country, insurgents have begun to focus their attention more on the capital.[16] The nature of the fighting has changed with the reduction of foreign troops and the increased advisory emphasis on Afghan forces aggressively pursuing the insurgents. With the exceptions of self-defense and certain predesignated global terror targets, *only* the ANDSF are now in fact authorized to engage in combat operations. This has led to a 59 percent increase in ANDSF casualties, a rise as predictable as it is concerning.[17] While it is fair to say security conditions worsened in the latter half of 2015 as insurgents strove to show that ANDSF cannot secure the country on its own, it is unclear how long insurgents can maintain their level of support and effort when, at the end of 2015, they still could not take and hold population centers from government forces.[18]

The United Nations (UN) also tracks statistics related to insurgent attacks and overall violence in Afghanistan, primarily for its project related to protection of civilians in conflict areas. These statistics help feed both semi-annual reports to the Security Council on protection of civilians and to the Secretary General's periodic comprehensive reports on Afghanistan. UN numbers show a continuation into 2015 of the generally high levels of violence seen in 2014, and at some points increasing up to 10 percent. Summer fighting decreased overall by 4.6 percent compared to 2014.[19] In the fall, insurgents launched 19 percent more attacks overall than they did the year prior, although the increase in effective (casualty-causing) attacks was a more modest 4 percent.[20] UN reports note that the high levels of violence had several contributing causes (for example, mild weather and the ANDSF initiating more operations). They also note that following periods of increased violence, levels dropped in response to ANDSF operations.[21]

What we are left with at the beginning of 2016 is a mixed picture: Afghanistan remains a violent and volatile country, facing steep challenges with imperfect tools. Given the incomplete nature of available data, observations from the field—admittedly anecdotal—can help round out public understanding of the current situation on the ground. Especially in the context of rapidly deteriorating crises in Syria, Iraq, and Yemen, Afghanistan in 2015 looks like a relative success and gives reason to think more progress is in store.

I finished my tour in Kabul in the late summer of 2015 as one convinced that this progress is feasible. My convictions come from signs I saw within the Afghan government, in its security forces, and in Afghanistan's evolving relationship with Pakistan. Here are eight observations based on my time there that provide a basis for optimism in 2016 and beyond.

The Observations

We Have a Committed Partner in the Afghan Palace. Americans who served in Afghanistan during the tenure of President Hamid Karzai find Ashraf Ghani, seated in October 2014, a more serious and committed partner. The National Unity Government (NUG) agenda is consistent with major American national interests for Afghanistan: sustained bilateral partnership, reduced corruption, and a definitive end to the insurgencies. President Ghani spent much of his adult life in the United States, has written extensively on anticorruption programs, and has founded a nongovernmental organization dedicated to strengthening weak states.[22] Ghani and his chief executive Abdullah Abdullah have begun to improve governance and international confidence, and have proved more willing than Karzai to try and work with Pakistan in matters of security.[23] Admittedly, there are warning signs of serious internal dysfunction: Ghani's temper, his alleged favoritism toward Pashtuns in security ministry assignments and corruption investigations, and his penchant for micromanagement are examples.[24]

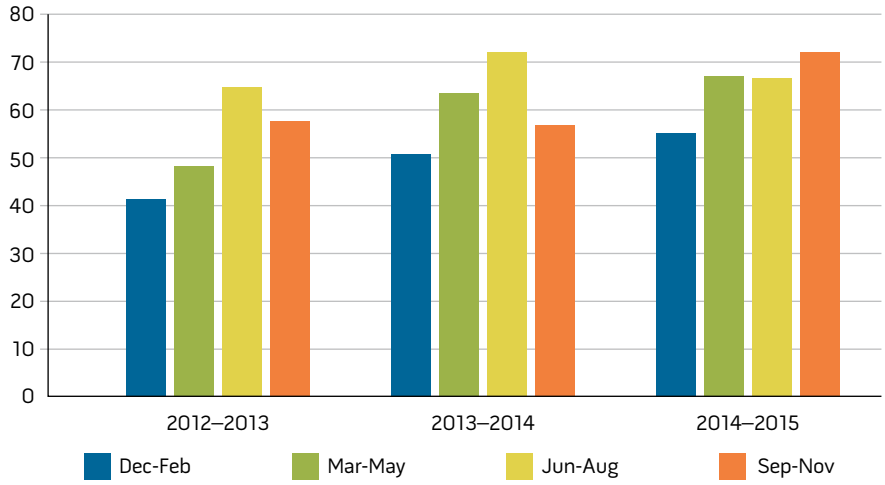
Tensions within the NUG are rife. Gradually, however, key appointments have been made and actual governance begun. As Commander of Operation *Resolute Support* General John Campbell, USA, has pointed out, predictions that the NUG would fail in its first year were frequently heard, but did not come to pass.[25] The advent of the NUG and Ghani's signing of the Bilateral Security Agreement ended the era of mutual mistrust and recrimination between the Afghan government and its closest backers—a huge and positive change from the preceding years.

The U.S.-Afghan partnership is also well served by the current healthy state of the American military-civilian team in Kabul. The current Ambassador and the *Resolute Support* commander consult frequently, support mutually, and have linked their teams in a close and coordinated manner to support Afghan counterparts. This has not always been the case over the past decade.[26]

ANDSF Is Surviving and Maturing, Albeit Unevenly. The shortcomings of the Afghan forces and security institutions are too many, and too serious, to dismiss. But those forces are not collapsing, and there are pockets of true excellence developing. These include special units within both the Ministry of Defense (special operations forces *Kandaks* and *Kita-e Khas*) and the Ministry of Interior (crisis response units); military intelligence, which has greatly expanded collection and analytical capabilities; and the Special Mission Wing, which originated under the Interior Ministry but now supports the special operations of both ministries. Afghan artillery has shown its worth—especially the D-30 howitzers—providing effective fire support in remote areas. Challenges remain in keeping them operational and resupplied in a timely manner. Afghan commanders and staff are developing the ability to plan and coordinate multicorps operations with combined arms in various parts of the country. These operations have not been perfect: sequential not simultaneous, disruptive rather than decisive to the insurgents, and requiring the heavy involvement of senior Afghan officers and international mentors. That they occurred at all is indicative of a dramatic increase in ANDSF capabilities, though, and a key indicator of increasing professionalism.

Advisors have praised increasing self-sufficiency in previous years, but in 2015 the metaphorical safety net (combat enablers) provided by those advisors shrank, making this the first substantively independent test. Difficulties persist in the areas of logistics distribution systems, tactical mobility, and indigenous air support, among others. The ability of the Afghan government and security forces to improve quickly enough to sustain Western confidence remains an open question over the medium term. In 2015 the improvement was unmistakable, even during events as challenging as the August Kabul bombings: "Afghan security forces handled three complex emergencies almost simultaneously, proving perhaps that training of Afghan forces has paid off. . . . In none of the three attacks, scattered widely around the capital, did the insurgents manage to breach their targets' inner defenses. Most of the victims were outside the walls, either passersby or defenders at the gates."[27]

Figure 1. Security Incidents Per Day, 2013–2015



Formal assessment of the fighting in 2015 has stretched into early 2016, but by late summer the overall trend was clear:

This year, the Taliban have advanced in some contested rural districts. . . . But the insurgency can't boast of spectacular victories that changed the course of the war. All of Afghanistan's 34 provincial capitals remain in government hands, as does the vast majority of district headquarters. Overall levels of violence, according to Afghan and U.S. military officials, are comparable to last year's. This ability to maintain the precarious status quo even after more than 120,000 U.S.-led coalition troops have departed the country represents, by itself, an important achievement.[28]

Engagements between ANDSF and the insurgents in 2015 basically followed one of three patterns. The first consisted of large (multibattalion), fairly complex, well-scripted, and coached operations involving multiple services and corps. Such operations were conducted in northern Helmand, Zabul-Ghazni, the "iron triangle" of Azrah-Hesarak-Surobi, and elsewhere. These operations did not have lasting effects on the target areas—that will take time and better government provision of services—but they disrupted insurgent operations and prevented them from consolidating control over many rural districts. The second type of fighting was the cat-and-mouse game over ANDSF checkpoints (occasionally district and in one case a provincial center), with insurgents grouping to attack weakly guarded areas before fleeing the advance of reinforcements. The third and least-publicized type of fighting was the steady drumbeat of small, intelligence-driven raids against select targets, typically more senior leaders or imminent terror threats. While the second type of fight (the checkpoint fights) inflicted serious casualties and made frequent headlines, the other patterns kept the insurgents off balance and inflicted serious damage on their leaders and units in the field. ANDSF still suffer many shortcomings, institutionally and operationally: supply distribution must improve, checkpoints must be consolidated, mobility and air power are immature, and intelligence-sharing must occur with greater speed and reach.[29] Senior ANDSF leaders understand the areas of weakness and (assuming continued external advice and support) have every intention of resolving them.[30] Given the serious shift in responsibilities from coalition to ANDSF this year, it has been a performance that gives cause for optimism.

ANDSF Attrition Is Serious but Manageable. The Afghan National Army, National Police, and National Directorate of Security fought hard and suffered significant casualties in 2015 as they had in 2014, but the result was concern, not crisis, for both the Afghan government and the Afghan public. It is true that attrition reached troubling levels early in the year—4,000 security force members per month. It bears mentioning, though, that the 4,000 figure represents not only battle deaths, but also all losses (including Absent Without Leave and Dropped from Rolls [DFR]; in other words, those who chose or were compelled to leave service). The single largest component of attrition is DFR, and observers consider it sensitive to improvements in soldier quality of life and leadership.[31] We must also consider that casualties and attrition *should* trend up as operational tempo (OPTEMPO) increases. This occurred in 2014, and the high 2015 numbers are a continuation of that trend. The factors driving the trend are not mysterious, nor are they an indicator of insurgent success per se: "the combination of an increased OPTEMPO, assumption of greater security responsibilities, drawdown of coalition forces, and an aggressive pursuit of the insurgency have all contributed to the increase in casualty rates."[32] Concerns about the sustainability of the ANDSF, given higher casualties and attrition, have been raised by qualified observers, but this has more to do with factors within Afghan control—that is, how they recruit and retain soldiers—than it does with enemy effectiveness.[33] General Campbell has pointed out that 5 to 7 percent higher casualties during a four-fold increase in operations are not an indicator that attrition is impacting combat readiness and that young Afghans are still signing up to fight.[34] He has also denied that the current casualty and attrition rates are unsustainable if ANDSF leaders give priority to remedying those factors they can control.[35]

Resolute Support leaders and the Afghan security ministries have indeed focused effort on understanding and remedying the causes of force attrition, and the rates dropped over the course of 2015. By May 2015 the Afghan National Army (ANA) monthly average attrition rate stood at 2.3 percent, compared with 2.55 percent in January 2015 and well down from the average rates in 2013 and 2014 of 3.52 percent and 3.62 percent, respectively. The Afghan National Police

average monthly attrition also dropped from January to May of last year, from 1.64 percent to 1.56 percent.[36] Overall ANDSF force levels rose over the course of the fighting season. Once the intake and training of new recruits pick up in the fall and winter months, it should be possible to further close the gap between authorized force levels and the number actually serving. The perspective provided by one former senior security official is worth remembering. The Soviet-backed Afghan army survived and grew during the 1980s while suffering 2,000 battle deaths per year on a population base of 12 million; the ANA is suffering roughly 2,000 per year on a base of 31 million. Each death is regrettable and tragic, but in a society accustomed to its young men fighting and dying, such numbers are far from unsustainable.[37] Senior Afghan leaders, including Minister of Interior Noor-ul-Haq Olomi, have similarly assessed that the losses are tragic, but do not constitute a crisis.[38] Afghans take casualty reports with a great deal more equanimity than do Western observers, meaning that in political as well as demographic terms the numbers are sustainable.

Afghans Are Adapting to a Resource-Constrained Environment. During my time in Kabul, I witnessed the Afghans adapting to a more constrained resource environment in which Western aid was less freely given. Afghans are adapting, both fiscally and operationally. While difficult, over the long term the adjustments made in the Afghan government and in society will boost both accountability and donor confidence, and, through this, the sustainability of long-term aid. Discipline in security-related budgeting and expenditure has been greatly enhanced since late 2014 through the introduction of conditionality measures by Combined Security Transition Command–Afghanistan (CSTC-A). CSTC-A Commander Major General Todd Semonite, USA, has instituted a system of Letters of Commitment, through which ANDSF leaders acknowledge the purpose and proper usage of funds.[39]

Corruption has been attacked through an aggressive series of investigations and reforms, including the institution of palace-level review of virtually all government contracts and the suspension of senior officers associated with a corrupt fuel contract signed just before President Ghani took office.[40] The abuse of funds through inflated personnel strength reporting has been addressed through implementation of an Automated Human Resources Information Management System that will be tied to payment of salary and allowances.[41]

Afghan national police officer prepares to accompany members of Kunar PRT on foot patrol through downtown Asadabad (U.S. Air Force/Nicholas Mercurio)

Meanwhile, *Resolute Support* advisory efforts have shifted focus from the field to the ministerial level, and have reorganized along functional lines to better focus on transparency, force generation, and effective resource management across ANDSF agencies.[42] At the field/operational level, the Afghans have had to adjust to the absence of coalition advisors in formations below the corps level and to less robust close air support and other combat enablers. This has led to some degree of frustration in the ANDSF and legitimate debate about how much battlefield risk should be incurred in the drive to make it self-sufficient. On the positive side, the Afghans have become quite good at operating some of their own support platforms, especially Mi-17 helicopters and D-30 howitzers.[43] Afghan political and military leaders appear committed to making the efficient use of available resources part of their organizational culture.

The Insurgents Have Serious Problems, Too. The year 2015 was a hard year for the Taliban and other insurgent groups. The death of Mullah Mohammed Omar, the accepted leader of the Taliban, was confirmed during the summer. Suspicions that he was dead hindered Taliban unity prior to the public announcement, and infighting over who should succeed him hampered unity in the field thereafter:

Mansour was Omar's deputy. Many commanders were outraged that Mansour concealed news of Omar's death for more than two years and boycotted the meeting that appointed him. Mansour said the deception ensured Taliban unity amid the 2014 withdrawal of NATO [North Atlantic Treaty Organization] *troops. . . . Small skirmishes over the leadership have already begun, some Taliban say.*[44]

As 2015 wore on, the Taliban also had to worry about radical elements claiming affiliation with the Islamic State in Khorasan, which challenged them with both physical and rhetorical attacks. This "red on red" fighting occurred in several parts of the country and effectively presented the Taliban

Dand District governor talks with U.S. Army deputy commander of Train, Advise, and Assist Command–South (left) and interpreter at Kandahar Airfield security shura, June 27, 2015 (DOD/Kristine Volk)

with a two-front war.[45] It is also worth noting that ANDSF-reported insurgent casualties were roughly three to four times higher in 2015 than the year prior; while such numbers tend toward exaggeration, United Nations reporting based on Taliban documents showed a steep rise in their casualties in 2013, and these losses can only have increased with the rise in overall incidents in 2014–2015.[46] Pakistan has moved more seriously against terrorist activity on its territory, including scaling back support to at least some Afghan insurgents in the wake of the deadly attack on a school in Peshawar in December 2014.[47] This has led to a more serious and sustained series of discussions involving officials from Pakistan and Afghanistan regarding political reconciliation between the Taliban and the Afghan government.[48] The talks have yet to produce substantive steps to end the conflict, but have improved mutual understanding and may lead to solid progress. Afghan and Western counterparts may still mistrust Pakistan's Inter-Services Intelligence, but some have come to believe Pakistan Chief of Army Staff Raheel Sharif is sincere in his desire to rein in militants. In any case, Pakistani analysts have recognized that the departure of most U.S. troops, coupled with the more accommodating policies of Ghani, present Islamabad the opportunity to rebalance its approach in ways that help stabilize both its neighbor and itself.[49]

Kabul Is Thriving: More Modern and Cosmopolitan and Still Relatively Secure. It may be hard to notice for observers who have not stayed in Kabul for extended stays separated by an interval of some years, but dramatic changes have taken place in the Afghan capital over the past decade. The routine availability of electricity and telecommunications access ranks high on the list, given the transformative effects that access has on education, political participation, and economic activity. Kabul is now home to roughly 4 million Afghans of all ethnic groups and is producing a generation of young Afghans accustomed to schooling, following global issues, and interacting daily with people from other parts of the country (or other countries). Insurgent attacks still occur, and will continue. In short bursts of activity (late November 2014, early August 2015), attacks in Kabul spike from time to time. After a rise in intensity in late 2014, though, overall attacks in Kabul in 2015 have remained steady.[50] With the coalition presence increasingly limited to Kabul and its environs, it follows that insurgents will increasingly focus their attacks there.

John Kerry listens as Afghan presidential candidate Ashraf Ghani addresses reporters at UN Mission Headquarters in Kabul, Afghanistan, July 2014 (State Department)

It is notable then that insurgents only rarely manage to successfully target coalition troops, that they kill far more Afghan civilians than they do foreign troops, and that they remain the primary threat to Afghan civilians.[51] While as noted the Afghans are rather inured to such casualties, over time they will increasingly damage insurgent narratives of defending the country and its people from foreign occupation. The bottom line is that if insurgents could not seriously shake Kabul in 2015, it is hard to see how they will be better positioned to do so in subsequent years, as the unity government and ANDSF mature further.

The Neighbors May Be Nervous Enough to Work Together. The drawdown of U.S. troops in Afghanistan has created both uncertainty and opportunity for Pakistan, China, Russia, and Iran. Against the backdrop of worsening relations with the West, Russia has motive and opportunity in Afghanistan to maintain some level of cooperation and communication with the United States and its NATO partners.[52] The Chinese, anxious to protect economic opportunities and to get a handle on the grave problem of a radical Islamist safe haven in Afghanistan that stokes China's Uighur insurgent problem, are expanding engagement with the Afghan government. More importantly, they are pressing Pakistan to do all they can to secure a negotiated settlement with the Taliban.[53] In the wake of both the U.S. drawdown and the Iranian nuclear deal, Afghanistan stands to benefit substantially from increased regional investment by Iran and perhaps also from tacit U.S.-Iranian cooperation within Afghanistan.[54] Pakistan seems increasingly reconciled to the fact that the Taliban will not rule Afghanistan, that the costs of large-scale support or toleration of insurgent groups are decreasingly justifiable, and that some form of political participation in Kabul by the Taliban and those they represent is the most desirable outcome.[55] They may hedge their bets, but seem inclined to significantly reduce their investment in insurgency. The fortuitous combination of Karzai's departure and the reduction of the U.S. military presence in Afghanistan has created space for improved cooperation between Western donors and these neighboring states, whose goals seem more aligned now. The breadth and size of Kabul's military diplomatic community—especially the robust attaché contingents from these neighboring states—reflect an enhanced readiness for dialogue.

The Biggest Variable Determining Afghanistan's Fate Remains Our Commitment. An Afghan general who

President Ashraf Ghani addresses members of Afghan National Army Special Operations Command during visit to Camp Commando, Afghanistan, October 6, 2014 (U.S. Army/Daniel Shapiro)

works closely with Western counterparts opened a meeting in early 2015 by stating, "Now I know you Americans have lost all interest in Afghanistan, but there remain for us a few matters to discuss." He was only half-joking; many Afghans feared that with major crises in Syria, Iraq, and Yemen, the United States had largely ceased paying attention to Afghanistan and was interested only in reducing resource commitments. This would be unfortunate, for the trajectory of recent events in Afghanistan shows far more positive trends than we find in other crisis spots across the region. Afghanistan's starting point in 2001 for security, development, and governance was so low that even given the significant progress achieved to date, the remaining challenges are significant and the chance of failure real. With a continued investment of moderate scope—both in years and in billions of dollars—the United States can buy down that risk of failure and end up with a stable state in Afghanistan.

The army of the Democratic Republic of Afghanistan fought effectively for several years after the withdrawal of Soviet troops—in fact, only with the collapse of the Soviet Union and the end of assistance funding did they fail.[56] Similarly, between 1972 and 1975 American military assistance to South Vietnam was cut from $2.8 billion to $700 million, and then down to $300 million; by 1975 their army collapsed.[57] The lesson is clear: having left an army that can and will fight, the United States and other Western donors need to ponder further cuts and drawdowns in a gradual manner.

Current U.S. assistance levels of roughly $4 billion per year in security assistance and $2 billion more in economic assistance are significant costs, and rightfully should curtail over time.[58] The return on that significant investment has been dramatic in terms of social and developmental progress, leading many foreign policy analysts to call for patience in sustaining the effort.[59] There is no push from the U.S. public or policymakers to ramp down that funding, at least not yet. Conversely, there has been pressure to quickly reduce the number of U.S. troops advising and administering assistance to the Afghans. The pressure was largely self-imposed; U.S. policymakers set a goal of 1,000 troops or fewer by 2017, despite the absence of any pressure from the American public or the people or government of Afghanistan to do so.[60] In a sense this reflects the logic of the Karzai years in Afghanistan, with declining trust and declining mutual confidence between U.S. and Afghan leadership.

A year into Ghani's tenure, with a year's worth of fighting and proven viability, the Obama administration appears to have recognized the need to critically reassess the assumptions that were driving the steady decrease in forces. This

pragmatic approach should be applauded and sustained. The brief occupation of a provincial capital (Kunduz) by insurgents presented a pointed reminder that Afghanistan is fragile enough to warrant sustaining a significant commitment in terms of deployed U.S. and allied forces. More importantly, the demonstrated ability of the Afghan forces to stand and fight in 2015 showed that our continued investment is not lost on a hopeless cause; the Afghans are getting better as their share of the work grows. Indeed, there will be costs associated with maintaining our financial and troop commitments at or near current levels for a decade or more. The costs of state collapse or radical takeover would undoubtedly be higher still.[61] Credible observers have called for a significant increase in troops from the current level. My experience has shown that force levels at or near what we have in country now would likely suffice. The Obama administration has agreed to maintain a force level of 9,800 U.S. forces and several thousand other international troops through much of 2016. We must be prepared to sustain such levels until we, and our partners and allies, agree that conditions have substantially improved and allow further reduction. This likely means through 2020 at a minimum.[62] Stability in Afghanistan is not a sure thing, but the generally positive events of 2015 show that it is certainly feasible, and worth the modest additional investments to attain. JFQ

Notes

[1] The United States reestablished a Defense Attaché Office (DAO) shortly after the collapse of the Taliban regime, but it closed again in 2008–2009. DAOs are military diplomatic missions accredited to host nation governments and form a core part of the U.S. official presence in most countries. Under some conditions, however, they have been seen as redundant during large-scale U.S. combat operations. The reopening in 2014–2015 was part of the ongoing U.S. transition to a more traditional military and diplomatic presence in Afghanistan.

[2] W.J. Hennigan, "U.S. Military Investigates Deadly Air Strike in Afghanistan," *Los Angeles Times*, September 9, 2015, A4; Mujib Mashal, "Afghan Forces Seek to Regain Kunduz, Major Northern City, From Taliban," *New York Times*, September 29, 2015, available at <www.nytimes.com/2015/09/30/world/asia/afghan-forces-seek-to-regain-kunduz-city-from-taliban.html?_r=0>.

[3] Mark Mazetti and Eric Schmitt, "U.S. Study Is Said to Warn of Crisis in Afghanistan," *New York Times*, October 8, 2008, available at <www.nytimes.com/2008/10/09/world/asia/09afghan.html?pagewanted=all>; Elisabeth Bumiller, "Intelligence Reports Offer Dim View of Afghan War," *New York Times*, December 14, 2010, available at <www.nytimes.com/2010/12/15/world/asia/15policy.html?_r=0>.

[4] Ernesto Londoño, Karen DeYoung, and Greg Miller, "Afghanistan Gains Will Be Lost Quickly after Drawdown, U.S. Intelligence Estimate Warns," *Washington Post*, December 28, 2013, available at <www.washingtonpost.com/world/national-security/afghanistan-gains-will-be-lost-quickly-after-drawdown-us-intelligence-estimate-warns/2013/12/28/ac609f90-6f32-11e3-aecc-85cb037b7236_story.html>.

[5] Stephen Biddle, "Ending the War in Afghanistan: How to Avoid Failure on the Installment Plan," *Foreign Affairs* 92, no. 5 (September/October 2013).

[6] Karl W. Eikenberry, "The Limits of Counterinsurgency Doctrine in Afghanistan: The Other Side of the COIN," *Foreign Affairs* 92, no. 5 (September/October 2013).

[7] Anthony Cordesman, *Transition in Afghanistan: Losing the Forgotten War?* (Washington, DC: Center for Strategic and International Studies, January 26, 2015), 54–60.

[8] International Crisis Group (ICG), Asia Report No. 256, *Afghanistan's Insurgency after Transition* (Brussels: ICG, May 12, 2014), 2–4.

[9] Ibid., 42–44.

[10] Ibid., 80.

[11] Cordesman, 61.

[12] Operation *Resolute Support* replaced the International Security Assistance Force (ISAF) as the named NATO-led operation and organization for security assistance in Afghanistan as of January 1, 2015. Operation *Enduring Freedom* also ended on the last day of 2014, replaced by Operation *Freedom's Sentinel*.

[13] Excerpted from Special Inspector General for Afghanistan Reconstruction (SIGAR), *Quarterly Report to the United States Congress* (Washington, DC: SIGAR, July 30, 2015), figure 3.26. SIGAR data are based on United Nations (UN) reporting rather than Operation *Resolute Support* or other U.S. Government databases. See also 93–120 of the same report.

[14] Ibid., 94. See also UN General Assembly Security Council, *The Situation in Afghanistan and Its Implications for International Peace and Security: Report to the Secretary-General*, A/70/359–S/2015/684 (New York: UN, September 1, 2015), 4/17.

[15] Joseph Goldstein, "Afghan Army Is Tested by the Taliban as Fighting Season Begins," *New York Times*, April 13, 2015, available at <www.nytimes.com/2015/04/14/world/asia/afghan-army-is-tested-by-the-taliban-as-fighting-season-begins.html?_r=0>.

[16] Department of Defense (DOD), *Report on Enhancing Security and Stability in Afghanistan* (Washington, DC: DOD, June 8, 2015), 27–29.

[17] Operation *Resolute Support* leaders, including General John Campbell, USA, and Lieutenant General Joseph Anderson, USA, have described the increased rate of casualties as unsustainable over the long term. The operation made the reduction of attrition a priority for 2015 and beyond.

[18] DOD, *Report on Enhancing Security and Stability in Afghanistan* (Washington, DC: DOD, December 15, 2015), 1–2.

[19] UN General Assembly Security Council, *The Situation in Afghanistan*, September 1, 2015, 3–5.

[20] UN General Assembly Security Council, *The Situation in Afghanistan and Its Implications for International Peace and Security: Report to the Secretary-General*, A/70/601–S/2015/942 (New York: UN, December 10, 2015), 4–5; DOD, Report on Enhancing Security and Stability in Afghanistan, December 15, 2015, 19–20.

[21] UN General Assembly Security Council, *The Situation in Afghanistan and Its Implications for International Peace and Security: Report to the Secretary-General*, S/2015/147 (New York: UN, February 27, 2015), 3–5.

[22] "Biography of President Dr. Ashraf Ghani Ahmadzai," n.d., available at <www.embassyofafghanistan.org/page/biography-of-president-dr-ashraf-ghani-ahmadzai>; and Ashraf Ghani and Clare Lockhart, *Fixing Failed States: A Framework for Rebuilding a Fractured World* (New York: Oxford University Press, 2008). In 2005, Ghani also founded the nongovernmental organization the Institute for State Effectiveness, in Washington, DC.

[23] Thomas F. Lynch III, "After ISIS: Fully Reappraising U.S. Policy in Afghanistan," *Washington Quarterly* 38, no. 2 (Summer 2015), 123.

[24] See Jeffrey E. Stern, "This Former Johns Hopkins Professor Could Be Afghanistan's Next President," *New Republic*, March 27, 2014, available at <www.newrepublic.com/article/117150/ashraf-ghani-ahmadzai-interview-us-prof-afghan-president>; Kambaiz Rafi, "How Hamid Karzai Continues to Rule Afghanistan From Beyond the (Political) Grave," *The Diplomat*, July 25, 2015, available at <http://thediplomat.com/2015/07/how-hamid-karzai-continues-to-rule-afghanistan-from-beyond-the-political-grave>; Margherita Stancati, "Afghan Deal Probe Tests New President," *Wall Street Journal*, February 24, 2015, available at <www.wsj.com/articles/afghan-fuel-deal-probe-tests-new-president-1424829651>; David Lynch,

"Ghani Says Afghan Future Lies in Trade, Not Foreign Aid," *Bloomberg Politics*, May 4, 2015, available at <www.bloomberg.com/politics/articles/2015-05-04/afghanistan-s-ghani-says-a-tough-year-will-yield-stronger-nation>.

[25] John Campbell, "The State of Afghanistan and Prospects for the Future," remarks at the Brookings Institution, Washington, DC, August 4, 2015, 13–15.

[26] Most prominently, the relationship between Ambassador Karl W. Eikenberry and General Stanley A. McChrystal was less than fully harmonious. See Joshua Partlow, "Tensions Between Eikenberry, McChrystal Will Be Focus of Their Washington Visit," *Washington Times*, May 9, 2010, available at <www.washingtonpost.com/wp-dyn/content/article/2010/05/08/AR2010050803391.html>.

[27] Rod Nordland, "In Handling Barrage of Attacks, Afghan Forces Show Training Is Paying Off," *New York Times*, August 8, 2015, available at <www.nytimes.com/2015/08/09/world/asia/in-handling-barrage-of-attacks-afghan-forces-show-training-is-paying-off.html>.

[28] Yaroslav Trofimov, "Taliban Advances But Scores No Strategic Wins After U.S. Pullout From Afghanistan," *Wall Street Journal*, August 17, 2015, available at <http://search.proquest.com/docview/1707506394/fulltext/AAD0614AE6984C03PQ/1?accountid=12686>.

[29] Air power is a recurring theme with Afghan senior leaders when discussion turns to where allied support has not been adequate. The shortcomings focus on lack of close air support planes and helicopters, but extends to utility helicopters as well. See Rod Nordland, "U.S. Is Struggling in Its Effort to Build an Afghan Air Force," *New York Times*, September 26, 2015, available at <www.nytimes.com/2015/09/27/world/asia/us-is-struggling-in-its-effort-to-build-an-afghan-air-force.html?_r=0>.

[30] Personal communication with a number of Afghan National Defense and Security Forces (ANDSF) senior leaders, including the Chief of Army Staff and Chief of Operations, Kabul, Afghanistan, July 2015.

[31] Campbell, remarks at Brookings Institution.

[32] *Report on Enhancing Security and Stability in Afghanistan*, 39.

[33] Concerns spiked after comments made by outgoing ISAF Joint Command Commander Lieutenant General Joseph Anderson in November 2014. See Jon Harper, "U.S. Commander: Afghan Casualties 'Not Sustainable,'" *Stars and Stripes*, November 5, 2014, available at <www.stripes.com/news/us-commander-afghan-casualties-not-sustainable-1.312364>.

[34] General John Campbell, statement to the Senate Armed Services Committee, Washington, DC, February 12, 2015, available at <www.armed-services.senate.gov/imo/media/doc/15-13%20-%202-12-15.pdf>.

[35] James Mackenzie and Ralph Boulton, "Afghan Forces Lose 4,000 a Month to Casualties, Desertion—U.S. General," Reuters, August 6, 2015, available at <http://in.reuters.com/article/2015/08/06/afghanistan-military-idINKCN0QB26420150806>.

[36] SIGAR, 98–99.

[37] Personal communication with author, April 2015. For Brookings Institution ongoing total of ANDSF casualties, see Ian Livingston and Michael E. O'Hanlon, "The Afghanistan Index," Brookings Institution, Washington, DC.

[38] Franz-Stefan Gady, "Afghan Forces Are Suffering Record Losses," *The Diplomat*, May 5, 2015, available at <http://thediplomat.com/2015/05/afghan-forces-are-suffering-record-losses/>.

[39] SIGAR, 2–5.

[40] Wadsam (Afghan Business News Portal), "President Ghani's Serious Commitment to Combat Corruption," June 2, 2015, available at <http://wadsam.com/afghan-business-news/president-ghanis-serious-commitment-to-combat-corruption-2132/>.

[41] SIGAR, 16.

[42] Combined Security Transition Command–Afghanistan, *Command Brief* (slidepack), Kabul, Afghanistan, July 10, 2015.

[43] *Report on Enhancing Security and Stability in Afghanistan*, 6.

[44] Jibran Ahmad, "Taliban's Mullah Omar Died of Natural Causes in Afghanistan, Son Says," Reuters, September 11, 2015, available at <www.reuters.com/article/2015/09/14/us-pakistan-taliban-idUSKCN0RE0RC20150914>; and "Afghan Taliban Leader Sends Envoy Abroad to Win Support, Unite Group," Reuters, September 11, 2015, available at <http://in.reuters.com/article/2015/09/11/afghanistan-taliban-idINL4N11G34K20150911>.

[45] Anwar Iqbal, "IS Fighting Taliban in Afghanistan, Says U.S. Commander," *Dawn.com*, August 17, 2015, available at <www.dawn.com/news/1200933>.

[46] Campbell, Brookings Institution remarks. See also Jon Boone, "UN Report Detailing Taliban Fighter Deaths Warns of Force's Illicit Funding," *The Guardian*, November 17, 2013, available at <www.theguardian.com/world/2013/nov/17/un-report-taliban-fighter-deaths>.

[47] Campbell, Brookings Institution remarks.

[48] Amir Shah et al., "Pakistan Sees Progress After Hosting Afghan-Taliban Talks," *New York Times*, July 8, 2015, available at <www.nytimes.com/aponline/2015/07/08/world/asia/ap-as-pakistan-afghanistan.html>.

[49] Ahmet Ali Naqvi, "Pakistan-Afghanistan Relations Post 2014: Impacts on Pakistan's Security," *Journal of Political Studies* 22, no. 1 (2015), 97, 211–212.

[50] Lauren McNally and Paul Bucala, *The Taliban Resurgent: Threats to Afghanistan's Security* (Washington, DC: Institute for the Study of War, March 2015), 17–20.

[51] UN report A/70/359–S/2015/684, 5-7/17.

[52] Kathryn Stoner, "Russia's 21st Century Interests in Afghanistan: Resetting the Bear Trap," *Asian Survey* 55, no. 2 (March/April 2015), 398–419.

[53] Andrew Small, "What Now for China's Afghanistan Strategy?" *The Diplomat*, September 1, 2015, available at <http://thediplomat.com/2015/09/what-now-for-chinas-afghanistan-strategy/>.

[54] Michael Kugelman, "Why Afghanistan Is a Big Winner in the U.S.-Iran Deal," *War On the Rocks*, July 29, 2015, available at <http://warontherocks.com/2015/07/why-afghanistan-is-a-big-winner-in-the-us-iran-deal/>.

[55] Sultan Barakat and Brooke Windsor-Smith, "Post-ISAF Afghanistan: The Early Months," Brookings Doha Center, February 2015, available at <www.brookings.edu/~/media/research/files/reports/2015/05/bdc-afghanistan-nato-report/bdc-nato-event-report.pdf>.

[56] Artemy Kalinovsky, *Long Goodbye: The Soviet Withdrawal from Afghanistan* (Cambridge: Harvard University Press, 2011), 199–205.

[57] Stephen Hosmer, Konrad Kellen, and Brian Jenkins, *The Fall of South Vietnam: Statements by Vietnamese Military and Civilian Leaders* (Santa Monica, CA: RAND, December 1978), 7.

[58] SIGAR, 79.

[59] Atlantic Council South Asia Center, *Afghanistan and U.S. Security* (Washington, DC: Atlantic Council South Asia Center, October 2015), 2–6, available at <www.atlanticcouncil.org/publications/issue-briefs/afghanistan-and-us-security>.

[60] Thomas F. Lynch III, *There Is Still Time to Keep Afghanistan from Going the Way of Iraq—If Drawdown Plans Are Significantly Modified*, Foreign Policy Research Institute (FPRI) E-Notes (Washington, DC: FPRI, March 2015), available at <www.fpri.org/docs/lynch_on_afghanistan_0.pdf>.

[61] James Cunningham, *Afghanistan and U.S. Security* (Washington, DC: Atlantic Council South Asia Center, October 14, 2015, 2–4.

[62] Kellan Howell, "U.S. Re-Evaluating Troop Drawdown in Afghanistan," *Washington Times*, September 25, 2015, available at <www.washingtontimes.com/news/2015/sep/25/us-re-evaluating-troop-drawdown-in-afghanistan/>; and Matthew Rosenberg and Michael Shear, "In Reversal, Obama Says U.S. Soldiers Will Stay in Afghanistan to 2017," *New York Times*, October 15, 2015, available at <www.nytimes.com/2015/10/16/world/asia/obama-troop-withdrawal-afghanistan.html>.

Afghan air force aircrew and NATO Air Training Command–Afghanistan air advisors stand together after first-ever all-Afghan C-130 flight, Kabul, Afghanistan, June 16, 2014 (U.S. Air Force/Vernon Young, Jr.)

Advising the Afghan Air Force

By Aaron Tucker and Aimal Pacha Sayedi

Successful advising requires skill in a broad range of competencies that includes political-military relations, operations, and acquisitions. Advising the Afghan air force's airlift mission seeks to strengthen the legitimacy of the Government of the Islamic Republic of Afghanistan as part of the counterinsurgency strategy of the International Security Assistance Force (ISAF). Training at the U.S. Air Force's Air Advisor Academy supports the initial qualification of students as air advisors, while additional lessons are gleaned from studying the Soviet experience in Afghanistan in the 1980s. Finally, developing effective advising postures can be guided by a conceptual model that incorporates ideas outlined in Colonel John Boyd's essay "Destruction and Creation"[1] and by systems engineering techniques. This article breaks down the essential components of a successful air advising posture, applies it to the mission in Afghanistan, and concludes with a summary of key points and suggested areas for improvement.

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Airlift as a Counterinsurgency Tactic

The Hindu Kush mountain range extends from central Afghanistan, with peaks more than 16,000 feet high, through the Badakhshan region in the northwest of the country, where mountain peaks reach 24,000 feet. Throughout history, this rugged terrain has isolated Afghanistan's numerous tribes, causing local government and family-based power structures to prevail. Moreover, attempts by foreign powers to install a strong central government have been strenuously resisted. Ancient invaders such as Alexander the Great and Genghis Khan simply bypassed terrain that was difficult to conquer, leaving ungoverned areas referred to as *yagistan*, that is, lawless places. Deliv-

ering government services to isolated areas that would otherwise harbor insurgents enforces governmental legitimacy and is a critical part of the Afghan counterinsurgency strategy. An air mobility capability increases Afghan capacity to govern and administer through presence and persistence.

Rotary-wing airlift is flexible and its capability to reach remote landing zones is critical to the counterinsurgency mission in Afghanistan. It is expensive to operate and maintain, however. Developing a less expensive, fixed-wing airlift capability to replace rotary-wing assets on runway-to-runway routes would reduce wear and tear on the rotary-wing fleet's limited life span. In addition to passenger and cargo transportation, fixed-wing airlift can also provide casualty evacuation (CASEVAC) and nontraditional intelligence, surveillance, and reconnaissance (NTISR) capabilities in support of Afghan National Security Forces (ANSF). Due to the cultural importance of family and tribal bonds, dependable CASEVAC is critical to the morale and fighting spirit of ANSF soldiers fighting for their country far from their families and home villages.[2]

The Air Advisor in Afghanistan

The mission of the air advisor is to assess, advise, assist, train, and equip Afghan aviation forces to achieve counterinsurgency objectives.[3] Generally considered experts in their career fields, the advisors bring a wealth of operational experience and seasoned judgment to the dynamic task of mentoring Afghan airmen in a fluid and often challenging combat environment that is typically unfamiliar to the advisor. For example, the 538th Air Expeditionary Advisory Squadron (538 AEAS) advised the 373rd Fixed Wing Squadron (373 FWS) in the Afghan air force Kabul air wing. Although each advisor was an expert airlift operator, the mission of the 538 AEAS was not to execute an airlift mission, but to advise Afghan counterparts in establishing a sustainable method for effective and efficient movement of passengers and cargo.

Successful application of advising tactics, techniques, and procedures (TTPs) could transform current Afghan capabilities to a long-term, sustainable solution. North Atlantic Treaty Organization Air Training Command–Afghanistan (NATC-A) advisors are authorized to assist the Afghan air force in the direct execution of their mission in support of the ISAF Train, Advise, Assist (TAA) mission under Operation *Resolute Support*. Assessments are communicated through the advisors' leadership to indicate current trends and signs of definitive success. Personnel at each level of leadership are responsible for advising their counterparts, so regular assessments help maintain coherence throughout the organization. Afghan personnel should be the visible and actual force behind the mission because they are more effective among the population and lend legitimacy to the government during a counterinsurgency. Advisor assistance is required when Afghans have not yet developed the required skill set or gained the necessary experience for safe, effective execution. The range of options along the advise-assist spectrum offers advisors a great deal of flexibility in responding to the tactical situation. Coordinated postures allow several lines of effort to work together to develop combat capability and build Afghan forces to a sustainable capability. And as is often the case in irregular warfare, "success in one area may coexist with failure in another and uncertainty in most."[4]

Both combat aviation advisors and air advisors play a significant role in irregular warfare. Combat aviation advisors graduate from a 1-year special operations course and receive extensive training focused on independent, small-team operations in a specific region and cultural environment. A distinct 5-week air advisor course instructs general purpose forces in three areas: core advising skills; specialized language, culture, and regional studies; and advanced force-protection skills. It also provides a bridge between the extensive combat aviation advisor course and the "slap dash" type of training provided to Vietnam-era advisors.[5] These courses are critical to developing cross-cultural empathy and the ability to relate to Afghan counterparts. In contrast, most Soviet advisors during the 1980s had little specialized training or advisory experience.[6] A 1-week course covered the political, military, and economic situation while instructors emphasized the importance of the Soviet internationalist mission and tried to impart a sense of optimism.[7] During the course, Soviet advisors might also pick up additional reading on Afghan history or politics on their own initiative.

Conceptual Models for Advising Postures

Advisors spend a great deal of energy developing postures that guide their counterpart relationships toward achieving a sustainable solution. One conceptual model of use in this context is presented in John Boyd's essay "Destruction and Creation." The essay outlines a thought process of the destruction of a concept down to its components through analysis, followed by the construction of a conceptual model through synthesis.[8] Boyd also uses the mathematical concept of differentiation to illustrate how to understand a concept or response based on the way it changes relative to a given variable. The advisor can then apply inductive logic to construct a conceptual model. Integration of the differentiated parts allows the creation of an internally consistent and effective advising posture.

Similarly, Afghan operational networks such as CASEVAC or air transportation can be analyzed as systems of interconnected systems. Systems engineering techniques are useful for understanding complex mission sets and developing lean solutions that meet validated operational requirements. For example, the functional decomposition technique is similar to Boyd's concept of destruction and is informed by the Joint Operation Planning Process applied at the tactical level.[9] In this process, mission stakeholders are first surveyed to validate a complete set of requirements. Next, a complex task is decomposed from the system level into progressively simpler tasks until an individual work unit is defined.

U.S. Army Train, Advise, Assist Command–Air personal security detail shift lead provides security while MD-530 Cayuse Warrior takes off with all-Afghan crew for combat mission, September 27, 2015 (U.S. Air Force/Sandra Welch)

Lean management ensures that only tasks that can be directly traced to a validated requirement receive resources for completion. Additionally, the interfaces between tasks are defined and developed to support operation at system and system-of-systems levels. Applied to the advisor mission, host nation economic, cultural, and operational sustainability is the standard by which any materiel or procedural solution should be judged.

Developing Advising Postures

Advisors leverage technical expertise in the development and application of military power with knowledge of Afghan culture and capabilities to construct an advising posture. This posture in turn guides coordinated and coherent advice and assistance. It is both flexible enough to respond to the tactical situation and structured enough to direct lines of effort toward an identified endstate. Through the processes of definition, destruction, and differentiation, a properly defined mission can be decomposed into relevant tasks and then individuated for cultural and task suitability. Synthesizing an advising posture starts with an assessment of the current Afghan capability and then establishes a balance between advising and assisting to reinforce a desired mode of operation. A set of advising postures establishes the ability of an advising team to deliver coherent advice across a mission set that involves individual interactions with Afghan counterparts. This allows for efficient and effective progress toward a sustainable solution while at the same time advancing the coalition's counterinsurgency mission. The following sections describe this process step by step.

Define the Mission. Good advising starts with a well-defined mission and an accurate assessment based on mutually beneficial security objectives. A properly defined mission is based on validated Afghan requirements and coordinated throughout Afghan and coalition leadership. Afghans need to have direct input when devising the requirements, and their coalition advisors must listen carefully to understand the Afghan vision that drives their mission statement. Metrics are derived from specific tasks that can be tracked and assessed on a regular basis. Advisors continually assess the effectiveness of their efforts, Afghan capabilities, and the assumptions in their advising posture. The assessment starts long before a materiel solution is identified and continues after equipment is fielded.

Destruct U.S. Methods/Paradigms. Using their professional expertise in employing airpower, advisors analyze coalition TTPs and deduce their applicability to the Afghan environment. The appropriate model of Afghan airpower, however, must be developed with intellectual humility and with consideration

for Afghan strengths, capabilities, and requirements. It should also be "less intrusive and more insightful; less in control and more in support."[10] While there is institutional inertia for a technological solution,[11] it is important for advisors to weigh in on the sustainability of that technology in light of cultural, educational, and economic considerations. Foreign military sale decisions often are made at the diplomatic and strategic levels, but make little tactical sense.[12]

Differentiate Regarding Afghan Mission/Culture. Advisors work with their Afghan counterparts to differentiate between processes that are sustainable in the Afghan environment and those that are not. Coalition processes are not necessarily applicable to the Afghan air force, and developing sustainable solutions is not possible without understanding the influence of culture, religion, politics, and social considerations as an operational necessity.[13] With a heavy reliance on donor countries that have a finite commitment timeline and budget, Afghan operations must conserve resources and vigorously seek efficiencies in support functions while preserving operational flexibility. Afghan officers require sound advice on how to provide airpower capabilities that are both effective and efficient, but their insights into sustainable practices are critical to finding a sustainable path to best serve the Afghan people. The sustainable process should be a mix of technology, training, and support functions that enables affordable, sustainable, and capable airpower. Soviet advisors only knew how to replicate their experience in the Soviet Union and could not differentiate their native ideological approach into a successful Afghan solution.[14]

Integrate Through Cultural Considerations. Successful advising postures integrate Afghan and coalition cultural considerations. Study of Afghan history and culture before assuming advising duties enables understanding the context of Afghan airmen and their mission. Advisors need to immerse themselves in their roles by attending meetings, flying on missions, and forming strong professional relationships with their Afghan colleagues. Until 2008, coalition advisors to the Afghan air force served 6-month tours, which were not long enough to enable them to become knowledgeable about their advising mission and to establish a rapport with their counterparts. Patience and subtlety are required by both advisors and counterparts to understand each other's perspectives, requirements, and strengths. When advising airlift operations, understanding transportation priorities helps advisors work with the Afghans to develop a sustainable solution. For example, the movement of human remains to the place of burial without unreasonable delay is the top airlift priority due to religious considerations. In addition, ANSF leave policies are designed to accommodate close ties with family and home villages. As a result, there is a large demand for troop transport from remote bases back to the population centers around Kabul and Jalalabad.

Construct an Advising Posture. Constructing advising postures requires time and patience in order to listen and observe. Reconciling what is said with what actually happens is crucial to developing practicable postures. Furthermore, effective advising postures balance Afghan success with the freedom to fail. Earned success is excellent positive reinforcement of training, and Afghans take great pride in knowing their efforts have directly resulted in mission success. Conversely, failure is an important training tool, and the advising posture should manage risks and mitigate the consequences of failure while promoting the ability of Afghans to live with their own decisions. An advising posture with too much emphasis on assistance will result in overdependence. Soviet advisors tended to complete a task themselves rather than training their counterparts. As a result, Afghans had largely stopped working, preferring to "lay all the burden and responsibility for practical work on the shoulders of the advisors."[15]

Ensure Balance. Advisors strive for a balance between the advise and assist functions, which is continually shifting, depending on the task and the maturity of the Afghan process. When balanced with force protection considerations, working and flying alongside Afghan partners are powerful mechanisms to establish rapport, build relationships, and demonstrate a mission skill set. Thus, air advisors in Kabul work outside coalition-secured compounds on a daily basis to properly engage with their Afghan counterparts.

After a period of seasoning, Afghan-demonstrated proficiency allows advisors to shift from assistance to advising while controlling the pace of the move toward an independent Afghan capability through the enforcement of performance standards. Afghans should progress with diminishing mentor support without meddling merely to promote efficiencies. As T.E. Lawrence cautioned, it is "better that they do it tolerably than that you do it perfectly."[16] When Soviet advisors were held accountable for Afghan forces' performance, they tended to take control rather than advise Afghan forces. This imbalance slowed the development of Afghan capabilities.

The force protection/personal engagement balance is carefully considered during the synthesis of any advising posture, but the risk of an insider or insurgent attack is never completely mitigated. Force protection and combat skills training were increased after nine NATC-A advisors were killed on April 27, 2011. The result was a decision to harden the NATC-A staff offices and levy "guardian angel"[17] requirements on advisors. Under these requirements, advisor engagement with Afghan counterparts suffered significantly and resulted in policies and initiatives that were removed from Afghan realities. This type of fortress mentality is anathema to the advising spirit and mission, and it is time to return to embedded advising for staff advisors. Tactical-level advisors, however, remained embedded with the Afghans and were able to adjust their advising posture based on threat indicators while maintaining open relationships that produced significant results. In the 1980s, Soviet advisory teams were embedded with the Afghan forces and, although not authorized to do so, assisted with combat operations. They faced a threat of mujahideen infiltration in the ranks of

U.S. Air Force Train, Advise, Assist Command–Air advisor pilot and guardian angel Airman and Afghan air force pilot after training flight on Cessna C-208, September 21, 2015 (U.S. Air Force/Sandra Welch)

Afghan troops that was similar to the current insider threat of insurgent attacks on Afghan soldiers and their advisors.[18]

Fixed-Wing Airlift Advising

Airlift in Afghanistan supports the counterinsurgency mission by extending official services to the Afghan population, thereby increasing the legitimacy of the government. Airlift also provides a means to transport critical supplies across a mountainous country with limited roads. Finally, soldiers travel home frequently to maintain the social fabric of family and tribe, and airlift reduces soldiers' time away from their posts. These missions motivate airlift advisors and Afghan airmen to establish a sustainable airlift capability.

C-208 Aircraft. The Afghan air force fleet of 26 C-208B Grand Caravan aircraft is configured with a modern Garmin G1000 avionics suite and up to 10 removable seats (in addition to the pilot and copilot) to allow multiple cabin configurations for passenger or floor-loaded cargo/patient transport. However, a major C-208 deficiency is an unpressurized cabin and low service ceiling. Unable to climb above the mountainous terrain, the aircraft's en route operations through mountain passes and valleys are required to be daytime visual maneuvers even if airport approaches are under instrument flight rules.

Establishing a fixed-wing CASEVAC capability is a military and economic imperative. The Afghan system mirrors the coalition medical evacuation process with rotary-wing lift from the point of injury to base hospitals. However, since dedicated assets are expensive to operate, Afghan Mi-17 helicopters pick up soldiers close to the point of injury and take them to a forward field station or regional hospital. Wounded soldiers are next flown to the National Military Hospital in Kabul using fixed-wing CASEVAC, as one C-208 can operate at 3 percent of the cost of generating the flights of two Mi-17s. Additionally, soldiers depend on fixed-wing CASEVAC to return home for care and recovery.

To establish a fixed-wing CASEVAC capability, advisors assist the Afghan air force in assessing airfields, training flight medics, and mentoring C-208 capabilities. Airfields without a coalition presence are assessed for suitability by researching airfield characteristics such as runway length, width, surface material and condition, as well as taxi obstructions, security, and fuel availability. C-208 pilots work directly with Afghan flight medics from the Kabul air wing hospital, attending to litter and ambulatory patients who require assistance during loading or flight. Advisors coordinate with ANSF medics to conduct training at their home airfield. During these training sessions, medics learn to configure the passenger cabin to accommodate litter patients, as well as to load and properly secure litters. Medics and airlift planners also become familiar with C-208 CASEVAC capabilities and

Salang Pass meanders through Hindu Kush Mountains and has been called one of most dangerous roads in world (U.S. Army/Michael K. Selvage)

operations, so they can request C-208 support instead of the more expensive Mi-17 airlift. Finally, advisors educate higher echelon leadership at *shuras* (consultations) such as the Afghan National Army 203rd Corps *Shura* or National CASEVAC *Shura* in December 2013.

Nontraditional intelligence, surveillance, and reconnaissance is another important capability that the C-208 can provide. U.S. advisors and their Afghan counterparts work together to differentiate coalition methodologies and establish skills that make sense for the Afghan mission, including TTPs, planning, analysis, and exploitation. Confidence missions and exercises are then used to validate the training.[19] Finally, the capability is proved through success in support of real-world requirements.

Rather than requiring dedicated assets, the C-208 is a suitable NTISR platform due to its low operating cost, its prevalence in the Afghan air force, and its low visual and aural signatures. For conducting NTISR, intelligence analysts receive a mission tasking and prepare a simple brief with global positioning system coordinates and descriptions of the targets. Pilots plan approach routing to mitigate threats and exploit advantageous sun angles. No modifications to the aircraft are typically required, although particular attention is paid to cleaning the windows thoroughly. Prior to the start of such a mission, advisors conduct extensive flight and ground training for the Afghan intelligence analysts. Some training flights might emphasize practice with camera equipment and coordination with pilots on selecting good routes and aspect angles for photographing specific ground targets. Pilots practice maneuvers to orient the airplane for good photography from the windows, establish ground tracks, and mitigate exposure to ground threats. After the mission is completed, intelligence analysts apply imagery analysis techniques to fix geospatial points, identify target features, and measure characteristic data. Such a continuum of flight and ground advising ensures that NTISR provides sound intelligence to the Afghan operational forces.[20]

As coalition basing contracts to Kabul, an Afghan airfield assessment capability is critical to survey airfields to support the dynamic airlift needs of counterinsurgency and humanitarian relief operations. For instance, one of the first airfields assessed was Feyzabad in Badakhshan Province. Based on this assessment, the Afghan air force was ready to establish an air operations detachment there in late 2013. In May 2014, C-208 and C-130 crews executed airlift and NTISR missions in support of humanitarian relief operations after a mudslide in the province. The aerial photographs of the disaster area were quickly analyzed and provided to ground commanders and government officials to understand the magnitude of the mudslide and manage the risk of subsequent slides.

C-130 Aircraft. In January 2013, Ashton Carter, then–Deputy Secretary of Defense, directed the U.S. Air Force to provide four C-130H aircraft and the requisite training to the Afghan air force by the end of September 2013.[21] An arrival ceremony on October 9, 2013, celebrated the delivery of the first two aircraft. Expectations for the new capabilities they would provide were high as advisors worked to establish an advising posture and define the sustainable solution while exercising the aircraft capabilities, command and control, and ground support infrastructure. Advisor creativity and initiative enabled the first all-Afghan C-130 mission in June 2014.

The Afghan medium-airlift requirement consists of passenger, cargo, casualty, and human remains movement between main bases. The large majority of missions carry up to 70 passengers and a baggage pallet loaded on the cargo ramp position. Occasionally, cargo missions are also tasked, but the planning timelines for air transportation missions are centrally controlled by the Ministry of Defense. Afghanistan has a robust ground transportation mode that moves virtually all required supplies for the ANSF. Airlift transports passengers and sensitive cargo that must move quickly or that is an attractive target for insurgent attack and theft (for example, ammunition, weapons, or leadership).

The C-130 is the largest and fastest aircraft in the Afghan inventory. It is a source of national pride, an indicator of governmental legitimacy, and, as a direct threat to the insurgents' narrative, a high-value target. As such, it normally flies to airfields where coalition security is available to provide external security to the aircraft and crew. To deliver sustainable cargo and passenger capabilities, a loadmaster posture that would work for both coalition-assisted and all-Afghan crews was developed. Cargo and passenger loads that did not meet standards

for safe transport were identified by the loadmaster and assessed as an advising opportunity, with notification made to the aircraft commander and the aerial port advisor. The aircraft commander determined the time available to assess, advise, train, and assist aircrew and aerial port personnel. If time was not sufficient to correct the problem, the cargo or passengers were refused. Discrepancies were distributed to the appropriate advising teams to facilitate coordinated advising postures.

While pilots and a flight engineer were in U.S. training programs in 2013, Afghan loadmaster students were not scheduled to complete training until 2015. Therefore, to accelerate an initial all-Afghan C-130 capability, advisor initiative created a limited loadmaster course. Advisors noted that the vast majority of Afghan C-130 missions carried passengers, patients, or human remains, with only a baggage pallet loaded on the cargo ramp. Advisors from the 538 AEAS were familiar with U.S. Air Force training paradigms, as most had experience as schoolhouse instructors. U.S. Air Force loadmaster training is conducted using a syllabus that is structured around lesson plans and that employs classroom learning, static load trainers, and flight instruction. (Static load trainers are nonflying aircraft that allow for continuous training opportunities without the expense of using an aircraft maintained for flying operations or the risk of damage resulting in expensive repairs and impact on the flying mission.) This progression of instruction builds knowledge and skills for demonstration and practice with increasing degrees of risk and expense. The highest risk of injury and damage occurs during cargo load training, particularly that involving winching operations or driving vehicles on board.

Advisors understood the risk of aircraft damage during loadmaster training and sought to mitigate the risk by differentiating U.S. Air Force training regarding the Afghan mission. First, former C-27 instructor loadmasters assigned to the 373 FWS in Kabul were not slated for C-130 training in the United States because of English language deficiencies. While their technical abilities had been developed in a similar airlift aircraft, language barriers remained. Second, damage to any of the small fleet of Afghan C-130s would have a lasting, strategic impact on its medium-airlift operations due to limited heavy repair capability. Finally, passenger missions with no cargo except a baggage pallet constituted 80 percent of the missions.

Integrating the resulting Afghan mission requirements with advisor resources and capabilities allowed the synthesis of a practicable advising posture. Additional English instructors were available as a result of a realignment of a Raytheon contract (see below) to develop language lessons tailored to the loadmaster training requirements. English instruction was integrated with C-130 aircrew procedures and systems training to support a loadmaster qualification course. The risk of aircraft damage was mitigated by reserving training in winching operations or vehicle loading for the formal training course at Little Rock Air Force Base, Arkansas. Local loadmaster training focused on cargo compartment configuration for passengers, litter patients, or human remains. Only a baggage pallet was loaded on the aft pallet position on the cargo ramp using a forklift.

The first C-130 mission with an all-Afghan crew represented the convergence of 9 months of assessing, training, advising, and assisting. The main risk was crew inexperience, and advisors and Afghan aircrew worked together to mitigate that risk. The mission was limited to passengers, patients, and human remains, with a baggage pallet loaded on the main ramp. A single stop at a familiar coalition-controlled field eased crew coordination and security concerns, and enabled a straightforward maintenance recovery plan. High-ranking government officials and international media were invited to welcome the crew at the end of the mission, but no interviews were granted during preflight and departure to allow the crew to concentrate on executing a safe airlift mission. A generous timeline allowed for response to unforeseen delays without imposing stress on the aircrew. As a result of these measures, a successful milestone in the medium airlift capability of the Afghan air force was achieved on June 16, 2014.

Aviation English Language Training. Advisors were developing a passenger-only C-130 loadmaster syllabus in December 2013 when Raytheon English language instructors announced that they had unfilled capacity for aviation English training. Because the four passenger-only loadmaster candidates were not proficient in English, they had not been identified for the loadmaster training pipeline in the United States. The fixed-wing advisors thus joined their technical knowledge and expertise with the Raytheon instructors' language instruction and curriculum development skills to train loadmasters in Kabul. In addition, Raytheon had remaining capacity to instruct more students. Thus a 10-week Aviation English Training (AET) course was developed in January 2014 to prepare 8 aircrew and 17 maintenance students for success at the Defense Language Institute (DLI) and follow-on technical training conducted in English. Four follow-on AET courses similarly identified requirements from NATC-A stakeholders, resulting in a functional English course for 108 students from the Kabul air wing and DLI preparation courses for A-29 pilots and maintainers, MD-530 helicopter pilots, students identified for pilot training in the United Arab Emirates, and Kabul air wing maintainers identified for supervisory positions requiring English proficiency.

To develop the AET advising posture, regular meetings with stakeholders defined the mission through an open discussion of requirements. AET was designed to instruct students in technical English to accelerate follow-on technical training. An analysis of the U.S. Air Force process revealed a series of training events for each student: several months at DLI until the student achieved functional fluency, followed by basic technical training (for example, maintenance, aircrew), and then specialized technical training (for example, fuels, hydraulics, flight engineer, loadmaster). Differentiating this process regarding Afghan considerations, advisors determined that it would be valuable

to shorten the time that Afghans are deployed for overseas training and that, under an existing contract, Raytheon had the expertise to develop and deliver technical English training in Afghanistan. Additionally, through a stakeholders' meeting, C-130 maintenance and Pohantoon-e-Hawayee (Air University) advisors identified Afghans who could benefit from a DLI preparation course. At this meeting, 538 AEAS advisors obtained NATC-A/J7 approval to construct an AET capability. The integrated solution included Raytheon English instructors, advisors from the 538 AEAS to oversee operations and provide aircrew subject matter expertise, NATC-A/J7 to administer the Raytheon contract and advise the Afghan air force/G7 (Training Office), and the 440 AEAS to provide maintenance subject matter expertise. These elements worked together to synthesize a program that delivered valuable training in Kabul that was tailored to the needs of the Afghans. The training allowed the Afghans to reduce the length of their absence from the mission of the Afghan air force, remain near their family support structure, and complete Ministry of Defense processing required for travel. This construct of Aviation English Training continues to serve as a valuable advising posture.

Conclusion

Advising the Afghan air force is an important part of the counterinsurgency mission. The airlift capability allows the Afghan government to deliver services across a country characterized by rugged terrain and populated by people who cannot be served by any means as effectively as by airlift. The air advisor assesses, advises, assists, trains, and equips his Afghan counterparts through a series of advising postures. The construction of a good advising posture leverages the advisor's mission expertise by first analyzing coalition tactics, techniques, and procedures, and then selecting those that are appropriate for an Afghan sustainable solution. These components are integrated with cultural considerations to synthesize a coordinated and consistent advising posture by which advisors can develop and deliver airlift capabilities to the Afghan air force.

A critical requirement that enables advisors to adapt coalition techniques to the Afghan airlift mission is an intimate knowledge of what works in Afghanistan. To achieve this level of knowledge, advisors must immerse themselves in their missions, develop personal relationships with their counterparts, and seek to learn and understand—and then create—advising postures that are imposed on Afghans in a coalition-centric environment.

It is time to return to the embedded advisory posture and invert the ratio of time spent between coalition and Afghan workspaces. Afghans have had mentors for a generation, and their knowledge and vision must be integral to the development of advising postures, not as an afterthought.

Finally, advisors must be receptive to creative opportunities in the execution of their missions. The variety of missions developed for the C-208 and the speed with which an all-Afghan C-130 capability was delivered depended on advisor initiative and creativity combined with Afghan vision, hard work, and sacrifice. When advisors and their counterparts work together toward a well-defined and commonly accepted vision of a sustainable solution, the future of the Afghan air force is bright indeed. **JFQ**

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U.S. Navy Sailors perform casualty evacuation training in preparation for Exercise Eager Lion 15 in Jordan, May 3, 2015 (U.S. Marine Corps/Austin A. Lewis)

Enhancing Security Cooperation Effectiveness

A Model for Capability Package Planning

By Thomas W. Ross

Developing key capabilities of partner nation militaries is an important pillar of U.S. national defense strategy. In critical missions, such as military operations in Iraq and Afghanistan, building armed forces from the bottom up occupies a central role in overall campaign strategies. Elsewhere, the United States is seeking to develop the capabilities of select partner militaries to help them conduct or support distinct missions, such as counterterrorism or counterproliferation, to diminish risks to U.S. security.

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Enabling collective action through partner capacity-building plays as a leitmotif throughout President Barack Obama's 2015 National Security Strategy, which asserts that "in addition to acting decisively to defeat direct threats, we will focus on building the capacity of others to prevent the causes and consequences of conflict to include countering extreme and dangerous ideologies."[1] The strategy expresses

U.S. commitment to strengthening the capabilities of partners to fight terrorism, support peacekeeping missions, deter aggression, prevent conflict, and respond to regional crises.

Despite the primacy of partner nation capacity-building in U.S. strategy, the fact is that investments to develop partner military capabilities have achieved mixed results. The security cooperation community is rife with anecdotes about U.S.-provided helicopters rusting away in hangars after only a few years of use or of armored Humvees sitting on blocks in perpetual disrepair.[2] Too often, U.S. military capacity-building efforts have failed to deliver sustainable, effective partner capabilities that truly ease operational burdens on U.S. forces. In a time of fiscal austerity, the Department of Defense must examine how it can do better with the limited resources available.

While many variables have undermined success in capability-building efforts, at the core of the issue is how misconceptions of what a *capability* entails lead to gaps in implementation. Simply put, we have too often directly equated a capability with a weapons system and a minimal operator training course. As one analyst writes, "Raising armies is more sophisticated than this, and involves engaging civil society, growing leaders, building institutions and instilling professionalism. Training and equipping alone only gives you better dressed soldiers who shoot straighter."[3] Capability is not simply a weapon or piece of equipment; it is a complex system of mutually reinforcing inputs that combine to enable a military to achieve a necessary function in support of a specific mission.

To effectively develop partner nation military capabilities, security cooperation activities must be planned in accordance with a capability definition that encompasses all necessary inputs and supports clearly defined objectives to develop these inputs. Only through planning comprehensive capability packages—instead of imbalanced assistance that prioritizes hardware—can the United States maximize success in building partner military capabilities to offset risks to U.S. national security. This article sets forth a Capability Package Planning Model (CPPM) intended to guide assessment of capability requirements and programmatic risks; to identify key inputs comprising a military capability; and to develop comprehensive capability packages that address capability requirements across all necessary dimensions and ensure that U.S. security cooperation investments are more closely linked to priority objectives derived from national and defense strategic guidance.

The CPPM is intended for practitioners of security cooperation planning, primarily those within the U.S. military but also for practitioners within the security components of other Federal agencies and other security exporters who wrestle with similar challenges as U.S. military planners. In practice, these planners' craft is carried out in a fast-paced context where time pressures, cultural contexts, security environments, leadership demands, and other factors often frustrate intentions to apply theoretical models without adjustments and improvisations. This model is intended not to dictate a step-by-step checklist for planners but rather to shape thinking about how to plan security cooperation activities in the practical context. It is not meant solely for practitioners, however; policymakers also need a clearer understanding of what capability-building should entail to guide their decisions about associated resources, authorities, and strategies.

Defining Capability

To set the stage for a CPPM, we must first define what we mean when we discuss a military capability.

In a military context, capability entails the ability to perform a function in order to achieve a military operational objective. The Joint Staff defines *capability* as "the ability to achieve a specified wartime objective." Furthermore, "it includes four major components: force structure, modernization, readiness, and sustainability."[4] The Australian Ministry of Defence defines *capability* as "the capacity or ability to achieve an operational effect . . . described in terms of the nature of the effect and of how, when, where, and for how long it is produced."[5] An effective military capability cannot be equated with a single weapons system; rather, it is "provided by one or more systems, and is made up of the combined effects of multiple inputs."[6] A subordinate definitional question, then, is: What exactly are the key inputs to capability generation?

While it may not always be reflected in the context of foreign capability-building, U.S. and key allied defense establishments have developed sophisticated understandings of the inputs essential to their own capability-generation efforts. The Joint Capabilities Integration and Development System (JCIDS) is used by the U.S. military to provide guidance for "identification of capability requirements and capability gaps, development of requirements documents . . . [and] post-validation development and implementation of materiel and non-materiel capability solutions."[7] It sets forth several key inputs to capability generation represented by the acronym DOTMLPF-P: doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy.[8] The DOTMLPF-P approach urges military planners to examine those eight categories as they develop solutions to a military capability requirement. These elements, under the JCIDS guidance, should be considered in the context of available resources and "must work in concert to ensure consistent decision making while delivering timely and cost effective capability solutions to the Warfighters."[9]

Several similar approaches exist elsewhere. The North Atlantic Treaty Organization has adopted the model in whole cloth, but adds an *I* to the acronym (DOTMLPF-I) to address interoperability. The United Kingdom's Ministry of Defence Architecture Framework directs its capability development process to address training, equipment, personnel, information, concepts and doctrine, organization, infrastructure, and logistics inputs.[10] Interoperability is described as "an overarching theme." The Australian *Defence Capability Development Handbook* identifies similar inputs to its capability development model: personnel, organization, collective training, major systems,

supplies, facilities, support, and command and management. Various academic studies, such as those by Canadian defense scholar Christopher Ankersen and by a team of scholars at the University of Cambridge's Centre for Technology Management, have developed similar frameworks.[11]

These models vary in the inputs they identify, but they share critical characteristics. First, they emphasize that a capability is a complex and interlocking system of inputs rather than a weapons system or personnel unit. Second, they demonstrate that capabilities require inputs from several different levels of a military: at the tactical level, where defense systems and their operators are organized and employed; at the operational level, where these systems are linked with supporting functions such as logistics and intelligence; and at the strategic level, where policies, strategies, and doctrine guide and sustain. Finally, these models recognize that capability generation is a long-term undertaking requiring attention to sustainment across the various inputs. Each of these characteristics is essential for effective capability package planning to build partner nation military capabilities.

For the purposes of this article, then, we can draw from these models a more refined definition of *military capability*: an ability to achieve a specific military operational objective that is supported, enabled, and sustained by all relevant defense systems at the institutional, strategic, operational, and tactical levels.

With the benefit of this definition, let us now develop the CPPM itself. As noted, the model offers a conceptual framework for developing partner military capabilities as guided, clear, transparent, achievable objectives spanning the full spectrum of necessary capability inputs.

Step One: Focusing Capability Development Efforts

The CPPM is built upon the assertion that focusing on the *right* capability to build is half the battle. Step one of the model offers a framework for assessing where to invest limited capacity-building resources and how to understand, map, and seek to mitigate risks to capability-generation efforts. The model requires detailed assessment of the partner nation's security environment and operational conditions that should be taken into account in planning, including assessments of:

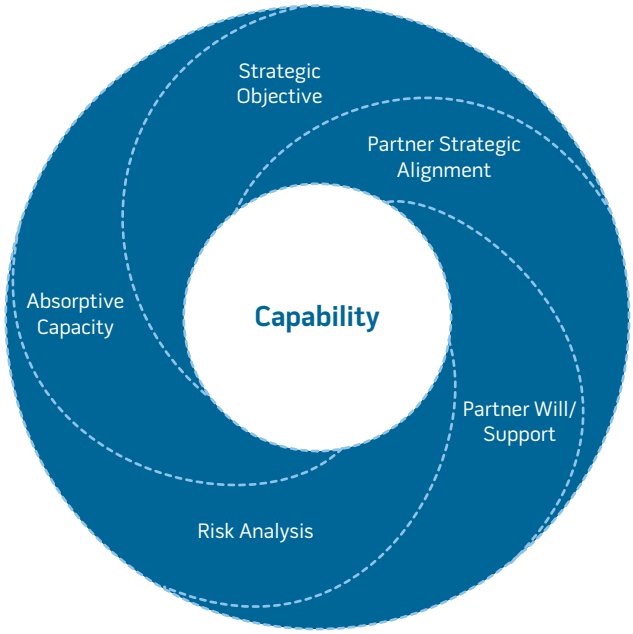
- the provider nation's strategic objectives to be addressed
- the extent to which a partner nation's defense strategy is aligned with the provider's own strategy
- the extent to which a partner nation is committed to building a particular military capability
- the extent to which a partner nation has the capacity to absorb proposed assistance
- the risks associated with a potential capability-building investment.

While these factors are *not* the only relevant factors determining success, they represent the core analytical questions that should determine whether and how investments in capability generation are undertaken (see figure 1).

Strategic Objective. Capability-building programs will have the greatest strategic value to the extent they focus on building partner nation capabilities that directly support the provider's strategic national security interests. Linking capability-building focal areas to provider strategic objectives should begin with an assessment of the partner's security environment: What shared interests or threats are at stake, and which of these are of highest priority to the provider nation? What missions would the partner ideally be capable of conducting in support of, in tandem with, or in lieu of action by the provider? What are the critical capability gaps hindering the partner from playing a more robust role in addressing priority shared interests? How might regional actors react to new partner capabilities? Ultimately, this assessment should enable planners to hone in on capability needs that have a clear, direct, and prioritized link to national and military strategic objectives.

Partner-Nation Strategic Alignment. Equally important is an assessment of whether partner nations have developed coherent national and military strategies, as well as the extent to which such strategies identify objectives that are compatible with provider nation strategic objectives. Does the partner maintain a compatible perspective on shared

Figure 1. CPPM Step 1: Assessing and Focusing Capability Packages



interests and threats? Does the partner's national security or defense strategy take account of such shared interests and threats and prioritize development of capabilities to address them? Is the partner prepared to work with the provider to develop military capabilities? Central to this assessment will be an examination of how the partner understands its military capabilities and gaps and how it seeks to address shared interests or threats through appropriate military capabilities. Partners may be strategically misaligned with providers when strategic guidance is absent or incomplete, when there are widely divergent assessments of core threats, or when partners seek fundamentally incompatible solutions to threats that are mutually identified and prioritized.

Strategic misalignment does not necessarily argue for foreclosing further security cooperation with a partner nation; rather, it should lead to greater focus on intervention at the institutional level instead of a focus on generating operational capabilities. Targeted assistance in development of strategic guidance, as well as mutual exchanges of strategic perspectives, can mitigate strategic misalignment and lay the groundwork for deeper, more productive cooperation in the future.

Partner Nation Support and Will. Success will also depend on whether the partner supports a notional capability-generation effort and whether that partner possesses the political will to invest (in terms of both funding and effort) in developing and sustaining the capability. Capability-building efforts may be doomed to failure by partners who are not sufficiently invested in their completion because such partners are less likely to pursue policy and budget decisions necessary to sustain and effectively employ new capabilities. Persistent diplomatic engagement throughout the life cycle of a capability-generation effort is necessary to assess and maintain partner commitment to the effort's successful completion.

Partner Nation Absorptive Capacity. New military capabilities are almost never developed without a cost. Such costs include the long-term assignment of personnel to support a new capability; fuel, spare parts, and maintenance; development of supporting capabilities such as refueling or reconnaissance; and so on. Assessing a partner's capacity and commitment to absorb such costs should shape the scope of every capability-generation effort.

In many cases, however, it is unrealistic to expect a partner nation to bear all associated long-term costs, and high-priority operational demands may make it equally unrealistic to avoid capability-building activities because of a lack of absorptive capacity. Again, an assessment of partner absorptive capacity should not pose a binary choice of whether to proceed. Rather, such an assessment should identify risks to an effort and support the development of measures to mitigate such risks. Such measures could include long-term commitments of security assistance to support sustainment, investment in the development of institutional planning and budgeting capacities, arrangements for the supply of parts and maintenance services, or targeted training of technicians, logisticians, and other supporting personnel.

Risk Analysis. Finally, planners should take into account systemic risks within a partner nation that could threaten the long-term viability of capability-generation efforts. Risk assessments should not only examine security dimensions but also include analysis of political and economic instability risks, corruption risks, risks associated with significant changes in political direction of partner nation governments, and similar factors. Such assessments should identify the types of risk and map out individuals and organizations likely to impact such risks, for better or worse.

Preliminary assessments of these five elements lay the foundation for smart planning decisions by helping to identify the capability gaps that are most conducive to assistance or cooperation by providers and by illuminating functional areas that serve strategic objectives, that are aligned with partner strategic guidance, and that can be supported and absorbed by partner governments and militaries. These assessments should predict where capability-generation efforts are most vulnerable to failure, facilitate examination of capability trade-offs, and enable planning of risk mitigation measures. They should also help planners map where diplomatic intervention is needed, which individuals within a partner military or government will be vital stakeholders, and where providers might face resistance. In some cases, these assessments may help planners avoid investments that are unlikely to bear fruit, thus helping providers limit losses and demonstrate to partner governments a better track record of success.

Step Two: Defining Capability Inputs

Step two of the CPPM moves from identifying *which* capability should be built to assessing *what* comprises that capability. It suggests a framework for defining capability requirements so as to ensure that all essential inputs are identified and addressed.

This article defines *military capability* as an ability to achieve a specific military operational objective that is supported, enabled, and sustained by all relevant defense systems at the institutional, strategic, operational, and tactical levels. While drawing upon the discussion of the DOTMLPF-P model and related approaches, step two of the CPPM framework seeks to operationalize this definition through a simpler approach to facilitate ease of use and applicability to a wide range of partner military structures. It suggests that a military capability consists of proficiency in five primary areas: defense systems; personnel; enablers; strategy, doctrine, and plans; and institutional support and oversight (see figure 2). Each of these elements is mutually reinforcing and interdependent. Significant shortfalls in one area can decisively undermine efforts to build capacity in others. The five elements are discussed in more detail below.

Defense Systems. The defense system component of a capability requires that a partner nation obtain materiel that is appropriately matched to the particular capability sought; thus, successfully

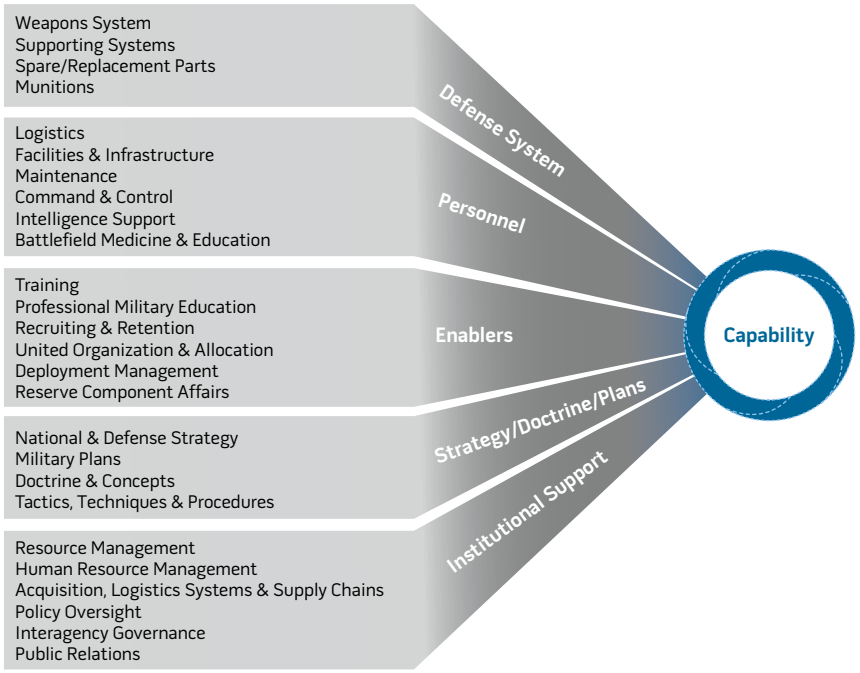
planning a capability-generation effort requires that capability requirements are defined with sufficient rigor and detail to allow materiel solutions to be appropriately matched to needs.[12] A defense system may include a weapons system, vehicles such as aircraft or boats, munitions, communications equipment, and other defense articles, as well as the spare and replacement parts and support equipment necessary to maintain it.

Personnel. The personnel component requires that the partner nation ensure appropriate military personnel are assigned, organized, and trained to support the capability—not only to operate relevant equipment but also to provide critical enabling and support functions. Trained personnel are not simply proficient in operating a defense system, but also can do so in accordance with doctrine, policy, procedures, strategy, and commanders' guidance. For a capability to be fully developed, a partner military should maintain a training and education system that provides for a steady pipeline of personnel adequately trained to support the capability. The partner must also organize its military forces appropriately to achieve and maintain a capability. In a well-organized force, subordinate components coordinate action with other subordinate components and enable the broader component to accomplish its mission.

Enablers. Every defense system is supported by an array of functions that enable the effective, sustainable, repeatable employment of the system. One of the most critical enabling functions—one that, when neglected, is among the most common points of failure in partner nation capacity-building efforts—is logistics. Logistics should be understood to encompass several different functions that empower a military to deploy and support its forces, including "deployment and distribution, supply, maintenance, logistic services, operational contract support, engineering, and health services."[13] Infrastructure and basing are also relevant considerations.

Among several other enabling functions, two should be particularly highlighted: C4ISR and interoperability.

Figure 2. Inputs to Full-Spectrum Capability Development



C4ISR—command, control, communications, computers, intelligence, surveillance, and reconnaissance—enables military leaders to exercise authority to direct resources and personnel to achieve specific missions. Interoperability is the enabling function behind coalition operations; it is the ability of different military services (both within and among nations) to operate together to achieve a common goal. As a 2001 RAND study demonstrates, interoperability includes "the ability of forces from different nations to work effectively together given the nature of the forces and the combined military organizational structure"; "the effectiveness of the combined military organizational structure"; and "the degree of similarity of technical capabilities of the forces from different nations."[14] Interoperability is thus not simply a matter of effectively interfacing technologies; it includes organizational and institutional elements as well.

Strategy, Doctrine, and Plans. Effective military capabilities are employed in alignment with national military strategies, according to military doctrine, in support of specific military plans. Military or defense strategies guide the use of the military instrument to achieve specified objectives, ideally with clearly defined relationships between desired ends and available ways and means. Doctrine provides a common conceptual foundation for how military forces should execute military strategies. As defined by the JCIDS, *doctrine* consists of "fundamental principles that guide the employment of . . . military forces in coordinated action toward a common objective."[15] It is authoritative guidance to be followed except when commanders determine exceptional circumstances require an alternative approach. Strategy and doctrine inform military plans, which provide formalized constructs for executing specific military actions.

Institutional Support and Oversight. An effective military capability requires robust institutional support and oversight—that is, the institutional-level formal and informal processes and personnel responsible for implementing such processes, who operate to plan, direct, sustain, and oversee institution-wide policies, programs, and activities in support of effective and sustainable military action. Defense institutions oversee numerous functions that ensure a particular capability can endure. Among the most critical is *oversight*: the active

U.S. Army 173rd Airborne Brigade Soldiers conduct airborne operations during Exercise Allied Spirit II at U.S. Army's Joint Multinational Readiness Center in Hohenfels, Germany, August 13, 2015 (U.S. Army/Caleb Barrieau)

and persistent exercise of mechanisms to examine whether military programs and activities are meeting stated objectives, timelines, policy and legal guidance, and quality standards. Furthermore, defense institutions are responsible for providing clear policy guidance; ensuring a long-term strategy for resourcing capabilities through budget planning and acquisition processes; ensuring long-term force development and human resource management strategies; and managing relationships, agreements, and activities with allies and partners. Finally, defense ministries often play essential, if not leading, roles in managing civil-military relations and in managing intragovernmental or interagency processes.

Institutional support and oversight are the most often neglected of the core capability components listed. Few of the capability development models discussed previously, for example, adequately highlight the criticality of institutional mechanisms for overseeing implementation of capability-generation activities. Despite the scant attention that this core capability receives, no military capability will endure without robust institutional oversight and support.

These five categories provide a framework for conceptualizing essential inputs in developing a partner military capability. They capture the concepts of capability development models used by the U.S. military and others, but are simplified for greater applicability and adaptability. An understanding of these inputs should guide and enable assessments of partners' capability gaps and requirements, concepts for addressing the most pressing gaps across the spectrum of inputs, identification of significant risks to an activity's success, and development of truly comprehensive capability *packages* that address multiple inputs in a mutually reinforcing fashion through the combination of appropriate security cooperation tools.

Step Three: Capability Development Activities

Step one of the CPPM attempts to help planners assess *which* capability should be built, and step two examines *what* comprises that capability. Step three suggests a framework for planning *how* to build the selected capability. It asserts that effective capability-generation efforts require a sustained and integrated set of security cooperation activities across spectrums of duration, scope, and difficulty. Just as a capability cannot be equated to a weapons system, a capability cannot be built through a single activity or program. What is needed is a range of engagements, including both short-term and long-term programs; activities targeting single individuals, small units, and broader audiences; and efforts requiring more and less intensive activities.

This framework groups security cooperation activities into five main categories:

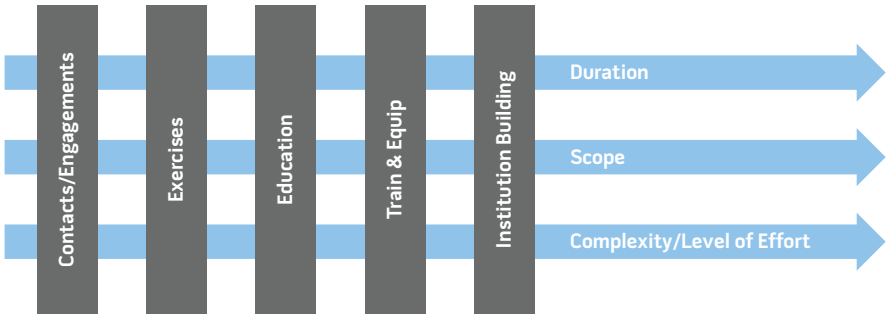
contacts and engagements, exercises, education, train-and-equip activities, and institutional capacity-building activities. These categories move roughly along a spectrum from short term to long term, from the individual level to the collective level, and progressively toward a higher degree of complexity (see figure 3).

Contacts and Engagements. Most militaries engage in a range of short-term, small-scale activities designed primarily to build military-to-military relationships, familiarize partners with new information such as tactics or doctrine, and develop common standards and operating procedures. Such activities can be categorized as contacts and engagements and may include military staff talks, subject matter expert exchanges, personnel exchanges, conferences and seminars, and similar activities.

While contacts and engagements are primarily of benefit in building relationships, they can also be important elements of broader strategies to build partner military capabilities and should be planned as such. For example, subject matter expert exchanges can assist in shaping partner nation thinking about the development of doctrine for new weapons systems or in highlighting the need for enabling support such as logistics systems. Seminars can be used to convene planners from two or more partner nations to develop approaches to interoperability. Military staff talks can reinforce partner political commitment to the development of new capabilities. In short, contacts and engagements should be integrated throughout the capability development life cycle to supplement, reinforce, and maintain commitment to more enduring or intensive programming.

Exercises. Many militaries conduct preparatory exercises to train their personnel to exercise essential military activities, prepare for likely scenarios, and assess vulnerabilities in planning and execution. Combined exercises—those involving two or more partner nation militaries—are often used both to seek such training benefits and to help train partner military personnel, expose them to new tactics, and assess their effectiveness. As such, combined exercises can play an important role in supporting the development of military capabilities in a partner country.

Figure 3. CPPM Step 3: Capability Development Activities



To the extent possible, combined exercises should be designed specifically to put into practice partner nation military capabilities in development. Doing so allows such exercises to provide practical training in realistic scenarios to military personnel associated with a developing capability and to expose them to different models of how to exercise a particular capability. Furthermore, such exercises allow planners to assess progress in developing capabilities, identify areas where progress is lagging, and adjust programming accordingly.

Education. The education category is intended to capture the range of training and education activities that target individual students or participants for tailored or structured learning, often in a classroom environment. The most common type of activity in this category is the inclusion of partner nation military or defense civilian personnel in academic or continuing military education schoolhouse courses. In the United States, programs such as International Military Education and Training and the Counter Terrorism Fellowship Program bring hundreds of foreign military students into classrooms, ranging from military Service academies to civilian university graduate schools, every year. Other educational activities are more tailored to improving technical skills; for example, the U.S. Naval Small Craft Instruction and Technical Training School teaches skills necessary for the effective operation and maintenance of small maritime vessels. Finally, education and training programs reach outside the schoolhouse through mobile training teams and similar field-based training.

Educational programs have proved effective as tools both to build military-to-military relationships and to impart essential skills to select partner nation military personnel. However, rarely are educational programs sufficiently integrated into broader capability-generation efforts. Such programs offer opportunities to educate well-positioned current and future military leaders in skills and tradecraft directly associated with a developing military capability, and thus to build a cadre of professionals across levels of rank and experience to manage and sustain the new capability.

Train-and-Equip Activities. Often classified as "security assistance" within the United States, these activities consist of programs designed to convey materiel to partner nations and to provide training relating to such materiel, though training often narrowly targets operators of the new equipment. These programs, which include sales, grants, and loans of military equipment, have been the bread and butter of capability-building efforts.[16] However, too often they have focused exclusively on delivery of a weapons system without integration of supporting functions and capabilities.

Train-and-equip programs are most effective when they develop packages that invest both in weapons systems and in necessary supporting equipment, such as logistics assets and intelligence, surveillance, and reconnaissance systems. Such packages will ideally include training for system operators, military planners,

Dutch soldiers take part in Combined Resolve, which trains participants in joint, multinational, and integrated environments alongside U.S. and NATO allies (U.S. Army/John Cress, Jr.)

logisticians, personnel with critical C4ISR roles, and others in enabling functions. Maintenance of new equipment—a function often contracted out—is a core function that should be developed as part of any significant new capability.

Institutional Capacity-Building Activities. Developing effective institutional systems for budget and personnel management, strategy and doctrine development, strategic planning, acquisition, logistics, military intelligence, and other vital functions requires long-term and carefully tailored engagement. Institutional capacity-building is the most often neglected element of capability generation, yet it is the element most vital to ensuring enduring capability. From the "ghost soldiers" on Afghan and Yemeni budget books to the lack of logistics systems driving the 2011 collapse of Mali's army, U.S. capability development efforts have been plagued by institutional neglect. Institutional capacity-building activities should target defense ministries and, in some cases, other security ministries; service-level headquarters units; and other strategic-level military units, such as joint staffs or functional commands.

An effective capability-generation effort will plan and integrate activities across each of these five categories, matching them across each of the five capability components identified in CPPM step two. For example, building capacity in the personnel component may involve institutional capacity-building activities to help a partner nation develop a viable professional military education plan; educational programs to build knowledge and skills among a key leadership cadre associated with a new capability; subject matter exchanges to examine approaches to force structuring and manning in relation to the capability; and focused, field-based training of a core group of personnel, both operators and enablers, in support of the new capability. Such cross-cutting approaches should be applied to each capability component. However, with resources often limited, planners will commonly need to make choices about where to prioritize activities; such choices should be informed by the capability gaps and programmatic risks identified through assessments undertaken in step one.

Step Four: Overarching Considerations

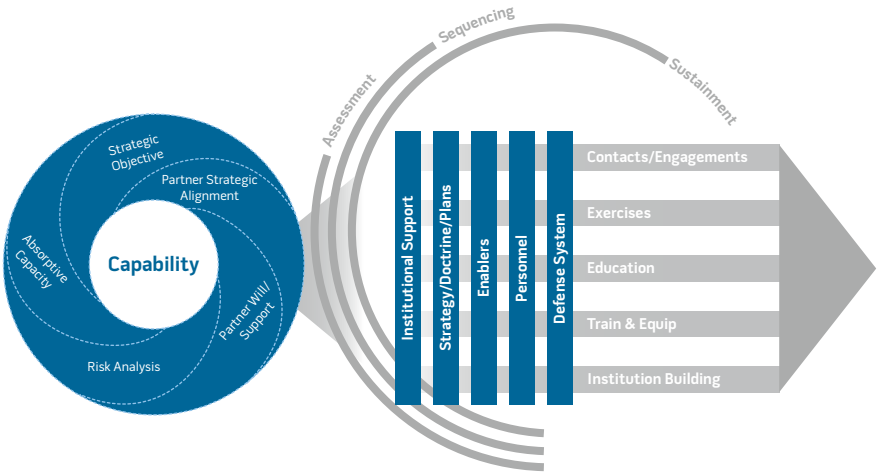
The final layer of the CPPM highlights three overarching considerations that should be addressed throughout each of the other three steps. The first overarching consideration is *assessment*, which entails evaluating capabilities, capability gaps, and capability-building efforts throughout a program's lifecycle. A second consideration is *sequencing*: the order and pace of programming planned as part of a capability-generating effort. Finally, security cooperation

planners should consider how to address *sustainability*: the potential for elements of the capability to endure throughout a capability-generation effort.

Assessment. Assessments should guide security cooperation activities throughout the lifespan of a capability-generation effort. Well-conceived initial assessments help planners identify capability gaps and potential program risks to provide a baseline to measure the results of future investments and performance. Intermittent evaluations of program effectiveness steer course corrections to reorient programs that are failing to deliver desired results. Evaluations at the end of individual activities or broader capability development efforts produce vital feedback about what works and what does not, providing lessons to future planners and empowering policymakers to address flaws in existing authorities, policies, and resource allocations. Finally, assessments and evaluations are vital tools for pursuing accountability—that is, ensuring that partner legal, policy, and financial commitments are achieved—an essential element of effective security cooperation.

Sequencing. A well-conceived implementation plan for developing a partner military capability will sequence activities according to order, duration, and intervening time to maximize success of the overall effort. Initial assessments will help identify what capability gaps are most urgent, and persistent engagements will offer opportunities to refine those conclusions. In sequencing security cooperation activities, planners should consider the following questions: Are there prerequisites to capability-building work in a particular area? Will addressing certain areas early in a capability-generation effort significantly mitigate risk to the broader effort in the long run? Do the planned sequence and pace of activities comport with partner nation absorptive capacity? What activities are needed during the course of the long-term capability-generation effort to maintain partner support for the effort, and when should they occur? The order and pace of activities should reflect such analysis.

Figure 4. The Capability Package Planning Model



Sustainment. Except in limited cases, capability development efforts should aim to create capabilities that are enduring and sustained by partner nation militaries themselves. This goal requires addressing sustainment concerns throughout the lifespan of a capability development effort and across the capability spectrum. It demands, for example, that defense systems provided to a partner be accompanied by budgetary estimates of the costs of sustainment and support over the life of the system and that a viable plan for meeting such costs is established. This goal demands we examine how to build indigenous capacities for certain critical functions, such as logistics, where possible rather than only providing contract support. It requires that we work with a partner to ensure that the capability is adequately accounted for in national strategic and doctrinal guidance. When planners fail to develop long-term plans that plot out capability-generation efforts over the course of sustained engagements and multiple activities, sustainment of the capability nearly always suffers.

Conclusion

The Capability Package Planning Model offers a conceptual framework for how planners and policymakers should conceive of the critical analytical and programmatic inputs to building partner nation military capabilities (see figure 4). The model is not intended to dictate a step-by-step planning checklist, but to emphasize an approach to capability-building that is rooted in best practices for force development and careful analysis and mitigation of programmatic risks. There are three broad implications of this conceptual framework.

First, capability development must be planned as a long-term and multifaceted undertaking; it is unlikely that any single program or line of activity, no matter how robust, will successfully build an enduring military capability.

Second, the planning phase demands far more emphasis than it currently receives. Because many security cooperation planners are already overtaxed, the only way planning will receive the attention and resources it demands is for security cooperation planners to be robustly supported by policy and programmatic experts at combatant commands, within the Services, and in the Pentagon. Without robust reachback, long-term security cooperation planning will be overwhelmed by limited bandwidth and pressing deadlines.

Finally, building partner nation military capabilities is an interagency task, not a Defense Department mission alone. Military capability development requires sustained diplomatic engagement to ensure sustained partner nation commitment. Furthermore, it requires sufficient capacities to exist across the partner government and interventions by other provider nation agencies to support development of those capacities where

necessary. For that reason, even the most targeted military capability-building efforts require whole-of-government support.

Capability package planning is not a silver bullet for ensuring positive capability development outcomes. Too many variables impact success for any silver bullet to exist. What it does offer is a pathway to success. Too often, security cooperation programs are disconnected, nonstrategic, and one-dimensional; therefore, it should come as no surprise that critics have asked whether capacity-building programs might be inherently incapable of delivering positive results. The CPPM offers an approach to connecting the dots across the complex spectrum of capability generation. Only by connecting these essential inputs and activities can we hope to build enduring capabilities that enable our partners to collaborate more effectively in confronting the increasingly complex challenges to U.S. national and global security. **JFQ**

Notes

[1] *National Security Strategy* (Washington, DC: The White House, February 2015), 7, available at <www.whitehouse.gov/sites/default/files/docs/2015_national_security_strategy.pdf>.

[2] Department of Defense Directive 5132.03, "DoD Policy and Responsibilities Relating to Security Cooperation" (October 24, 2008), defines *security cooperation* as "Activities undertaken by the Department of Defense to encourage and enable international partners to work with the United States to achieve strategic objectives. It includes all DoD interactions with foreign defense and security establishments, including all DoD-administered security assistance programs, that: build defense and security relationships that promote specific U.S. security interests, including all international armaments cooperation activities and security assistance activities; develop allied and friendly military capabilities for self-defense and multinational operations; and provide U.S. forces with peacetime and contingency access to host nations." Available at <www.dtic.mil/whs/directives/corres/pdf/513203p.pdf>.

However, for purposes of this article, security cooperation should be understood to include activities undertaken by all relevant agencies of a government with relevant security agencies and actors of international partners to encourage and enable those international partners to work with the United States to achieve strategic objectives, with a primary connotation of activities within the defense sector of an international partner designed to build defense and security relationships and capabilities.

[3] Sean McFate, "Raising an Army: Ten Rules," *War on the Rocks*, July 14, 2014, available at <http://warontherocks.com/2014/07/raising-an-army-ten-rules/#_>.

[4] Chairman of the Joint Chiefs of Staff Guide 3401D, *CJCS Guide to the Chairman's Readiness System* (Washington, DC: The Joint Staff, November 25, 2013), available at <www.dtic.mil/cjcs_directives/cdata/unlimit/g3401.pdf>.

[5] *Defence Capability Development Handbook 2012* (Canberra: Australian Government Department of Defence, December 2012), available at <www.defence.gov.au/publications/DefenceCapabilityDevelopmentHandbook2012.pdf>.

[6] Ibid.

[7] Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01H, "Joint Capabilities Integration and Development System," January 10, 2012, available at <www.dtic.mil/cjcs_directives/cdata/unlimit/3170_01.pdf>.

[8] Critics of the JCIDS framework, of which DOTMLPF-P analysis is a core element, have questioned its effectiveness as a tool for developing U.S. military capabilities that are affordable, timely, and appropriately tailored, noting that the system lacks agility and often generates significant program delays and cost overruns. This article does not intend to make assertions regarding the effectiveness of the overall JCIDS framework; rather, it highlights the DOTMLPF-P analytical lens as useful, conceptually, in understanding and specifying elements of capability development.

[9] CJCSI 3170.01H.

[10] United Kingdom Ministry of Defence, "Defence Lines of Development Analysis with MODAF," February 2, 2009, available at <www.gov.uk/government/uploads/system/uploads/attachment_data/file/36720/20090210_MODAFDLODAnalysis_V1_0_U.pdf>.

[11] Christopher Ankersen, "Capabilities and Capacities," in *Transforming National Defence Administration*, ed. Douglas L. Bland (Kingston, Ontario: Queens University, 2005); Clive Kerr, Robert Phaal, and David Probert, "A Framework for Strategic Military Capabilities in Defense Transformation," paper presented at the 11th Annual International Command and Control Research and Technology Symposium, London, England, September 2006, available at <www.dodccrp.org/events/11th_ICCRTS/html/papers/061.pdf>.

[12] *Materiel* refers to military equipment and supplies; it encompasses weapons systems, supporting military assets, parts, ammunition, and other material supplies used directly in support of military activities.

[13] Joint Publication 4-10, *Joint Logistics* (Washington, DC: The Joint Staff, October 16, 2013), available at <www.dtic.mil/doctrine/new_pubs/jp4_0.pdf>.

[14] Myron Hura et al., *Interoperability: A Continuing Challenge in Coalition Air Operations*, MR1235 (Santa Monica, CA: RAND, 2001), 7, available at <www.rand.org/content/dam/rand/pubs/monograph_reports/MR1235/MR1235.chap2.pdf>.

[15] CJCSI 3170.01H.

[16] In the United States, train-and-equip programs include, among others, Foreign Military Sales and Foreign Military Financing, Global Security Contingency Fund, and the newly codified Defense Department Authority to Build the Capacity of Foreign Security Forces (Section 1205 of Public Law 113-291, the "Carl Levin and Howard P. 'Buck' McKeon National Defense Authorization Act for Fiscal Year 2015").

Medical team members provide emergency room support as part of New Horizons Honduras 2015 training exercise, improving joint training readiness of U.S. and partner nation civil engineers, medical professionals, and support personnel through humanitarian assistance activities, August 7, 2015 (U.S. Air Force/David J. Murphy)

Global Health, Concepts, and Engagements

Significant Enhancer for U.S. Security and International Diplomacy

By Aizen J. Marrogi and Edwin Burkett

The United States and its global allies face a multitude of challenges to peace and stability. Civil wars in Syria, Yemen, Ukraine, and parts of Africa compound sectarian disorder in the aftermath of U.S. operations and subsequent withdrawal from Iraq and Afghanistan. Moreover, decades-old Israeli-Palestinian conflict, political unrest in Egypt and Turkey, and Iran's attempts to dominate the region—countered by pushback from Saudi Arabia and Gulf allies—contribute to geopolitical turmoil. Compounding matters are the emergence of

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Daesh (the Islamic State of Iraq and the Levant) and other extreme theocratic groups and the uprooting of more than 9 million human beings, causing a complex humanitarian catastrophe rarely witnessed in modern times. Against these overwhelming difficulties, Muslims, Arabs, and the rest of the world expect and anticipate U.S. forward engagement to help resolve many of these threats.

Over the last 200 years, the United States has engaged in foreign conflicts against state and nonstate actors, with successful outcomes against the former (Spanish- and Mexican-American wars, World War I, World War II, and the Gulf wars) and guarded withdrawals when facing the latter (pirates of Tripoli, Red Russians, and Vietnam). Where the United States has failed to achieve full military and political victory has been against nonstate actors and groups with strong ideological convictions and motivations (current engagements with Daesh and the Taliban appear to follow these lines). The challenge for U.S. leaders is how to win asymmetric kinetic wars against a motivated enemy who either intimidates or has the sympathy of the local population. In accordance with stability and counterinsurgency principles, efforts to win must be directed at the population as the center of gravity.

The health system of a nation includes essential services that can positively influence a population if harnessed and sustained by the legitimate host nation authority. Additionally, the health system is a development engine that has a cyclical relationship with intellectual, innovative, and economic growth. As part of a comprehensive approach to security and stability, attention to the health sector can be a significant enabler of success in these complex operational environments.

The United States has capabilities, resources, and a historical desire to use health in building strong partnerships through engaging the health sector of foreign countries. Appropriate policy, doctrine, and authority for Department of Defense (DOD) health engagement are currently being refined, and validation of outcomes is being pursued. Our intention in the following articles on Global Health Engagement is not only to highlight military and diplomatic applications, but also to discuss the challenges of leadership preparation, understanding health systems, and ethical and humanitarian complexities. The U.S. military health system is rightfully focused and adequately prepared to meet its primary mission of care for deployed forces as well as forces and families at home. However, we are just beginning to improve capabilities for Global Health Engagement in the joint operating environment.

The target audiences for this conversation are military and Federal strategic decisionmakers who impact the development, organization, and employment of DOD health assets. Such leaders, in addition to health leaders, must grasp the great potential for the correct employment of health in support of regional and global interests. Since these leaders also serve as the integrators between and across agencies, a common basis of knowledge in health will be invaluable in moving toward improved outcomes and strategic effects.

Joint Force Quarterly shall publish additional articles in the series in the future. Therefore, we have organized the series into four major categories and have purposely asked contributors from different U.S. agencies and nonmedical disciplines to author pieces from their strategic viewpoints. Category one should help the reader understand the basics of global health and appreciate the significance of health capabilities as strategic assets for diplomacy and security. The second category focuses on how operational DOD health efforts can open doors and build partnerships through security assistance, security cooperation, and shaping and stability applications. The third category highlights specific regional issues or examples of health engagement and activities by various agencies with a goal of illustrating the depth of health engagement that the United States is involved in around the world. The final category includes forward-looking articles intended to stimulate the reader to contemplate policy, doctrine, training, and employment needs that will optimize the future application of DOD health engagement.

The first three articles published in this issue aim to set the basis for Global Health Engagement, discuss its place within the humanitarian community, the local cultural context, and look at aspects of health where DOD can harness capabilities for positive impacts. The first article by Gerald V. Quinnan, Jr., provides a background for global health and overview of the progress of DOD Global Health Engagement. Next, Paul A. Gaist and Ramey L. Wilson discuss the interaction among nongovernmental organizations, the larger humanitarian community, and military forces. Agreed rules of cooperation among actors operating in the same complex environment are crucial.

The last article explores specific skill sets about disaster relief (Thomas R. Cullison, Charles W. Beadling, and Elizabeth Erickson). These capabilities can be applicable on a sustainable basis in different types of operations, including humanitarian relief for displaced populations. The article on disaster relief also touches on the agreements that govern such efforts, such as the Oslo Guidelines.

The U.S. Government as well as other state and nonstate actors, friendly and competitor, have all attempted to employ health in some fashion for both altruistic reasons and for political outcomes. This series of articles is an effort to explore some of the multiple aspects of this arena for future positive outcomes. **JFQ**

As part of Pacific Partnership 2013, U.S. Navy forces are joined by NGOs and regional partners including Australia, Canada, Colombia, France, Japan, Malaysia, Singapore, South Korea, and New Zealand to improve maritime security, conduct humanitarian assistance, and strengthen disaster-response preparedness (U.S. Navy/Samantha J. Webb)

The Future of Department of Defense Global Health Engagement

By Gerald V. Quinnan, Jr.

The term *global health* has come into common usage in recent years and encompasses various matters relevant to health, including diseases that cross international borders, factors that affect public health globally, and the interconnectedness of health matters around the globe. Diseases that have been unevenly distributed across the world have been of concern to militaries for centuries, perhaps throughout history. Historians record that the decimation of Napoleon's army during his invasion of Russia was the result of starvation, severe weather, and disease, the most important of which was typhus, which killed over 80,000 troops.[1] His retreating army then spread typhus throughout Europe. Likewise, typhoid fever was a serious problem in World War I and the American Civil War.[2] Spanish troops were severely affected by yellow fever during the Spanish-American War, and Spanish influenza

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had disproportionate and decisive effects during World War I.[3] Colonization of Africa, Asia, and Latin America by Western powers led to increased awareness of diseases that were generally exotic to the imposing country, motivating interest in developing means of prevention and control of diseases. Examples of efforts emanating from such interest include the work of Walter Reed and William C. Gorgas in defining the transmission and prevention of yellow fever, research regarding cholera and diarrhea in Bangladesh, and the establishment of research laboratories (for example, the Pasteur Institute and Medical Research Council laboratories in Africa). Conversely, the invasion and colonization of foreign lands has also long been known to result in the introduction of exotic disease into the occupied lands, with the importation of smallpox and syphilis into North America by colonists as outstanding examples.

Because of the importance of global infectious diseases regarding force health protection, the Department of Defense (DOD) has developed numerous programs relevant to the infectious disease dimension of the worldwide global health efforts, and these programs are a prominent dimension of the overall DOD global health engagement (GHE) agenda.

Many of the diseases that are important force health protection issues for deployed warfighters are diseases caused by poverty, a factor that is relevant to the future GHE agenda. The high rate of typhus in Napoleon's forces reflected the abject poverty of Russian peasants at the time. As a result of living conditions, louse infestation was rampant. Since lice are the vector that transmits typhus, the risk of infection was high. The geographic distribution of typhus today reflects the prevalence of louse infestation. Many other diseases that we refer to as tropical are also spread by insects and were present in the United States and other developed countries in the past. The predecessor of the Centers for Disease Control and Prevention (CDC), "the Office of Malaria Control in War Areas, [was] established in 1942 to limit the impact of malaria and other vector-borne diseases (such as murine typhus) during World War II around military training bases in the southern United States and its territories, where malaria was still problematic. The center was located in Atlanta (rather than Washington, DC) because the South was the area of the country with the most malaria transmission."[4] Yellow fever epidemics occurred on numerous occasions in the United States during the 18th and 19th centuries; one of the more serious outbreaks caused more than 10,000 deaths in the Philadelphia area in 1793, which led President George Washington to move the Federal government to its present location in Washington.[5] Other examples of what are now considered tropical diseases causing epidemics in the United States are plentiful, but in many cases vector control has resulted in their elimination. Limited capacities to mount vector control efforts or to prevent human exposure underlie continued transmission of these diseases in the developing world.

In the late 19th and early 20th centuries, various international efforts were made to standardize quarantine procedures to limit transmission of cholera, smallpox, tuberculosis, and other diseases. In the United States, officers of the Marine Hospital Service, the predecessor organization of the U.S. Public Health Service, boarded boats entering territorial waters. Presently, the Federal agency with responsibility for quarantine procedures is the CDC. After World War II, the establishment of the United Nations (UN) and its subordinate organization, the World Health Organization (WHO), presented great opportunities for multinational cooperation on health. Some advances that emerged included the development of international health regulations that standardized procedures for restriction of movement of infectious diseases between countries, facilitation of vaccine and drug development, standardization and availability, and numerous types of multinational cooperation for the development of disease surveillance and health promotion activities. The importance of health as a *global* issue is reflected in the annual World Health Assembly, where the lead health diplomat of each member country votes regarding procedures and programs being put forward by the WHO. These relationships are an important part of the context in which GHE is executed.

The major growth of global health as an academic discipline has been fostered by a number of geopolitical events over the past three decades. In 1978, the WHO and the UN Children's Fund convened the International Conference on Primary Health Care in Alma Ata, Kazakhstan. This conference adopted a declaration that has come to be known as the Declaration of Alma Ata (International Conference on Primary Health 1978). The declaration stressed the importance of social and economic factors in the attainment of health and reaffirmed health care as a human right. It declared the inequality between developed and developing countries to be politically, socially, and economically unacceptable. Furthermore, it drew linkage between the health of people and the social and economic development that fostered world peace. The declaration has been repeatedly recognized by the UN High Commission on Human Rights, which has emphasized the inclusion of health as a basic human right in international law throughout the past 60 years.[6] These statements have emphasized the responsibilities of countries, international organizations (IOs), nongovernmental organizations (NGOs), and funding and donor organizations to contribute to a concerted effort in support of the goal of equal access to health care for all.

In 2000, the UN Millennium Summit issued the UN Millennium Declaration that included a set of eight Millennium Development Goals (MDGs). Three of the goals directly addressed health, one that was focused on environment was extensively health related, and the remaining four were focused on poverty, education, and development. The juxtaposition of the broader social development goals and health emphasizes the relationships among them. The MDGs were supported by the Organisation for Economic Co-operation

and Development, and the major donor countries agreed to provide funds to the World Bank and International Monetary Fund for debt relief for the poorest countries. In 2001, the Global Fund to Fight AIDS, Tuberculosis, and Malaria was established by the UN and Group of 8, committing substantial funds to this effort to be administered by a secretariat in Geneva. Today, the "Global Fund is the main multilateral funder in global health, channeling approximately US$3 billion annually—two-thirds of all international financing for [tuberculosis] and malaria, and one-fifth of all international financing for AIDS."[7]

In the United States, the U.S. Leadership Against HIV/AIDS, Tuberculosis, and Malaria Act of 2003 led to the establishment of the President's Emergency Program for AIDS Relief (PEPFAR), which is now administered by the Office of the Global AIDS Coordinator. The U.S. Global Health Initiative (GHI) emerged from a 2010 Presidential policy directive on global development and is administered by the Office of Global Affairs in the Department of Health and Human Services.[8] GHI is responsible for coordination of interagency efforts related to global health, including activities related to the Global Fund and PEPFAR. The GHI also served as a platform for engagement of the United States in development of the Global Health Security Agenda of 2011.[9] The GHI has seven areas of focus (see table). As government-wide coordinating programs, the GHI and Global Health Security Agenda apply to activities of all departments, including DOD GHE. Some particularly relevant considerations for policy are their focus on country ownership, systems approach to health, coordination and integration with key stakeholders, and monitoring and evaluation.

Regarding policy development relevant to DOD GHE, a whole-of-government focus on stabilization of peace through development was established as a result of the 2005 National Security Presidential Directive 44, "Management of Interagency Efforts Concerning Reconstruction and Stabilization." For purposes of implementation of the directive, DOD Directive 3000.05, "Military Support to Security, Stability, Transition, and Reconstruction Operations," was issued in November 2005 and established the policy that "stability operations are a core U.S. military mission that the Department of Defense shall be prepared to conduct and support. They shall be given priority comparable to combat operations."[10] DOD has acted on many fronts over the past decade to implement the intent of this directive, including the ongoing efforts of the DOD Global Health Working Group to finalize the full range of military requirements for implementation via a doctrine, organization, training, materiel, leadership, personnel, and facilities approach. The study by the Center for Strategic and International Studies titled *Global Health Engagement: Sharpening a Key Tool for the Department of Defense* reviews a series of policy developments regarding national security and defense since 2010, including a policy directive by the Secretary of Defense in 2013.[11] The policy directive includes key areas of focus of the GHI, as mentioned above.

Table. Areas of Focus of the U.S. Global Health Initiative

Focus on women, girls, and gender equality
Encourage country ownership and invest in country-led plans
Build sustainability through health systems strengthening
Strengthen and leverage key multilateral organizations, global health partnerships, and private-sector engagement
Increase impact through strategic coordination and integration
Improve metrics, monitoring, and evaluation
Promote research and innovation

All of these international and U.S. Government activities have been associated with a greatly increased focus on global health in the private sector. Indeed, the WHO, many smaller foundations, and many NGOs have worked for decades to improve the health of populations around the world, but these major initiatives brought large amounts of new funding and galvanized the efforts of organizations already engaged. Private foundations, including the Gates Foundation and others, have mobilized funding. While the Global Fund remains the largest contributor, these private funds have been important. In academia, the Consortium of Universities for Global Health (CUGH), established in 2008, has been a consolidating force for diverse types of research related to the principles and practice of global health and is an important forum for concerns relevant to DOD GHE. Increasingly, universities are establishing Global Health Programs in accord with CUGH recommendations, enhancing their ability to impact the communities they serve. The Uniformed Services University of the Health Sciences formally established its program in 2013 and was admitted to membership in CUGH. The extensive engagement of academia reflects the widespread belief that education and research are essential, and the increasing recognition that solutions to problems require multifaceted collaborative efforts of many different health and non-health sectors of society. Such efforts recognize that environmental factors are relevant to many chronic diseases and that sociocultural factors impact greatly on maternal and child health. Factors that perpetuate the cycle of poverty adversely affect population health.

The MDGs have served as a set of principles and have engendered momentum for the improvement of global development and health. When established, the intention was that they would be replaced after 15 years by a new set of goals that would build on progress made under the MDGs and set new targets for development for the following 15-year period. Thus, the MDGs were to be replaced at the end of 2015 by a set of Sustainable Development Goals (SDGs).[12] As with the MDGs, the consensus process for writing of the SDGs has been coordinated by the UN and has consisted of numerous

international conferences that collectively have identified impediments to sustainable development around the world. Health, clean water, and sanitation are major goals, while the document includes a strong emphasis on protection of the environment and mitigation of global warming. The notion of equality for people of all nations regarding all the SDGs is an overarching principle. Since the consensus process has involved all of the organizations that have partnered in working toward achievement of the MDGs, the momentum is likely to continue.

Precedents

As a result of recognition of its combined expeditionary and portable health services capabilities, DOD is often asked to provide emergency support for international aid activities. These responses may be land- or sea-based. Examples include responses to the earthquakes in Pakistan in 2005 and Haiti in 2010, respectively, and the management of logistics and public health for large populations of displaced people as a result of conflicts in Kosovo in 1999 and Macedonia in 2001. These types of operations are always conducted in concert with civil authorities, with responsibility for ongoing response management transferred to them at the earliest reasonable time.

The Law of Armed Conflict (LOAC) requires both that military forces provide care to enemy combatants on the battlefield and that conquering armies provide essential services to occupied populations. The U.S. military has consistently carried out these responsibilities. The LOAC does not require provision of health care to the local noncombatant populace, but the U.S. military has a tradition of providing such care under limited circumstances and on a temporary basis until responsibility can be passed back to the host nation. During the recent conflicts in Iraq and Afghanistan, the U.S. military expended great effort toward helping those nations build healthcare capability. The development of these capabilities not only was considered important for the stability of the host nation security forces, but it also had potential positive spillover impact on health services for the general populations.

DOD and the CDC have been lead agencies in global infectious disease surveillance efforts. DOD maintains laboratories overseas at several sites, including U.S. Army labs at Bangkok and Nairobi and Navy labs at Cairo, Lima, and Singapore. Satellite activities are carried out at various locations by these laboratories. Each of the fixed overseas laboratories carries out extensive infectious disease surveillance while also carrying out extensive de facto health diplomacy and assisting the host nation and nearby countries in development of their own capacities for disease surveillance. While a key justification for the maintenance of such laboratories relates to protection of U.S. forces that may be deployed to the area, it is clear that they have an important impact on health locally and regionally and contribute significantly to the global disease surveillance capability and results. Pivotal clinical trials leading to licensure of vaccines against the Japanese encephalitis and Hepatitis A viruses were possible because of collaborative programs developed by the U.S. Army laboratory in Thailand and the Thai government. These laboratories also serve to catalyze international collaborations, often between university global health researchers and host nation organizations. Disease surveillance activities are coordinated in DOD by the Armed Forces Health Surveillance Center and its Global Emerging Infectious Surveillance and Response Program (GEIS). Much of the funding for surveillance activities of the overseas laboratories comes through GEIS. Additionally, the Defense Threat Reduction Agency Cooperative Biological Engagement Program facilitates capacity development of surveillance activities of partner nations. Collectively, these activities constitute a robust disease surveillance network that serves to alert DOD to health threats and to also promote public health around the world.

DOD has traditionally used health as an instrument for building relationships with partner nations.[13] Diverse types of engagements reflect this concept. The deployment of the hospital ships USNS *Comfort* and USNS *Mercy* on the missions Pacific Partnership and Continuing Promise in the Pacific and in Latin America are visible examples. Traditionally, these missions have been focused on the provision of direct care to host nation civilians, although this focus is evolving. Individual Service components often carry out missions with humanitarian intent, such as the Air Force Pac Angel and New Horizons exercises in the Pacific and Belize, respectively. The State Partnership Program operated by the National Guard engages with its partner nations' military, generally on an annual basis, including humanitarian missions. These engagements commonly have health objectives often involving direct care. Many of these engagements are referred to as Medical, Dental, or Veterinary Civic Action Programs and Medical Readiness Training Exercises. Additionally, each geographic combatant command uses its Commander's Emergency Response Program to support partner nation engagements on an ad hoc basis, and health engagements often are part of these efforts. These types of engagements involving direct patient care are generally believed to improve the perception and access of the United States in other countries.

Where Is DOD GHE Going?

Based on input from the Under Secretary of Defense for Policy (USDP), the Secretary of Defense for Policy issued a cable in 2013 regarding global health engagement. A major point of emphasis of the cable is that DOD GHE should be focused on capacity development and strengthening of host nation health systems and should include components of monitoring and evaluation. This concept is consistent with established principles of the GHI espoused by the U.S. interagency community, IOs, NGOs, and academic organizations. The principle of capacity-building has been widely recognized by military personnel involved in developing GHE concepts, and this policy should be significantly enabling with respect to extending DOD funding authorities.

Why are these developments important? The previous focus on providing direct care as the principal activities of Medical Action Programs and Medical Readiness Training Exercises has been predicated on DOD policy regarding appropriate use of Humanitarian and Civic Assistance funding, which was to be used for training of U.S. personnel. Numerous criticisms have been raised by individuals both within and outside of DOD of the benefits of providing direct care during these exercises.[14] One area of concern is the relative risks and benefits to the patients of providing short-term care. What benefit is there to a patient with hypertension or diabetes to receive medical care on a single day? Even when the benefit seems completely obvious, the balance is not always clear. Surgical restoration of sight to a man who has gone blind is certainly life altering. However, if we have no data regarding the late complications and long-term success of the operation, we have an incomplete picture of the benefit/risk calculus and do not know if it could or should be better.

A second type of concern often raised is that the provision of direct care by DOD personnel on these missions may serve to undermine the credibility and sustainability of the host nation healthcare system. If a thousand individuals receive dental care during the course of a Dental Action Program, what do they think of the comparability of their local dental care provider and DOD providers, and which patients, if any, are left to be cared for by the local provider? A focus on capacity development addresses these concerns. If the engagements are designed to support host nation health services by extending the numbers of patients who can benefit from care or by improving the standards of care by host nation providers, they should have long-term benefit to local health systems and ongoing benefit to patients. A focus on capacity development also includes public health efforts. The capacity of host nations to provide vaccination programs, clean water, and perinatal care with attended births can have huge implications for the health of the population.

U.S. Marines with Joint Task Force 505, multinational forces, and humanitarian relief organizations provide aid after two devastating earthquakes struck Nepal on April 25 and May 12, 2015 (U.S. Marine Corps/Hernan Vidana)

Focus on capacity development has already received substantial attention across GHEs. While Medical Action Programs still involve direct patient care to varying degrees, there is often an effort to design these engagements as partnering activities with host nation personnel. There is also a trend toward increasingly returning to sites of previous engagements so that there can be progressive movement toward capacity development over time. The New Horizons 2014 exercise in Belize was a 6-month-long engagement involving a series of coordinated programs with the goal of progressively addressing a series of needs within the country. Similarly, Continuing Promise 2015 visited 15 countries, 13 of which

were repeat visits. Undoubtedly, following the issuance of the USDP GHE cable and output of the DOD Global Health Working Group, the approaches used to focus GHE on capacity development will mature and become more systematic over time. These improvements should help assure that DOD GHEs will strengthen essential capabilities of partner host nations and improve their stability in accordance with the new DOD mission.

The concern is often raised, particularly in the IO and NGO communities, that DOD is not and should not attempt to be a humanitarian agency. This concern is based mainly on two considerations. First and foremost, these organizations are concerned regarding their own safety. If they are seen to be doing humanitarian work side by side with DOD personnel, they will not be viewed as impartial and may become targets of violence in settings of conflict or where anti-American or anti-Western sentiment is high. A second concern is that DOD does not meet accepted standards of practice for a humanitarian organization as described by the International Red Cross and Red Crescent Movement and generally espoused by other humanitarian organizations.[15] This code involves four humanitarian principles: the humanitarian imperative, independence, impartiality, and neutrality. The humanitarian imperative states that engagement should be for the sole purpose of providing humanitarian assistance wherever it is needed. If DOD provides assistance based on security considerations, the assistance does not address this imperative. Similarly, DOD is unlikely to be impartial, independent, or neutral when operating in the context of conflict. When considered in these terms, it is clear that DOD is not a humanitarian organization. However, when the broad extent of GHEs is considered across the span of the range of military operations, it is hard to deny that DOD efforts have enormous humanitarian impact.

The humanitarian impact of DOD activities is more obvious when considering responses to disasters or support for large populations of displaced persons than the more deliberate engagements represented by the direct care activities characteristic of many Medical Action Programs, Medical Readiness Training Exercises, and related activities. When these engagements are conducted primarily for strategic purposes, such as security of U.S. forces or access to partner nations, there emerges the concern regarding whether they can be ethically conducted so as to meet bona fide needs of the people of the partner nations.

Current Engagements as Future Models

Across DOD there is increasing emphasis on integration of the principles expounded by the GHI and reiterated in the USDP cable into the planning and execution of GHE.[16] The development of a formal DOD policy by the Global Health Working Group will firmly establish these principles of operation. Developing cohesive approaches across all commands to implement these principles will be challenging considering the large numbers of organizations conducting engagements that impact health overseas. Nevertheless, establishment of integrated, strategic approaches will certainly improve the efficiency and effectiveness of GHE, and many efforts are already ongoing to this effect. To illustrate the value of an expected new DOD policy, two current GHE examples are worth considering.

An ongoing long-term engagement in Southeast Asia exemplifies how the concern regarding beneficence can be and should be addressed. Within the Greater Mekong region, there is a multinational effort to eliminate drug-resistant *P. falciparum* malaria. The Global Fund and President's Malaria Initiative, among others, funded the effort.[17] The effort involves many NGOs and IOs in an internationally coordinated strategy that evolved from one of controlling resistant malaria to eliminating it. Successes in the more accessible agricultural regions have highlighted the need to achieve success in the remote forest areas in the border regions of affected countries. Host nation militaries have security responsibilities that require them to operate in these regions and are at risk of infection with resistant malaria. They could also potentially collaborate with other players involved in the elimination effort to extend critical prevention measures to these remote areas.

The success of host nation militaries in these contexts is of strategic interest to DOD. The presence of resistant malaria is a threat to U.S. forces, and the possibility that infected military personnel from the region could be deployed to other countries means that the threat could spread. U.S. Pacific Command (USPACOM) has considered these strategic needs and is engaging with local militaries to strengthen their abilities to contribute to the elimination efforts. An important principle exemplified here is that a strategically important health need was identified, and an engagement was designed to meet that need. It is likely that working with local militaries will improve future cooperative efforts and that effective response to the health need will address a strategic concern of the United States. However, neither of these outcomes is likely to be achieved if the health need is not successfully addressed. Once the strategic health need was identified, achieving the health outcome became the primary goal of the engagement. Health became *the* strategic imperative.

Three additional aspects of this engagement in the Mekong region merit attention. First, the engagement is part of the USPACOM strategic plan. While medical engagements have long been activities in this and every geographic command on an ad hoc basis, inclusion of medical capabilities in strategic planning is a new approach due in substantial part to the efforts of recent Command Surgeons Rear Admirals Michael Mittleman, Raquel Bono, and Colin Chinn. The advantages resulting from the inclusion of the engagement in the strategic plan are critical. The engagement can then be included in the planning activities of the command, and its long-term conduct and outcomes can be monitored on an ongoing basis. These are essential features of effective global health practice.

The second aspect of the Mekong engagement that deserves emphasis is that DOD activities are integrated into a

USNS *Mercy* Servicemembers conduct mass casualty drill during Pacific Partnership 2015, July 16, 2015 (U.S. Navy/Mayra A. Conde)

much larger effort involving numerous governments, NGOs, and IOs. With the nature of DOD engagements being short term—typically, the mission is executed and the troops are promptly redeployed—integration of engagements into critical niches in ongoing global health efforts is a potentially powerful method of providing long-term impact as a result of one or more short-term engagements.

The third aspect of the Mekong region engagement that deserves emphasis is the desired outcome of USPACOM efforts. While elimination of resistant malaria is certainly a desired outcome of the overall multinational effort, that goal is beyond the immediate scope of the limited activities of the command. While the details of USPACOM efforts are not publicly available, they should be focused on training host nation military regarding prevention of malaria infection in their own personnel and among migrant workers transiting the border areas. If that is the case, their efforts are designed to have systematic impact on dimensions of the public health effort that are measurable: how successful are the troops in deploying specific malaria prevention methods? Outcomes of this systematic type are much more likely to be within the capacity of DOD to measure as evidence of effectiveness of GHE than measurements such as prevalence of resistant malaria. In the current global environment, GHE activities almost always occur in the context of a broader global health effort. Effective integration of GHE activities into such broader efforts and their planning so as to affect systematic capabilities that achieve longer term health outcomes should be a paradigm for maximizing impact and providing a roadmap for measurement of effectiveness of engagements.

The second example that will be cited is the DOD response to the Ebola virus disease (EVD) epidemic, which involved a variety of novel response types that were credited with being critical for the success of the international effort to turn the epidemic around. The U.S. Air National Guard set up 10 expeditionary medical support systems (EMEDS) for use by the various groups providing or planning to provide care for suspected cases of EVD in Liberia, Guinea, and Sierra Leone. One EMEDS near Monrovia was manned by the U.S. Public Health Service for treatment of healthcare workers with suspected EVD. The presence of this well-staffed and -equipped EMEDS provided confidence that health care workers had high-quality support available when needed. The other EMEDS were used by various NGOs (for example, Doctors Without Borders) for treatment of patients with suspected EVD. The U.S. Army led an effort to train host nation and NGO personnel in methods recommended for use by the WHO when caring for patients suspected of having EVD. Army and Navy personnel manned laboratories that performed diagnostic testing for Ebola virus infection. The 101st Airborne Division provided logistical

support for all DOD activities in Liberia and for the U.S. Public Health Service contingency manning the Monrovia medical unit. The Center for Strategic and International Studies has evaluated the DOD response and credited it with having great impact on the epidemic.[18] This response is exceptional in that U.S. personnel trained and provided EMEDS for both host nation and other non-U.S. responders and provided no direct patient care. The elements of the response reflect the extraordinary logistical capability, including the ability to mobilize specialized emergency equipment, of DOD and its ability to mobilize substantial numbers of highly trained personnel.

The growth in geopolitical significance leading to markedly increased funding for global health has resulted in the engagement of many new players in the field, including a much greater involvement of academia. These players are important partners for integration and coordination with Department of Defense global health engagement. Anticipated DOD policy regarding GHE is expected to be consistent with the overall U.S. policy and provides a solid framework for future practice. Examples of GHE that integrate these principles of practice demonstrate the power of well-planned and -executed engagements to achieve important security objectives (for example, protection of forces against drug-resistant or untreatable disease) while at the same time having important health impacts for partner nations. Moreover, achievement of health objectives can clearly be seen to have politically stabilizing effects, compared to what could be expected if EVD had gone unchecked in West Africa or spread to other parts of the world. Well-designed programs executed by DOD leaders with expertise in global health practice should help assure that strategic objectives of GHE are achieved, while focusing effectively on the advancement of the health of our partners around the world. Recent and expected developments in GHE policy and practice in DOD should make this domain an increasingly powerful and valuable component of each commander's strategic plan. **JFQ**

Notes

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U.S. Air Force Combat Controller from 23rd Special Tactics Squadron, Air Force Special Operations Command, Hurlburt Field, Florida, watches pallets after airdrop of humanitarian aid for distribution in Port-au-Prince, Haiti, following magnitude 7 earthquake, January 18, 2010 (U.S. Air Force/James L. Harper, Jr.)

Separate and Equal

Building Better Working Relationships with the International Humanitarian Community

By Paul A. Gaist and Ramey L. Wilson

You can't surge trust.

—General James Amos,
Commandant of the U.S. Marine Corps[1]

In today's complex global landscape, understanding and taking the opportunities to build peace to prevent war are increasingly paramount if a stable and sustainable world is to be realized. As such, we need to sharpen the focus of the roles the military and the humanitarian assistance community have in this important call to action and, at the least, determine what each side needs to know about the other. This is especially true if we are to find those intersections and circumstances where the military and the humanitarian assistance community are able to work together and to recognize those where they cannot. Toward this goal, this article reviews the identity, prin-

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U.S. Soldiers assigned to Company C, 1st Battalion, 17th Regiment, unload humanitarian aid for distribution to town of Rajan Kala, Afghanistan, December 5, 2009 (U.S. Air Force/Francisco V. Govea II)

ciples, and culture of the humanitarian community, what it expects from military forces, and what it wants the military to consider when it is planning health engagement. Additionally, approaches and methods for constructive interaction between the military and community forces are proposed.

To begin, the military should refrain from referring to the international humanitarian community as *partners*. The use of this word in general denotes both an identity and a relationship between two or more entities that are sharing in potential risks and gains. In this sense, it is assumed and accepted that in a partnership, the affiliations, obligations, and consequences of one partner's behavior extend to the other (such as with co-owners of a business). In the contentious, unsafe, and challenging environments in which both the military and civil society organizations work as a matter of course, the words we use can have enhanced meaning and consequences. In this regard, it is important that the civil society sector not be defined by an actual or perceived association with the military. Thus, the military should find a word other than *partner* to describe the relationships it has with the civil society sector without suggesting commingled identities; *co-equals*, *co-actors*, or *colleagues* would be more acceptable. Referring to those in the international humanitarian community as partners is an association that can put them in harm's way, and this is a main reason for not using this term. Another reason is the way in which the military now uses the word to define its relationship to the humanitarian community. With the word *partner* saturating the 2012 strategic guidance in *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* and the recently revised National Security Strategy, its meaning has subtly shifted in the military's parlance. Its use by the U.S. Government (and, by definition, the Department of Defense) no longer suggests an independent organization that works as a co-equal, but now implies a relationship to use and leverage a subordinate organization to serve U.S. interests. Just as then–Secretary of State Colin Powell infamously revealed the U.S. Government's perspective regarding nongovernmental organizations (NGOs) by declaring them "force-multipliers" and "an important part of our combat team" in 2001, the word *partner* means something different to the military than it does to the international humanitarian community.[2] Speaking from that community's perspective, the words and terms we use can directly impact the ability to find avenues and opportunities where coordination, cooperation, and possibly collaboration can exist. So let us start by using a different term to indicate working arrangements and/or agreements that may be formed and realized. To convey

this and other key points with direct clarity, this article speaks from the perspective and with the voice of the civil society sector that is based on the authors' experience working in and with the international humanitarian community. As such, and as in the field, the authors span the military, health, and humanitarian professions to provide insight about these key cultures and speak to the essentials required for them to work effectively and productively together.

Working Together: The Civil Society Perspective

While we, the civil society sector, may not agree with the military's use of the word *partner*, we can seek ways to work in *partnership*, in the form of conditional working relationships, as a means to cooperate on mutual goals and aims to relieve suffering and prevent unnecessary death. The key is that those efforts are and will be highly contextual based upon the time, place, circumstances, culture, mandates, and objectives of each actor and situation. The recent partnership of U.S. military and humanitarian medical forces in response to the Ebola crisis in Liberia highlights the fluid relationships that will shift based upon each specific context, especially the level of violence. During disaster responses or epidemic outbreaks, there is no doubt that military forces possess unique skills and equipment that can assist with the response. In areas of conflict or violence, however, the distance between the military forces and the humanitarian community must increase to protect the humanitarian space, especially when military or political objectives extend beyond relieving suffering or building capacity.

The reality is that military forces will most likely be collocated with the humanitarian community for the foreseeable future, even in areas of violence or insecurity where the humanitarian community desires a distinct separation from belligerent forces for their own protection. In 1991, after the highly effective response in Iraq by the humanitarian community and coalition military forces during Operation *Provide Comfort*, we hoped that our partnership would signal a new model for civil-military interaction. Subsequent complex emergencies in Europe and Africa and the wars in Iraq and Afghanistan, however, demonstrated that continued efforts to improve the coexistence of humanitarian organizations and military forces operating in conflict areas were needed. With the recent international response to the Ebola crisis and the new U.S. Government strategy of proactive engagement, especially in the domain of health, it seems fitting to revisit and review the principles and culture of the humanitarian community. Maybe the Ebola response in Liberia can be a tipping point for improved collaboration and partnership as we move forward, further building on the successes achieved while responding to recent natural disasters.

Who We Are

The *international humanitarian community* comprises the various organizations and institutions that seek to relieve the unnecessary death and suffering that comes from various sources, such as poverty, conflict, and injustice. Seen broadly, the community includes financial donors, international governmental organizations (IGOs), and NGOs, each of which serves a different function. Overall, these groups are often referred to under the umbrella term *civil society organizations* (CSOs) and/or the *civil society sector*. Financial donors provide the funding for humanitarian work and include state entities, intergovernmental bodies (which receive their funding from the states that participate in the institution), and private donors/foundations. Intergovernmental bodies, which serve as both funding conduits and coordinating agencies of policy and implementation, include the various institutions of the United Nations (UN) and other multistate organizations. Nongovernmental organizations vary considerably and characterize themselves by function—advocacy based or operational—and their scope of effort—community based, national, transnational, or international. While advocacy based NGOs work to illuminate problems and promote change at the policy level, operational NGOs work to provide direct support to those in need, usually at the local level, and are more numerous. In general, NGOs serve four basic areas of need: humanitarian assistance, human rights, civil society/democracy-building, and conflict resolution.[3] Health and public health objectives relate to all these areas and are often priority goals within them.

What We Believe

We appreciate that the military has its own culture, objectives, and ways of operating, which we need to better understand. In turn, it is key that the military understand our beliefs, culture, and operations.

While each NGO and humanitarian IGO has a different mandate, objective, culture, and willingness to engage with military forces, the majority define themselves as humanitarian by identifying with the core principles of humanitarian action, first proposed by the International Committee of the Red Cross (ICRC) and Red Crescent Movement: humanity, impartiality, neutrality, and independence.

Humanity. The principle of humanity states that all human suffering is anathema and must be recognized and addressed wherever it is found. It focuses all activities on preserving and protecting the life and health of those in need and respecting others as fellow human beings. While military forces may be able to readily follow the spirit of this principle during a disaster response, they directly violate this principle in the conduct of military operations designed to destroy or kill enemy combatants or when noncombatants are placed at risk during military operations.

Impartiality. The principle of impartiality articulates that all assistance and care must be distributed solely based on need, with priority given to those who need it most. There can be no distinction on the delivery of assistance based upon age, nationality, race, gender, religious belief, class, language, disability, health status, sexual orientation, political opinion, or social origin. While military forces can act with impartiality during disaster

U.S. Marine assigned to Special-Purpose Marine Air-Ground Task Force Crisis Response–Africa prepares to land at U.S. Embassy in Monrovia to support Operation *United Assistance* in Liberia, October 13, 2014 (U.S. Marine Corps/Andre Dakis)

responses and humanitarian crises, this is impossible when they are acting as a belligerent or in support of another political entity. As such, the current strategy of the military to use health and medicine as a soft power to "win hearts and minds" is a direct affront to humanitarian principles. Military health engagements do not always target those with the greatest need, but are often provided in an effort to strengthen or change a particular group's political perspective and/or as part of a strategy to achieve non–health-related military objectives.

Neutrality. Often the only way CSOs are able to do their work is if they are seen as being neutral—not taking sides one way or another. It is not that we are blind to the injustice we may know and witness; in fact, that injustice is often what fuels our commitment and our often extraordinary efforts. To gain and maintain access in conflict zones to carry out our work, it is critical that we not be viewed as standing for and/or promoting one side or another. Specifically, the principle of neutrality declares that humanitarian organizations must not take sides in any hostilities or engage in controversies of a political, racial, religious, or ideological nature. As military forces serve as tools to political entities, they are, by definition, never neutral, even if operating under conditions where they seek to be neutral, such as part of a peacekeeping force.

Independence. The principle of independence proclaims that humanitarian efforts must remain autonomous from other objectives, such as political, economic, military, or other motives, which may attempt to influence the location or operations of humanitarian action. As declared by *Médecins Sans Frontières* (Doctors Without Borders), "[we] strive to ensure that we have the power to freely evaluate medical needs, to access populations without restriction and to directly control the aid we provide."[4]

Further summarized in the *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*, the principles seek to protect humanitarian actors from engaging in efforts that might fall outside humanitarian themes. Of special note to those in the military, Principle 4 of the Code of Conduct specifically warns us against working too closely with military forces for fear of losing our independence or being used—either knowingly or unknowingly—as a source of intelligence. As of April 10, 2015, there were 560 different NGOs that had formally endorsed the ICRC Code of Conduct and many others who embrace and operationalize its principles.

With these core principles underlying all humanitarian action, it is clear that our partnerships with the military will vary significantly based on the situation and context. The very principle of independence allows each NGO to

establish its policies of collaboration and partnership with military forces, but the military should anticipate that its working relationships with us will change as operational contexts vary. In general, one of the following levels of engagement with most NGOs or IGOs should be expected:

Principled Non-Engagement. NGOs or IGOs will avoid almost all collaboration and partnership to avoid any actual or perceived loss of their independence. Institutions such as the ICRC and *Médecins Sans Frontières* usually hold this perspective.

"Arm's-Length" Interaction. NGOs are willing to interact only indirectly through an international or regional intermediary, such as the UN Assistance Mission in Afghanistan, or through nonmilitary state institutions, such as the U.S. Agency for International Development's Office of Foreign Disaster Assistance. This interaction emphasizes our perceived distance from military forces and our principle only to engage with military forces as a last resort.

Proactive, Pragmatic, Principled Engagement. NGOs will consider working in concert with military forces as long as humanitarian principles are protected and the mission is conducted under the auspices of a larger humanitarian effort, such as part of the UN Cluster System, to respond to a humanitarian emergency. While similar to the previous level of interaction, the perceived distance from military forces is decreased. Additionally, we may be willing to develop relationships with militaries through conferences or international bodies to proactively discuss and consider interaction when military units engage in relief activities.

Active, Direct Engagement and Cooperation. This level of interaction may only be possible during a disaster response or when military missions, such as those conducted by military hospital ships, closely follow humanitarian principles.[5]

Our Culture

Military forces should consider interacting with us as a cross-cultural experience, an opportunity to see the same problems or challenges through a different lens. To improve the chances of beneficial interaction, it is essential that the military have a basic grasp of our culture and history. Before we talk specifically about our culture, we want to emphasize that we take the previously discussed principles of humanitarian action seriously. They are what define our efforts and unify the humanitarian community. Military forces may be tempted to dismiss those principles as idealistic or negotiable, but we would encourage them to resist that temptation. Those humanitarian principles are our core values. Failing to understand them and their implications could lead to actions that would poison any interaction we might have in the future.

Although the humanitarian community agrees on the humanitarian principles, we do not all agree on how those principles should be implemented. We are a family, and like most families, we often disagree on the details. This independence springs from our heritage, a culture of independent action and autonomy, and our decisionmaking processes; we are not a hierarchical community that operates in a way the military is familiar with. We often operate by consensus and seek out collaboration, usually understanding that none of us can tackle any of the major problems by ourselves. Evolving over time, these collaborations have led to common standards for humanitarian assistance that support the principles of humanitarian action.

The humanitarian community looks to the establishment of the ICRC in 1859 in response to the lack of concern and medical care for the wounded left to die after a battle near Solferino, Italy, as the formal beginnings of humanitarian action. In 1863, the ICRC conducted the first of many Geneva Conventions that established the humanitarian principles and neutrality of medical forces, demanded care for all wounded, and codified the protections for civilians on the battlefield, thereby recognizing that non-belligerents, which include wounded enemies, have rights and need protection from abuse. With the end of the Cold War and the subsequent complex emergencies of the 1990s, we experienced an exponential growth in the number of humanitarian organizations that wanted to provide disaster relief, respond to a broad range of humanitarian crises, and build civil society globally. As occurs with any rapid growth, the quality of the assistance provided by these new NGOs varied considerably, ultimately leading to the professionalization of humanitarian workers, the establishment of response standards, and improved outcomes.

The humanitarian response standards, initially codified as the Sphere Project, initiated a process that sought to identify and teach the minimum standards that we needed to operate safely and effectively.[6] It also defined specific measures and indicators in a number of areas: water supply, sanitation, hygiene promotion, food security, nutrition and food aid, shelter, settlements, non-food items, and health services. By establishing a set of common standards, we significantly improved collaboration, and the standards of the Sphere Project stimulated the development of other standards, such as the Code of Good Practice in human resource management and the Human Accountability Partnership Standard for accountability and quality management. All of these standards are now being combined into Core Humanitarian Standards, which will assist in coordinating efforts across the humanitarian space.[7]

As a result of the demands of various disasters ranging from earthquakes to tsunamis and fragile states to war, the humanitarian community has developed into a cadre of professionals operating as a learning organization and a network of networks that is capable, competent, and adaptable. We are adept at working with many groups, and the military is only one of many actors that seek to have working relationships with us. Our respective cultures will likely clash and create the potential for false expectations and misunderstanding, but we should be able to work through those issues if the need is great enough. While the humanitarian community is a heterogeneous group of organizations having different styles and mandates, our focus never waivers on the goals, principles, and practices that drive our humanitarian action. As we move

forward, we encourage the military to consider us co-equals and to look for opportunities both to learn from us as well as to teach us about military cultures.

What We Want from the Military

How can we work together in a way that benefits both of our objectives and mandates? To begin, we need opportunities in safe and neutral spaces/communication channels to learn about each other in a forthright and constructive manner. Collectively, we should also design and conduct value-added needs assessments and establish expectations concerning working separately or together in the same disaster areas and conflict zones. To accomplish even these small steps, we need the military to understand us as embodied through humanitarian principles and to deal with us with honesty and transparency.

The humanitarian principles, as previously mentioned, provide the lens through which we view and calibrate all of our actions and those of others operating in the name of humanitarian action. They establish our boundaries (which the military calls "left and right limits") and define our purpose of action. That said, we as a community are also quite pragmatic and understand that the military is not the "enemy." Often, we want the same thing. Sometimes, however, military and police forces are part of the problem that is creating and sustaining humanitarian crises. When the military partners with forces or countries that are violating human rights, it should expect us to be less willing to work with it or else be perceived as a collaborator. Even international military forces operating under a UN banner have been known to perpetrate humanitarian crimes on those they were sent to protect.[8] We see these actions, when they occur, as an assault on core humanitarian values and "grim reminders that working with military forces may have unforeseen, unintended consequences."[9]

When we choose to distance ourselves from the military, we are not signaling that we consider it our enemy any more than it should view us that way. Our principles often call us to work in those gray areas among belligerents to provide care to those who are caught in the middle. We reject a polarized perception that states, "you're either with us or against us" as too simplistic a way to view a complicated world. We can work through that complexity to find areas of cooperation—even collaboration—if the military understands our principles and works with us with transparency and veracity. Transparency does not mean that military secrets have to be divulged or that Servicemembers have to be put at risk, but it does require honesty regarding the motives of military actions and proposed health engagements. We would much rather clearly know the military's desired objectives and limitations in health and medical engagement and engage in open discussion on how we might work together. Hidden agendas or objectives, especially if contrary to our humanitarian principles, undermine any trust we can build and are a major barrier to having any type of prolonged engagement with the military. Simply put, that approach is a non-starter and, if discovered once we are working together, a deal breaker.

In addition, it would be productive and helpful if the military would focus on its areas of expertise and let us focus on our areas of competency. We see only problems when the military attempts to become a quasi-developmental organization, often putting individuals in charge who have little or no experience or training in humanitarian action and who fail to fully understand the complexities of aid delivery and development.[10] As one example of this, the lack of systematic follow-up and evaluations after most health engagements leaves the military uninformed and blind to the actual impact, positive or negative, of its engagements. In fact, we struggle at effective evaluation and follow-up as well. Maybe this could be an area of improvement that we pursue together.

What We Want the Military to Consider When Conducting Health Engagements

We are a pragmatic group and can see that U.S. military forces probably are going to be used to a greater extent in the development and health domains in support of the current National Defense Strategy. While we may not internally agree on the implications of these new medical diplomacy operations, there is no doubt that the military has robust capabilities to operate in austere, uncertain environments. These capabilities, however, were designed primarily for warfighting and may be inappropriate for health development and disaster assistance, especially if applied without an understanding of the local health context. Given the military engagement strategy in global health, the new Global Health Security Agenda, and the recent increases in the number and severity of natural disasters and potential civil unrest predicted with continued global climate change and other global pressures, we anticipate increased use of military forces in health and disaster engagements. We therefore entreat the military to consider, prima facie, the following question when conceptualizing and planning health engagements and responses: "Is this engagement doing more harm than good?"

The beneficence of a humanitarian or health engagement may seem, at first consideration, self-evident and obviously in the affirmative, but we encourage you to think more deeply about this question. You can even talk with us about this. Almost always, if not always, we would tell you that you should start by identifying the various stakeholders, the potential positive and negative impacts of the engagement, and how those impacts are prioritized. You need to ask yourself whether you are willing to undermine the effective delivery of humanitarian assistance or health development to achieve your strategic objectives. Furthermore, is it possible to conduct your health engagement in a manner where all stakeholders, especially those with a minimal voice, benefit from the engagement? How are you protecting those who are most likely to be harmed by your operations? Does your action increase or decrease the "humanitarian space" in which we operate? What are the economic impacts to the local health system and humanitarian community?

Worker decontaminates caregiver leaving patient area of active Ebola treatment center built as part of Operation *United Assistance* in Suakoko, Liberia, November 22, 2014 (U.S. Army/Brien Vorhees)

Are you undermining the confidence and long-term viability of the local health system? Are you supporting the delivery of care that meets the standards of the local health system? What type of follow-up or longitudinal care are you providing?

Another complementary approach would be to plan and analyze the near-, mid-, and long-term impacts of your engagement with steps to measure the impact so that you can learn from your experiences. It is quite clear that the impacts of the alleged Central Intelligence Agency's (CIA) sham vaccination program as a cover to find Osama bin Laden continues to have a significant negative impact on international health and development. As the CIA is involved with security, as you are, we associate you with those at the CIA and suspect that they are embedded in your ranks. Humanitarian workers and others have subsequently been killed because of the "maligned" vaccination program and you have set back progress (which requires community trust and acceptance of us and our work) for years, if not permanently, in the international efforts to eradicate polio and other significant health threats. In many parts of the world where we are most needed, vaccination programs were already culturally or otherwise viewed with suspicion and met with resistance. Now there are evidential counter-arguments defensively presented from the people and their communities when we try to explain and overcome such mistrust and reluctance. Going forward, do not be surprised if any efforts you make to support or develop vaccine programs, or any other health engagement for that matter, are viewed suspiciously as covert attempts to accomplish a military or security mission.

Our third suggested approach when considering a global health engagement or health intervention is for you to analyze your proposed operation through the lens of public health ethics.[11] The 12 principles espoused in public health's code of ethics should challenge all who engage in humanitarian action so that those who are most vulnerable to exploitation are protected, local health systems are strengthened, the engagements improve a current gap or deficiency in their health system, and the engagement is conducted with minimal negative impact and a greater likelihood of sustainability and success. These ethics call for engagement with indigenous populations, communities, and humanitarian organizations in order to include effective outreach as an integral aspect of all phases of the engagement, including follow-up. To date, we are unaware of any formal military medical ethic that is being used to systematically evaluate and balance the potential positive and negative impacts of military health engagements.

Sailors provide humanitarian assistance in support of Operation *Tomodachi* (U.S. Navy/Patricia R. Totemeier)

The Way Ahead

Of course, we in the humanitarian community have room for improvement as well. Good intentions are not enough, neither for you nor us. Continued work must be done to improve the planning, delivery, and measurement of aid and humanitarian action, and this is something that we can work on together. We must continue to find those areas of mutual interest and effort so that we can use them to develop a greater level of trust and cultural understanding. For example, developing better assessment and communication tools to make timely and useful distinctions about our objectives will help determine our working relationships. This in turn will allow us to collectively improve our ability to identify, map, and plan contingencies and improve our effectiveness in disaster areas and conflict zones. As part of this, maybe your concept of interoperability is an approach that we could use to guide our future work together. In this context, we understand interoperability to be the ability for our organizations to work together, from planning to the delivery of aid, in a way that minimizes the differences in equipment or processes that lead to the unnecessary loss of life or property and increases efficiencies in the overall use of available funds and other resources. The use of the UN Cluster System, for example, is an organizational process that facilitates early response and information dissemination. The Sphere Project guidelines provide another tool that establishes both a framework and a standard for collective response that approaches an evidence-based method. What about exploring and developing the concept of interoperability in the areas of medical equipment and supplies, evacuation processes, and responses? This would allow military forces and the humanitarian community to provide coordinated responses, cross-level supplies, and minimize the transition of care when military forces depart. Can this same principle of interoperability be applied to non-disaster engagements so that we are not working in cross-purpose with each other? To this end, we need health development and engagement professionals in the military and Federal service who can bridge the divide among our organizations at all levels of engagement and who are representative of all services, from strategic to the tactical, who have cultural and language skills to appropriately assess, understand, and partner in the health domain. Similarly, you need to further explore creating opportunities for our representatives to work in concert with your planners and implementers. There has been significant work and partnership in these areas over the past several years, but more effort and focus are needed.

Conclusion

The humanitarian community has a long history of advocating for and assisting those in need throughout the world. And as recent Kaiser Family Foundation reports in 2014 and 2015 re-emphasized, NGOs (both U.S. and foreign) play an important role in and are key implementers of global health efforts.[12] As you expand into the health domain of development, we want you to know that we do this work professionally; we know what we are doing. The lessons we have learned have led to the professionalization of humanitarian action according to the humanitarian principles that emphasize the concepts of humanity, impartiality, neutrality, and independence. Our cultures are different and if we are to co-exist and work toward common goals to meet the needs of others and strengthen the resiliency of their health systems, you must understand the nature and importance of these humanitarian principles. From us, you can be confident that we are willing to do the hard work to better understand your cultures and modes of operation that will allow us to better establish either working relationships or our distance, depending on what is assessed to be the most appropriate in a given context or situation. We hope that you have the same resolve. From you, we require honesty, transparency, and a respect for our principles and our core values. We are hopeful that this work will continue so that those in need can flourish in accordance with the respect and rights due to every person.

As just one example, there may need to be a rebalancing between operational security considerations and information-sharing in the health domain. For now, we must find mutually acceptable ways to establish productive working relationships or, at the very least, to co-exist in ways that do not increase the risks to our workers and/or our humanitarian objectives. It is only by choosing to understand the humanitarian principles, better relate to our culture, and meet us as co-equals that we will be able to forge mutually acceptable areas of communication, coordination, and collaboration. These key imperatives—ground rules, if you will—will allow us to work together in honest and productive ways as we confront and address the many challenges ahead. With formal dialogue, preplanning, understanding, and agreements, together we can find improved and constructive ways to do this. There are significant opportunities for us to make progress toward our mutual goals, to efficiently improve medical and public health assistance and systems in both the short and long term, and to do this in more effective, cost-effective, and sustainable ways. We look forward to working with the military toward these goals, where we can, to create a safer, healthier, and more just world. **JFQ**

Notes

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U.S. Army medical doctor with Carl R. Darnall Army Medical Center at Defense POW/MIA Accounting Agency excavation site searches for remains of five MIAs lost in B-24 crash from World War II, located near Riechelsdorf, Germany, September 1, 2015 (DOD/U.S. Air Force/Brian Kimball)

Global Health Engagement

A Military Medicine Core Competency

By Thomas R. Cullison, Charles W. Beadling, and Elizabeth Erickson

In his February 2014 testimony to the House Armed Services Committee, Assistant Secretary of Defense for Health Affairs Jonathan Woodson articulated six strategic lines of effort supporting then–Secretary of Defense Chuck Hagel's "six strategic priorities for reshaping our forces and institutions for a different future." Dr. Woodson's sixth line of effort was to "expand our global health engagement strategy." This article is an overview of U.S. global health engagement, including such topics as current guidelines, health as a strategic enabler, health in disaster management, and future directions for global health engagement.

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Why Military Global Health Engagement?

President Theodore Roosevelt's foreign policy has been summarized as "speak softly and carry a big stick." This has evolved over time into "smart power,"[1] a combination of "hard power" and "soft power" as outlined in the first Quadrennial Diplomacy and Development Review.[2] Many observers see topics, including health, that simultaneously benefit a population while advancing U.S. interests as legitimate areas for international engagement. Others view such activities as inappropriate for

foreign militaries, believing all actors in the humanitarian space should behave apolitically, strictly following the humanitarian principles of humanity, neutrality, impartiality, and independence, particularly during disaster response. In their extensive review of U.S. Department of Defense (DOD) health engagement, Josh Michaud and his coauthors note the concern voiced by many other governmental and nongovernmental humanitarian actors regarding military participation in this arena:

This has led to some ambiguity and tension regarding the role of DOD in [health engagement], *with many in the global health community having reservations about DOD's efforts but lacking a full understanding of its work, and DOD at times failing to give due consideration to the methods and principles that define successful global health programs even as it has increased its attention to such activities.*[3]

Guidelines for foreign military and civil defense organizations have been developed to address these concerns and discussions continue to resolve differences,[4] yet much work remains.

Numerous senior officials concur that health is an effective, ethical platform for engaging partner nations, both in a security cooperation capacity and as part of disaster response.[5] Wisely executed, U.S. DOD global health engagement (GHE), coupled with U.S. Agency for International Development (USAID) development efforts and State Department diplomacy, can both advance our national security strategy and benefit health throughout the world.

Current Alignment Guidelines

Within DOD, strategic policy on health engagement is generated by the Office of the Secretary of Defense for Policy's Office of Stability and Humanitarian Affairs, Assistant Secretary of Defense for Health Affairs, and Joint Staff Surgeon. Coordination and input are sought from the Departments of Health and Human Services, Homeland Security, Agriculture, and Energy, among others. Two DOD instructions (DODI), both developed in the context of recent activities in Iraq and Afghanistan, are widely considered GHE source documents: DODI 3000.05, "Stability Operations," and DODI 6000.16, "Health Support for Stability Operations." A 2013 Secretary of Defense cable, "Guidance for DoD Global Health Engagement," codifies responsibility, scope, and funding for GHE carried out by DOD organizations.[5] While this document makes great strides in defining and aligning GHE activities, more granular direction addressing personnel requirements, monitoring and evaluation, and research in this area is expected in the near future.

Health as a Strategic Enabler

Over the past decade, DOD health activities have gained increased visibility as tools for advancing U.S. national interests. The basic notion of enhancing strategic interests through relationship-building has always been made clear. Examples include annual U.S. Navy hospital ship deployments such as Pacific Partnership and Continuing Promise, and U.S. Air Force Operation *Pacific Angel* missions. In recent years, a significant shift has occurred within DOD health engagements from predominantly direct provision of care activities (often known as medical civic action programs) to more engagements focused on building partner nation capacity. GHE programs range from assisting a developing nation to improve its population's health through infrastructure improvement and educational opportunities, to developing military health interoperability with a medically sophisticated ally with whom the United States may regularly deploy in contingencies. Successful DOD health engagement planning considers political, social, educational, and economic factors within a country; how the host nation's population views its military; and regional relationships that may encourage or dissuade multilateral engagements. Thoughtful use of health engagements as a theater security cooperation tool has paved the way for broader security cooperation in many nations.

In recent years, relationships have dramatically improved between military medical organizations, other U.S. Government agencies, and nongovernmental organizations (NGOs) involved in global health activities. For example, medical staff members representing numerous civilian NGOs and universities routinely deploy with U.S. Navy hospital ship missions. Military liaison officers are assigned to the USAID Office of Civilian-Military Cooperation to coordinate overseas development and defense activities, and USAID representatives work in geographic combatant commander headquarters coordinating military theater security cooperation events with USAID development programs in the respective regions. An integrated whole-of-government approach to health security concerns supports achievement of national security goals.

Health Engagement in Geographic Combatant Commander Area of Responsibility

Operationally, geographic combatant commanders guide GHE efforts to support U.S. interests in their areas of operation through theater security cooperation plans, which are part of larger theater campaign plans. Appreciation of GHE as a security cooperation capability varies somewhat among the commanders. Within U.S. Pacific Command (USPACOM), for example, health engagement is seen as a key enabler for full-spectrum theater security cooperation. The USPACOM surgeon prepares a Health Theater Security Cooperation Plan, which provides general health engagement guidance, emphasizing principles such as focusing engagements on building capacity, capability, and interoperability; planning engagements that are sustainable and reciprocal; coordinating with other organizations working in the global health arena; and using direct patient care if it is the only means to achieve the engagement objectives. The plan also prioritizes health lines of effort and functional areas for each country, aligning efforts to reach

theater campaign plan objectives. Health engagement events are integrated within country security cooperation plans, which security cooperation officers develop with the interagency U.S. country team in keeping host nation priorities.

Health engagement activities involve a number of DOD health organizations, including Service components and subordinate units, National Guard State Partnership Programs, Army and Navy overseas research laboratories, and educational institutions such as the U.S. Air Force School of Aerospace Medicine, Uniformed Services University of the Health Sciences (USUHS), and Defense Institute of Medical Operations. GHE activities may occur within scheduled military exercises (such as Cobra Gold or Balikatan in USPACOM); within humanitarian assistance/disaster response–focused engagements (such as Continuing Promise and New Horizons in U.S. Southern Command); as a series of subject matter expert exchanges; within peacekeeping operations training; or within multilateral structures such as the Association of Southeast Asian Nations Defense Ministers Meeting–Plus Expert Working Group on Military Medicine. Additionally, foreign military medical personnel attend short- and long-term training courses in the United States, which results in strong relationships and paves the way for increased military health interoperability.

Regularly scheduled academic programs and subject matter expert exchanges are extremely important. Recently, the USUHS Center for Disaster and Humanitarian Assistance Medicine (CDHAM) has partnered with geographic combatant commanders on regional health strategy symposia. These engagements bring together senior and mid-level health leaders from DOD health organizations, partner nations, the U.S. Government interagency community, and the broader global health community to focus on the nexus between health and security. These events have increased awareness of and skills in GHE for DOD members, built interagency and whole-of-society relationships, and explored complex issues of health and security. In U.S. Central Command, this concept has been applied in a regional setting with participants from partner nations, and plans are in place to expand this model to USPACOM and other commands. Growing global threats from infectious diseases that know no national borders necessitate collaboration, cooperation, and information-sharing, which academic programs promote.

Following the Ebola crisis in West Africa, U.S. Africa Command established the African Partner Outbreak Response Alliance. Using the U.S. Armed Forces Health Surveillance Center and CDHAM as implementing partners, the alliance is designed to improve African militaries' ability to effectively support civilian authorities to identify and respond to a disease outbreak.

Focus Areas

DOD health activities span a wide range of engagement types and topics. We suggest the following general principles and focus areas for DOD global health engagement as the most effective.

Continue Military-to-Military Engagement on Health Issues Unique to Uniformed Armed Forces. U.S. military health capabilities are unmatched by those of any other nation's armed forces. We excel in many fields: industrial hygiene, preventive medicine, infectious disease, and combat trauma, to mention a few. We are world leaders in military-specific areas such as combat stress, aerospace medicine, aeromedical evacuation, undersea medicine, and field medicine. We have much to learn from our colleagues in other nations, however, particularly about region-specific diseases, practices, and successes. Subject matter expert exchanges should be just that: bidirectional exchanges of knowledge and experience. These exchanges, whether during planned military exercises, international officer exchanges, educational programs, or medical conferences, result in expanded cultural understanding, increased medical competency of all participants, and improved interoperability between military medical services.

Leverage Existing Capabilities. The U.S. military health system possesses unique assets that regularly provide services of worldwide importance yet are little known beyond their narrow sphere. DOD overseas medical research laboratories have provided fundamental research supporting force health protection against infectious diseases throughout the world for over half a century. Working alongside host nation military and ministry of health scientists and technicians, these laboratories have strengthened both health systems and U.S. relationships with partner nations.[6] Collaboration among uniformed U.S. public health and tropical disease specialists and their civilian colleagues in numerous nations has resulted in enduring professional relationships and personal friendships.

Contribute to Established International and U.S. Government Health Programs. Military medical research initially performed to protect troops in combat served as the foundation for public health efforts throughout the world. To remain relevant, today's U.S. military health engagement programs must be synergistic with ongoing civilian-sector programs carried out by international organizations, national development agencies, NGOs, and other actors in the global health space.

In 2000, world leaders established time-bound targets, the Millennium Development Goals, to focus efforts in eight specific areas, three of which are directly related to health.[7] Goal 6 commits to "combat HIV/AIDS, malaria and other diseases" with specific targets to "have halted by 2015 and begun to reverse the spread of HIV/AIDS" and "have halted by 2015 and begun to reverse the spread of malaria and other diseases (particularly tuberculosis)." Specific indicators have been established to track progress on each of these endeavors.

Concerns regarding the impact of rapidly spreading infectious disease on freedom of movement and the world economy led to the 2005 World Health Organization (WHO) International Health Regulations, committing all signatory nations to high standards

of disease surveillance and reporting. Realizing that not all could reach these goals, the United States launched the Global Health Security Agenda in 2014 in partnership with the WHO and 47 other countries (to date), providing assistance in developing a worldwide network to "prevent, detect, and respond" to infectious diseases threats. The longstanding relationships, infrastructure, and interagency goodwill developed, particularly through the overseas infectious disease research laboratories and Defense HIV/AIDS Prevention Program, have been instrumental in all aspects of GHE.

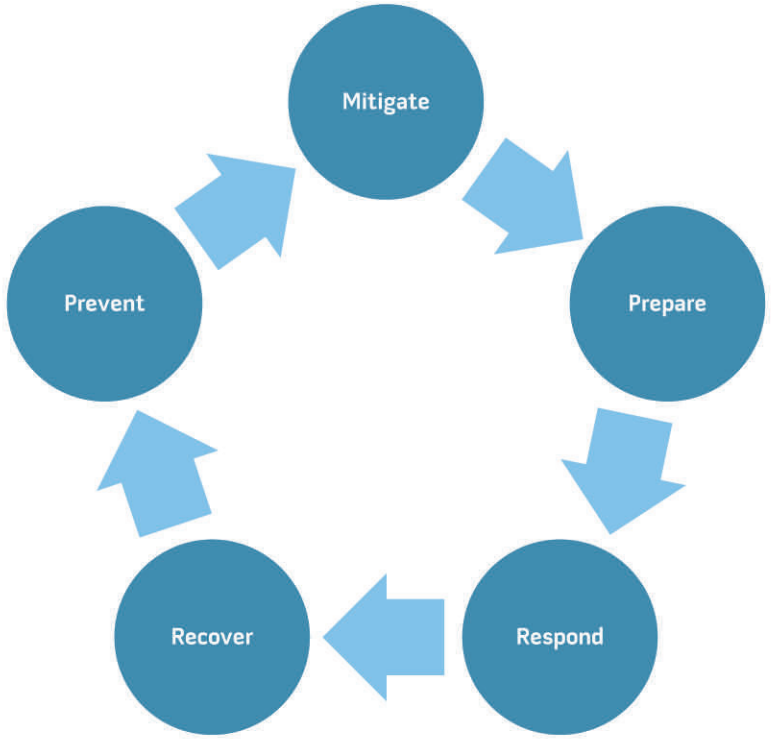
Focus on Trauma Care. Throughout history, advances in military trauma care have been applied to civilian settings. The recent unparalleled U.S. success in decreasing combat deaths resulted from continually applying basic science and systems research to an already excellent military trauma system extending halfway around the world. Although many surgical techniques have been refined, much of the success is due to previously unstudied logistic, transportation, and environmental factors. The expressed interest in trauma care from numerous partner nations, the overlap between civilian and military applications, and the applicability in disaster response suggest that trauma should be a mainstay topic for GHE programs.

Health in Disaster Management

An inherent responsibility of any government is to protect its citizens from harm, including the ravages of disasters. Disaster resilience depends upon all societal components functioning synergistically, particularly the society's health system—both the hygiene and preventive services inherent in a strong public health system and the ready access to effective clinical capabilities necessary to successfully treat disease and injury.

Properly executed disaster management is a continual process of improvement activity illustrated in the Disaster Risk Reduction Cycle (see figure). This framework involves anticipating likely occurrences, responding when they occur, cleaning up and rebuilding during the recovery phase,

Figure 1. The Disaster Risk Reduction Cycle



and then studying the event to achieve a better outcome the next time. Wide media attention focuses on tragic and heroic events during the immediate response phase, but forward thinking and planning during the prevention, mitigation, and preparation phases save more lives and usually go unnoticed. Certain natural phenomena, such as seismic activity or precipitation, cannot be prevented, and therefore mitigation—earthquake-resistant building codes, for example—is important to reduce an event's impact. For some threats, such as industrial accidents or infectious disease, prevention is especially important.

During the 2010 Haitian earthquake and 2011 Japanese tsunami, worldwide attention was riveted to compelling images of devastated towns, disrupted public services, and heart-rending human suffering. As conditions stabilized and no further immediate devastation seemed imminent, attention focused on other events.

In December 2004, a massive tsunami caused widespread loss of life and destruction throughout the eastern Indian Ocean region. The Indonesian province of Aceh on the island of Sumatra sustained particularly horrific damage, resulting in hundreds of thousands of lives lost and entire villages obliterated. The immense U.S. response initially centered on the USS *Abraham Lincoln* battle group that was relieved by the hospital ship USNS *Mercy* approximately 30 days after the event. Public opinion polls showed a marked increase in positive views of Indonesians toward the United States, at least in the short term, as a direct result of this disaster assistance.

Many individuals and organizations expressed concern that foreign military involvement in disaster response would be used for immediate geopolitical advantage. From 1992 to 1994, a United Nations (UN)-sponsored international committee developed the *Guidelines on the Use of Foreign Military and Civil Defence Assets in Disaster Relief.* Known as the "Oslo Guidelines," they stated in part: "Foreign military and civil defence assets should be requested only where there is no comparable civilian alternative and only the use of military or civil defence assets can meet a critical humanitarian need. The military or civil defence asset must therefore be unique

in capability and availability."[8] These guidelines, updated in 2007 following the unprecedented international military response to the 2004 Indian Ocean tsunami, discuss three levels of activity: direct assistance, indirect assistance, and infrastructure support. Foreign militaries are expected to operate in the background in support of host nation and international civilian relief operators, performing "indirect assistance" and "infrastructure support" unless no other capability is available to meet the need. During the U.S. response to the Haitian earthquake, over 13,000 U.S. military personnel were involved in all three levels of response. Direct assistance was provided in the form of medical and surgical care on board the hospital ship USNS *Comfort* until sufficient capability was available ashore. Indirect assistance involved flying patients to the ship by military aircraft. Infrastructure support included enabling logistic capabilities by restoring and operating the Port-au-Prince airport and port facilities.

The Oslo Guidelines require transfer of military relief functions to civilian authorities once the immediate requirement has been met. These often difficult transitions may be smoothed by establishing long-term working relationships between militaries and civilian disaster response organizations through conferences, combined study of previous events, and participation in each other's exercises. Annual disaster relief, search and rescue, and medical interoperability exercises during normal times develop host nation capability while establishing expectations during actual crises. Using scenarios presenting likely events allows for critical analysis and preparation that will save lives.

Foreign military response to natural disasters will often deploy based on bilateral agreements or multilateral treaties. For example, U.S. military foreign humanitarian assistance normally supports the USAID Office of U.S. Foreign Disaster Assistance following a formal request for assistance by the host nation through the U.S. Ambassador and a request from the State Department for specific response capabilities. It is recommended that nations wishing to act bilaterally should make use of the Model Agreement set out in Annex I of the Oslo Guidelines.

Public health services and clinical care are occasionally the central focus of a disaster. Onset of the West African Ebola crisis was relatively gradual, with the number of cases increasing exponentially over a period of several months. This led to concern that the disease would spread to other regions including Europe, North America, and Asia. On August 8, 2014, the WHO Director-General declared the epidemic a "public health emergency of international concern." Shortly thereafter, President Barack Obama stated Ebola is a "top national security priority for the United States" and committed significant assets to the effort. U.S. military activity was largely in the form of indirect and infrastructure support, including airlift establishing a regional intermediate staging base, constructing treatment facilities, training healthcare workers in personal protective procedures for safe patient interaction, and assisting with laboratory and surveillance techniques. In keeping with the Oslo Guidelines, uniformed U.S. Public Health Service providers, not military medical officers, provided direct care for healthcare workers who became ill while tending to others.

The above examples refer mainly to events occurring in the "respond" and early "recovery" phases of the disaster risk reduction cycle. Recovery, mitigation, and preparation activities are still occurring in all of these situations, including infrastructure replacement and rejuvenation.

"The time to exchange business cards is not during a disaster" is a common saying in disaster management. Much less visible but equally important is ongoing international disaster planning supported by U.S. agencies focused on whole-of-government capacity-building within low- and middle-income countries, assisting these nations to develop internal capability to decrease the impact, shorten the recovery period, and, most importantly, lessen human suffering. DOD entities involved in such work include the Center for Excellence in Disaster Management and Humanitarian Assistance, and the Center for Disaster and Humanitarian Assistance Medicine.

The U.S. Africa Command Disaster Preparedness Program (DPP) exemplifies a sustained engagement methodology for building disaster management capabilities and capacity. Since 2008, this effort has measurably enhanced disaster management of all hazards in over a dozen African partner nations. Additionally, several strategic benefits have been achieved, such as building strong relationships based on trust, improving cooperation between ministries within the countries, and creating a network of subject matter experts for collaboration across the continent. DPP promotes a whole-of-government effort throughout the entire disaster cycle, from prevention, mitigation, and preparedness to response and recovery. While the whole-of-government approach is essential to an effective disaster management program, the military-to-military aspect of DPP is emphasized. The Oslo Guidelines address the role of *foreign* military and civil defense but do not apply to a nation's own military participation in *domestic* disaster response. The military is often a country's most critical resource in effective disaster management.

In many nations, adequate contingency preparedness and response plans do not exist. The DPP process begins with a baseline analysis to identify disaster management capability and capacity gaps, which are prioritized in a strategic disaster management work plan. U.S. and host nation officials work together to create national disaster plans that are applied during a tabletop exercise for likely scenarios such as floods, earthquakes, or pandemic disease. In these sessions, technical experts are grouped not by agency or ministry but by function, representing command and control, logistics, health, communications, and security. Working together with civilian colleagues, often for the first time, participants develop important individual relationships as they form a national plan emphasizing military support to civilian authority, reinforcing integration of military and civilian government ministries and agencies throughout

Anesthesiologist examines child before her surgery aboard Military Sealift Command hospital ship USNS *Comfort* (T-AH 20) during Continuing Promise 2015, August 3, 2015 (U.S. Army/Lance Hartung)

the sustained engagement process. DPP has assisted partners in writing 9 all-hazard contingency plans and 10 military pandemic preparedness and response plans. Each military pandemic plan aligns with that country's national pandemic preparedness and response plan.

The emergence of a network of African disaster management experts, which has been effective for regional cooperation, is another powerful outcome. Key individuals with both the technical expertise and collaborative attitudes were identified and recruited as facilitators, turning bilateral into multilateral engagements. The benefit of this network was seen when representatives from two other West African countries responded to a Liberian request for assistance to advance national policy and legislation to improve disaster management capabilities. Although delayed for several months due to the Ebola epidemic, Liberia has since moved policy and legislation forward. Bringing these individuals together would have been unlikely without the relationships built through DPP over 7 years.

Future Directions

Military global health engagement is a valuable mechanism to simultaneously improve disaster preparation and response, increase population health around the world, and advance U.S. interests through all phases of the continuum of military operations, particularly in Phases 0 (shape) and 1 (deter).

In 2009, Eugene V. Bonventre and his colleagues published an excellent review of DOD GHE activities with several recommendations for interagency collaboration: creation of an overall global health security plan that combines civilian and military disease surveillance capabilities, and creation of a common interagency monitoring and evaluation capability to measure progress in health engagement activities.[9] In 2014, J. Christopher Daniel and Kathleen H. Hicks noted steady progress in many of these areas, particularly interagency coordination, with regular meetings at the assistant secretary level, and an increase in liaison officers among DOD, USAID, and Health and Human Services.[10] Certain structural reorganization—such as merging DOD bio-surveillance activities under the Armed Forces Health Surveillance Center to better integrate with the U.S. Centers for Disease Control and WHO worldwide disease surveillance—demonstrates progress in integrating with U.S. and foreign partners in areas of common interest.

Recommendations

Several significant issues must be addressed for global health engagement to become an accepted, routine military capability.

Clear doctrine must be developed for guiding DOD activities and for

U.S. Southern Command conducts New Horizons Honduras 2015 joint humanitarian assistance training exercise with partner nations in Central America, South America, and Caribbean, June 27, 2015 (U.S. Air Force/David J. Murphy)

establishing effective coordination with other U.S. Government and international agencies with global health responsibilities.

Multiyear funding mechanisms must be developed to support sequential capacity-building efforts. GHE activities in general are funded with same-year dollars, inhibiting the establishment of ongoing activities required to develop strong health capabilities and meaningful research projects needed to establish strong relationships. The overseas laboratories and Defense HIV/AIDS Prevention Program are excellent examples of success through thoughtful budgeting, and leveraging external funding could be emulated in other areas.

Personnel and training requirements are needed. Currently, military officers involved in GHE activities are largely self-selected through interest in this type of activity that is balanced with other requirements. Each military Service is addressing this issue in its own way. The Air Force International Health Specialist (IHS) program, which began in 2001, fosters an understanding of regional and global health issues, geopolitical issues, and joint planning methods. Air Force Health Service personnel may apply for IHS special experience identifiers based upon past experience in global health activities, foreign language proficiency, cross-cultural skills, and completion of minimum training requirements. The Navy is approaching GHE through the development of an Additional Qualification Designator that serves as a means to identify health professionals who meet certain competency requirements coupled with global health-related training, education, and experience. The authors of this article support ongoing efforts to establish a joint solution to this issue and encourage clear guidance in the near future. Extant education and training opportunities could be combined to form a core curriculum to which services may add instruction on unique capabilities or issues.

Data regarding GHE effectiveness, both from a health and a strategy perspective, is sorely lacking. Outcome studies in terms of both health and strategic results are needed to evaluate current efforts and guide future programs. Congress emphasized this point in section 715 of the 2013 National Defense Authorization Act. Current work on a measures of effectiveness process and learning tool is well under way. This capability can be helpful to military academic institutions such as National Defense University, USUHS, and Service war colleges, which seem ideal centers for such study. As suggested in the 2013 Secretary of Defense GHE cable, a percentage of funding earmarked for monitoring and evaluation

could be used to support these efforts. We understand that working groups have been chartered to study many of the issues raised above. We encourage close evaluation of their work and, if appropriate, immediate implementation of their recommendations.

We are encouraged by excellent progress in developing a strategy for military global health engagement that balances the security dimension with a holistic national and international approach to major global health issues. Continued emphasis on health issues of international importance, particularly in regions of strategic importance to the United States, will result in a healthier, safer world. **JFQ**

Notes

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U.S. Marine Corps officer assigned to Company A, The Basic School, prepares his ammunition during "The War" field training exercise aboard Marine Corps Base Quantico, April 16, 2015 (U.S. Marine Corps/Ezekiel R. Kitandwe)

The Fourth Level of War

By Michael R. Matheny

Dr. Michael R. Matheny is a Professor of Military Strategy and Operations at the U.S. Army War College.

Civilization began because the beginning of civilization is a military advantage."[1] This observation by Walter Bagehot is not far off the mark. Warfare certainly matured along with civilization as a violent expression of political will and intent. We currently view the art of warfare in three levels—tactical, operational, and strategic—but it was not always so. In the beginning, there were strategy and tactics. Strategy outlined how and to what purpose war might be used to achieve political objectives. Tactics directed how the violence was actually applied on the battlefield. For most of military history, tactical art was able to achieve strategic objectives as tribes, forces, and armies marshaled on the battlefield to destroy the enemy's ability to resist their master's political will. Although much debated, operational art was born at the end of the 19th century when the size of armies, made possible by the development of the nation-state, rendered tactics unable to bring about political results. Civilization has moved on. From a doctrinal, theoretical, and practical point of view, it is now time to consider a fourth level of war—the theater-strategic level of war.

Doctrine

There is little written about theater strategy in U.S. doctrine. Joint Publication 5-0, *Joint Operation Planning*, includes only a single paragraph on what would seem an important subject. U.S. doctrine acknowledges the strategic, operational, and tactical levels of war. However, doctrine also includes a theater-strategic level in an overlapping area that suggests this level bridges the operational and strategic levels.[2] Yet the *operational level* is defined as linking "strategy and tactics by establishing operational objectives needed to achieve the military end states and strategic objectives."[3] So what is the theater-strategic level of war? What is theater strategy? The problem in placing theater strategy in some useful context is that we already have so many kinds of strategy and no real consensus on what they are.

On the menu of strategies, we can find grand, national, national security, national military, just plain military, and theater strategies. All of these are harnessed to serve policy, but each varies in its objectives and means. There is a wide range of definitions of strategy, most of which illustrate an attribute rather than its essential nature. They range from the general: Art Lykke's famous "strategy equals ends plus ways plus means"; to Lawrence Freedman's more poetic "a story told in the future tense"; to Colin Gray's more specific "the use or threat of military power for political purposes."[4] The Department of Defense (DOD) asserts that *strategy* is "a prudent idea or set of ideas for employing the instruments of national power in a synchronized and integrated fashion to achieve theater, national, and multinational objectives."[5] This suggests that strategy involves the whole weight of the U.S. Government in the pursuit of national policy. Does theater strategy likewise involve all elements of national power?

In the pursuit of U.S. national policy, DOD has divided the world into six geographic combatant commands. Combatant commanders oversee these areas of responsibility and develop theater strategies. By doctrine, a *theater strategy* is "an overarching construct outlining a combatant commander's vision for integrating and synchronizing military activities and operations with the other elements of national power to achieve national strategic objectives."[6] Combatant commanders can only seek to synchronize and integrate, not to direct other elements of national power in the pursuit of unity of effort. Theater commanders conduct business in the complex environment of national, international, coalition, and alliance policy. The theater is where policy meets the joint force. How is this done and to what purpose?

Combatant commanders work for the Secretary of Defense and President through the Chairman of the Joint Chiefs of Staff. Charged with geographic responsibilities, they employ "theater strategy to align and focus efforts and resources to mitigate and prepare for conflict and contingencies in their AOR [area of responsibility] to support and advance U.S. interests."[7] A theater campaign plan details the strategy and usually employs security cooperation, building partner capacity, and force posture, among other activities, to achieve the commander's vision, advance U.S. interests, and prepare for possible contingencies. This is eminently reasonable and desirable and is arguably effective, but it largely addresses steady-state or peacetime requirements. There is no doctrine based on theory or practice for developing or executing theater strategy in war. Specific contingency plans, whether directed by DOD or self-generated by combatant commanders, address specific threats, generally with operational campaign planning. Where does theater strategy fit in wartime, particularly with multiple theaters of operations? Does the scale of effort—the intermediate theater objectives as opposed to theater of operations objectives—justify a fourth level of war?

Theory

The assertion that it is time to consider another level of war directly relates to how these levels are linked and why they now need to be expanded. The oft-quoted Prussian philosopher of war, Carl von Clausewitz, helped to establish the relationship between the levels of war when he noted that "the concepts characteristic of time—war, campaign, and battle—are parallel to those of space—country, theater of operations, and positions."[8] Indeed, the relationship between the levels of war includes time, scale, objectives, effect, and, significantly, the influence of policy. All of these factors are interrelated—that is to say, interactive. For example, there is a temporal relationship between the levels of war. Things happen much faster at the tactical level than at the operational or strategic levels. Likewise, the conduct and results of operational campaigns take less time than the full implementation of national strategies. Indeed, strategic results may take years to fully realize or even manifest. Clausewitz pointed out that this is a natural consequence of the scale and objectives—the relationship between battle, campaign, and war. To better illustrate the temporal relationship, the classic diagram of the levels of war should depict wheels of increasing size. At the tactical level, the wheels and events turn much faster than at the larger operational and strategic levels.

Size matters. War is waged in a geographic context. Each level of war has been historically associated with scale and scope of effort. The tyranny of distance contributes to the temporal relationship between the levels. *Tactics* is the application of technology to the battlefield to defeat the enemy and thereby gain immediate or cumulative military results. Operational art is applied to a spectrum of operations, connecting or synchronizing battles and major operations to achieve strategic effect. This is particularly the case when a single major operation such as *Urgent Fury* in Grenada (1983) or *Just Cause* in Panama (1989) can achieve strategic objectives. Theater strategy in war should seek to synchronize and arrange multiple campaigns in a theater of war or area of responsibility to achieve national strategic objectives. In other words, theater strategy synchronizes multiple theaters of operation.

Levels of war are also distinguished by objectives—how each level contributes to achieving the ultimate policy objectives. In cases where only one theater of operations is engaged in combat operations, there will be almost complete congruence between national, theater, and theater of operations objectives. Theater of operations planning and operations will dominate national attention. Theater of operations objectives and national objectives will be virtually synonymous, and theater strategy will be cast largely in a supporting role. This relationship and the role and function of theater strategy may well change, however, when the theater has multiple theaters of operations conducting military operations.

If, for example, war erupts on the Korean Peninsula, the national, theater of operations, and theater objectives will perfectly align, leading to a victory in Korea. The U.S. Pacific Command (USPACOM) commander will be cast largely in a supporting role while the

Korean theater of operations commander garners national attention and, likely, direct or close supervision by the Secretary of Defense and President. In this case, the USPACOM commander will be cast in a supervisory role, although it will be a largely supporting role. If, however, at the same time a conflict erupts with the Chinese over Taiwan or elsewhere in the region, the theater commander must now actively balance, prioritize, and synchronize major operations or campaigns in the theater to achieve national strategic objectives. In this scenario, theater strategy becomes an essential intermediary level of war due to the scope, scale, and nature of the conflict. Despite this critical theater-strategic role, political scrutiny will inevitably gravitate toward the theater of operations with the most domestic and international political consequences. This is an example of the critical role of policy as a distinguishing feature in the levels of war.

There is an ascending quality to the role of policy in the levels of war that provides both context and constantly exhibits influence. This, of course, is nothing more than reiterating Clausewitz's most famous insight that war is simply a continuation of policy by other means. But the role of policy varies with the level of war. The tactical art largely involves the application of technology to the battlespace, so technology has more influence than does policy at this level. Progressing from operational to strategic, the influence of policy grows, and at the strategic level, it predominates. Again, Clausewitz anticipated this relationship when he asserted that "Policy, of course, will not extend its influence to operational details. Political considerations do not determine the posting of guards or the employment of patrols. But they are more influential in the planning of war, of the campaign, and often even of the battle."[9]

The extent of policymaker involvement in operational details has often been a sticking point in civil-military relations. Should the President be picking target points or making tactical decisions from Washington, DC? The answer invariably lies with the question of the potential strategic or political effects of the tactical action. President Lyndon Johnson was famously involved in picking targets in North Vietnam during the Vietnam War.[10] His concern was not tactical effects but the potential of hitting Soviet or Chinese advisors or personnel, which could catastrophically escalate the war. Likewise, President Barack Obama ordered and then watched the tactical raid that took out Osama bin Laden. In both cases, the effects of the action matched to policy objectives determined the relationship between the tactical, operational, and strategic.

Finally, the levels of war are distinguished by their tactical, operational, theater-strategic, and strategic effect. Chance and the unique nature of violence give war a nonlinear character, but the notion of levels of war enables us to visualize and arrange resources to purpose in a fairly linear or conceptual way. The purpose of each level of war is action—to get things done. In a practical reality, this calls for some orderly approach to thinking, planning, and executing military operations. Bounded, directed, and constrained by policy while wrestling with an adaptive animate enemy, planners and commanders seek to stack the odds in their favor. The levels of war are a construct that helps them achieve this. The theater-strategic level is no less a tool than the operational or tactical framework for planning and execution.

What is the relationship of the levels of war in terms of effects? Do we need success at the tactical level to assure success at the operational? Likewise, do we need operational success to achieve theater-strategic or strategic effect? Logic suggests that success at one level makes success at the next level more likely, but it in fact may be insufficient. History is full of cautionary examples where tactical or operational success does not guarantee strategic success. German military history in the 20th century is certainly a case in point. The list of U.S. tactical or even operational success in the limited wars since 1945 leading to equally limited strategic effect might also be cited.

All the levels of war function simultaneously. Some may argue that there is no linear relationship between the levels of war. Indeed, even doctrine recognizes that tactical events may result in immediate strategic effect. This may have increased in recent years due to the pervasive nature and potential influence of media coverage of world events. As an example, the raid to capture or kill bin Laden certainly comes to mind. This tactical or strategic compression is usually rare and the effects are most likely transitory. Despite the impact on U.S. public morale, al Qaeda and affiliated terrorists fight on without bin Laden. The temporal relationship between the levels of war, if true, would suggest that the most enduring effects at each level of war are most likely cumulative. In the planning and conduct of operations with enduring results, the relationship between the levels of war remains useful in arranging operations, assigning tasks, and allocating resources.

Practice

Theater strategy is as old as empires contending for power and influence in distant corners of their reach. The leaders of the Roman, British, and French empires, as well as of succeeding empires, all sought to tailor strategy to specific regions while harmonizing those actions with the greater national purpose. As war spread around the world, beginning with the rise of the nation-state in Europe, theater strategy became ever more necessary. Some nations were better at it than others. In the 18th century, for example, the British won and retained India but lost the United States. World War I demonstrated—and World War II confirmed—that theater strategy was a critical path to national strategic objectives and success. Much like operational art, however, historians have largely ignored theater-strategic art as a specific area worthy of interest and study. Narratives of battles, campaigns, and national strategies continue to dominate the story of military history.

For the U.S. military, current practice is rooted in World War II and postwar solutions to filling the power vacuums left by the destruction of the German

U.S. Marines with Golf Company, 23rd Marine Regiment, 4th Marine Division, Marine Forces Reserve, sign roster alongside Brazilian marine corps during UNITAS Amphibious 2015, Ilha do Governador, Brazil, November 16, 2015 (U.S. Marine Corps/Issac Velasquez)

and Japanese empires. Even before the war ended, the U.S. Joint Chiefs of Staff decided to retain the unified command system that had proved so successful. In June 1945, the Joint Chiefs issued a directive appointing General Dwight D. Eisenhower as commanding general of U.S. forces in the European theater of operations. In December 1946, President Harry S. Truman approved the Unified Command Plan, which established seven geographic theater commands.[11] Over the years, these commands have changed a great deal, but the requirement for geographic responsibilities and the need to plan and orchestrate both daily and potential military activities remain the same. The distinguishing factors among the levels of war—scale, objective, policy, time, and effect—have also been evident at the theater-strategic level of war.

Scale. Over the last decade, U.S. Central Command (USCENTCOM) has been involved in multiple theaters of operations in the war on terror. In terms of scale, USCENTCOM established separate theaters of operations as the war spread across the Middle East, South Central Asia, and Africa. Afghanistan, Iraq, and the Horn of Africa account for three separate theaters of operations. The potential for multiple and simultaneous theaters of operations within the same geographic combatant commander's area of responsibility is obvious, particularly in the case of the Pacific and European commands. These potential separate theaters of operations span the full range of conflict, from state to nonstate to hybrid, in every region.

Time and Effects. The temporal relationship between the tactical, operational, theater-strategic, and strategic levels remains constant. Most of the various campaigns in the Middle East and South Central Asia over the last decade have involved counterinsurgency (COIN), building partner capacity (BPC), and counterterrorism operations. Things still happen quickly at the tactical level, but COIN and BPC are inherently slow and expensive. Counterterrorism operations may be less expensive and more discrete but, like COIN and BPC, the effects are cumulative. The strategic decision to surge troops into Iraq in 2007 enabled the operational decision to first secure Baghdad. The many tactical actions that actually extended security to Iraq's capital took place daily, accumulating to achieve operational effect. The tactical, operational, theater-strategic, and national-strategic effects were linked but not simultaneous and remain separated in time.

The tactical effects were undeniable and came quickly as U.S. forces worked to expand security in the capital region. The operational effects took more time,

however, as the number of violent incidents decreased, providing an appearance of incremental progress that did not reflect the reality on the ground.[12] It has also been argued that the troop surge allowed the operational consequence of supporting or enabling the Sunni Awakening that developed over the following year.[13] Regardless of the debate about the operational effects of the surge, the strategic effects remain contested. Did military operations in Iraq achieve our national objectives of establishing a sustainable, friendly, and democratic Iraq? What is missing is a discussion of theater-strategic effects beyond the national objectives. How did our actions stabilize or destabilize the region? What effect did our conduct of operations in Iraq have on the other theaters of operations? How synchronized was our theater strategy? Clearly, the effects of the U.S. campaign in Iraq are still playing out in the region and continue to resonate across the theater.

Objectives and the Role of Policy. The theater commander will rarely be able to prioritize the theaters of operations within his area of responsibility. This is due to the increasing influence of policy at the theater-strategic level. With regard to objectives, the notion that theater and national objectives are absolutely congruent was confirmed as political attention swayed from Afghanistan to Iraq and back to Afghanistan. Domestic and international politics and Presidential and national credibility all circumscribed the theater commander's ability to plan and execute operations over time and across the theater.[14] In other words, the role of policy was certainly evident and increasingly influential at this level of war, so much so that the role of the theater—that is to say, the combatant commander—often seemed eclipsed.

This has been the case historically. For example, General William Westmoreland, USA, is remembered as the U.S. commander in Vietnam, but few can recall admirals Ulysses S. Sharp, John S. McCain, Jr., or Noel Gayler as USPACOM commanders during the same war. Similarly, few may recall the name of the USCENTCOM commander while General David Petraeus, USA, commanded in Iraq in 2007.[15] To win in Vietnam and Iraq was the theater of operations, theater, and national objective. What, then, is the role of the theater commander? Is he an enabler or a supporter? Someone has to be looking after the region, not just the hot war. What have our military actions in the Middle East, taken as a whole, done for our position and our interests in the region? Did we single-handedly pursue the transitory main effort at the risk of losing perspective and balance in the region as a whole? Did we synchronize and orchestrate multiple campaigns in various theaters of operations across the entire theater?

If we look back at the last decade and ask why we may have failed to achieve our objectives, there are many possible reasons for the lack of complete success. One that is considered less often than others is the failure to think hard about the doctrine, theory, and practice of theater-strategic art. The theater-strategic level shares the same defining criteria in the relationship between the tactical, operational, and strategic levels of war—those of scale, time, objectives, effects, and the role of policy. If, in the future, we can expect near-simultaneous challenges or conflicts in multiple theaters of operations within a single combatant command, we may well profit from paying more attention to the fourth level of war. **JFQ**

Notes

[1] Quoted in Richard A. Preston and Sydney Wise, *Men in Arms* (New York: Holt, Rinehart and Winston, 1979), 15.

[2] Joint Publication (JP) 3-0, *Doctrine for Joint Operations* (Washington, DC: The Joint Staff, 2011), I-13.

[3] JP 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: The Joint Staff, 2013), I-8.

[4] Arthur F. Lykke, "Defining Military Strategy," *Military Review* 69, no. 5 (May 1989); Lawrence Freedman, *Strategy: A History* (Oxford: Oxford University Press, 2013); Colin Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999).

[5] JP 1, I-7.

[6] JP 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, 2010, as amended through March 2015), 249.

[7] JP 5-0, *Joint Operation Planning* (Washington, DC: The Joint Staff, 2011), II-7.

[8] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 379.

[9] Ibid., 606.

[10] See Dennis M. Drew, "Rolling Thunder 1965: Anatomy of Failure," CADRE Paper, Report No. AU-ARI-CP-86-3, October 1986, available at <www.au.af.mil/au/awc/awcgate/readings/drew2.htm>; Sarah Gordon, "Lunch with Robert Caro," *Financial Times*, January 4, 2013, available at <www.ft.com/intl/cms/s/2/5dae469c-50eb-11e2-b287-00144feab49a.html>.

[11] Ronald H. Cole et al., *The History of the Unified Command Plan 1946–1993* (Washington, DC: Joint History Office, 1995), 11.

[12] Peter R. Mansoor, *Surge: My Journey with General Petraeus and the Remaking of the Iraq War* (New Haven: Yale University Press, 2013), 209.

[13] Ibid., 263.

[14] Bob Woodward, *Obama's Wars* (New York: Simon and Schuster, 2010), 280: "What is militarily possible must be politically possible."

[15] "In beginning a partnership with Dave Petraeus that would last nearly four and half years in two wars, I would tell him that Iraq was his battlespace and Washington was mine." See Robert M. Gates, *Duty: Memoirs of a Secretary at War* (New York: Knopf, 2014), 49.

Soldiers from Minnesota National Guard complete ruck march at Forward Operating Base Gerber, Kuwait, January 27, 2012 (U.S. Army/Trisha Betz)

Building Joint Capacity Within the Reserve Component

By Brent French

We should expect increased dependency on the Reserve Component (RC) due to post-sequestration, post–Operation *Enduring Freedom* force reductions within the Active Component (AC), and simultaneous plans to increase regional alignment throughout the RC.[1] RC contribution to all echelons of combatant command planning and execution will expand to allow "military department apportionment of larger Reserve Component formations . . . to Combatant Commander OPLANs [operation plans]."[2] Joint force presentation, planning, and administration will, by necessity, be a Total Force endeavor. This prompts inquiry into the current state and future sufficiency of joint competencies within the RC.[3]

After reviewing the constellation of laws, policies, and practices designed to produce joint qualified officers (JQOs), I believe the current system is serving the AC well but has unintentionally limited the joint potential resident in the RC officer corps to the detriment of the Department of Defense (DOD). In this article, I argue that "joint," as defined by law and implemented within DOD, has become largely an AC competency and that national security would be better served by developing

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U.S. Soldier assigned to 237th Support Battalion of Ohio National Guard provides perimeter security during medical evacuation training exercise at Fort McCoy, Wisconsin, July 21, 2013 (U.S. Army/Darryl L. Montgomery)

a new vision for joint competencies as component-neutral.

Our goal should be a purple Total Force, but right now the RC is watery lavender at best. There are fewer than 600 joint qualified RC officers out of the 56,630 officers at the O-4, O-5, and O-6 grades actively serving in the Reserve or Guard.[4] For every RC joint qualified officer, there are 15 AC joint qualified officers; closing this gap may require modernizing the legacy of the Goldwater-Nichols Department of Defense Reorganization Act of 1986 (GNA) and asking pointed questions about the adequacy of current outcomes. For example, are DOD's best interests served by practices that segregate by component? Is an 85 percent disapproval rate for National Guard joint experience applications acceptable? Are we doing enough to create an educational and experiential base among the 90 percent of the RC force that serves part time? If we believe DOD is better served by a diffusion of joint competencies throughout the Total Force, then the edges and unintended outcomes of the current joint qualification system merit inquiry with an a priori understanding that both DOD and Congress share responsibility for developing an adaptive force capable of meeting the demands of an uncertain future.

Some argue there is no valid reason for joint expansion within the RC, especially in light of Federal law that requires joint qualification among AC (but not RC) officers prior to promotion to general or admiral.[5] The solution to RC jointness, as seen from this perspective, is simple: require joint qualification for RC officers prior to O-7 promotion, and until then there is no real requirement. This logic seems to presuppose that the only reason for becoming a JQO is promotion, and this may be ignoring the intent behind GNA,[6] but requiring JQO status for RC general and flag officers may be a reasonable and durable solution to effect change over a multi-decade horizon. It took over two decades to fully implement JQO status as an O-7 prerequisite within the Active Component, spanning the period from GNA in 1986 through the National Defense Authorization Act of 2007, at which time waiving joint qualification for promotion became extremely difficult. Moving toward mandatory joint officer qualification for the RC also needs to account for limited opportunities within the Guard for joint experience due to the way joint matters are currently defined by law and joint positions are arrayed. For example, there are fewer than 150 joint positions for the 21,150 Army and Air National Guard O-4s, O-5s, and O-6s compared with 1,700 joint positions for the 35,480 Reserve field grade officers. The interrelated nature of Joint Officer Management entails complementary combinations of

experience and education, and this implies that changing Federal law to make general and flag officer promotion standards the same across components can only be successful if there are structural changes to the joint qualification system.

In the meantime, DOD—especially the Office of the Secretary of Defense's Officer and Enlisted Personnel Management (OEPM) area, the Joint Chiefs of Staff (JCS) Manpower and Personnel (J1) directorate, the JCS Joint Force Development (J7) directorate, and the Service chiefs—has executed legislative and executive intent to the maximum (as evidenced by the hundreds of thousands of joint-exposed, -educated, -experienced officers and enlisted members over the last 30 years) and continues to stay attuned to future demands of the Total Force. The statutory requirement for RC joint force development comes directly from Federal law, specifically that joint education and experience "shall, to the extent practicable for the reserve components, be similar to [AC Joint Officer Management]."[7] While I suggest there are emerging opportunities to apply this law for the betterment of national security, there is ample evidence of DOD's pursuit of this mandate.

For instance, tremendous effort has gone into creating and sustaining an RC-feasible joint education pathway (Advanced Joint Professional Military Education, or AJPME), and, on a smaller scale, DOD RC promotion boards began reporting joint qualification statistics to Congress ex post facto in a manner similar to AC reporting.[8] DOD has also been successful in promoting a culture that values joint education and experience, evidenced, for example, in the way RC officers are mentored to understand that joint exposure will help their careers, their Services, and the broader enterprise. Selective screening for joint billets reinforces this message.

The degree to which DOD has enculturated jointness within the RC provides a foundation for enhancing the Joint Officer Management system. While some changes to the joint development process require amending current statutes, a number of areas are under DOD control. For example, tenure standards for part-time RC members serving in joint billets are a matter of DOD policy, as are joint experience application and approval processes. Improving jointness across the force continues to be a shared responsibility between Congress and DOD, and to the degree DOD can enhance jointness within the RC under the "extent practicable" clause in current Federal law, the need to depend solely on Congress for reform is obviated, although close coordination and support should be (and have been) the norm.

A discussion of specific concerns about RC jointness needs a caveat, namely, that we risk preoccupation with the tactical at the expense of the strategic. Strategic inquiry into joint force development must include discourse on the range of competencies the joint development system should inculcate in our future officer, enlisted, and civilian workforce, and this includes reexamining GNA from a 21st-century vantage point. For example, Federal law defines the types of partner organizations DOD can work with to be eligible for joint credit, and the law currently recognizes collaboration with people from other military departments, nonmilitary departments and agencies of the United States, foreign military forces or agencies, and nongovernmental persons or entities.[9] It is possible that a more inclusive definition could account for current organizational arrangements unanticipated even a decade ago (the current list of eligible partners became law in 2006), such as Federal DOD support for state governments and their agencies, or future arrangements we are currently unable to predict. For example, the desired behaviors implied by partnership, joint integration, and collaboration include interdependence, cooperation, and spanning beyond organizational boundaries, competencies critical to successful national security strategy. I suspect our future will demand new levels of interconnectedness among Active and Reserve components in ways not envisioned during the GNA era nor fully anticipated by Total Force and Abrams Doctrine proponents in the 1960s.[10] The ability to work across component boundaries is the same ability needed to work in joint environments; it is no accident that then–Chairman of the Joint Chiefs of Staff (CJCS) General Martin E. Dempsey discussed cross-component relationships in the same breath as joint force development, stating that "we will reexamine and revise the relationships among Active, Guard, and Reserve forces of our military. And we will need to be even more joint—pushing interdependence deeper, sooner."[11]

This article endeavors to reexamine cross-component relationships within the context of joint interdependencies, specifically addressing RC progress on joint education, joint billets and the standard path to becoming a joint qualified officer, the experience path to joint qualification, and the need to acknowledge cross-component experience.

RC Joint Officer Production

Officers become joint qualified through a combination of education and experience. The educational component of the qualification system emphasizes longitudinal development. Cadets are given joint awareness courses, field grade officers (those in grades O-4, O-5, or O-6) attend joint courses that last from 10 to 40 weeks, and new general and flag officers attend a 55-week joint program. The experience component of the joint qualification system recognizes assignments in predesignated joint billets (thus creating the *standard path* to accumulating experience) or emergent and unanticipated jobs related to joint matters for which the member must apply for credit after the fact (known as the *experience path*).[12] When a field grade officer completes joint education and gains sufficient joint experience, he or she may request to become a joint qualified officer.

The majority of Active Component JQOs earn their credentials by attending a 10-week residential course and serving 3 years in a pre-identified billet at a combatant command.[13] The part-time nature of Reserve Component service precludes one-size-fits-all pathways, and DOD has over time successfully advocated for RC specific provisions such as full- and part-time joint billets for the Reserve and

U.S. Army Reservist with 96th Sustainment Brigade participates in rifle training at Fort Hood, Texas, May 16, 2015 (U.S. Army/Kayla Benson)

Guard,[14] as well as creating a 40-week low-residency joint education program as an alternative to the aforementioned 10-week residential course. Furthermore, policies consistent with the idea articulated in the 2005 CJCS *Vision for Joint Officer Development* and reinforced by the 2010 Quadrennial Defense Review (QDR) to "recogniz[e] joint experience whenever and wherever it occurs in an officer's career"[15] are important to RC members who are five times more likely than their Active peers to become joint qualified through the experience path.[16] Moreover (as of 2010), RC members can receive credit for joint work done as civilian government (Federal, state, or local) employees,[17] all of which points to the foresight of the Joint Officer Management community.

Despite elements of the joint qualification system that support recognition of RC jointness, these investments seem to have fallen short of producing significant numbers of RC JQOs, and the Active Component to have an unintentional monopoly on joint officers to the detriment of the quality and quantity of alternatives available to combatant commands and the CJSC. Low RC JQO production has created a situation wherein the AC has 94 percent of DOD JQOs despite having 81 percent of all joint billets. Another way of looking at this imbalance comes from contrasting the number of JQOs with the pool of eligible officers: 10 percent of all AC field grade officers are joint qualified versus 1 percent of all RC field grade officers (see figure 1).

One might anticipate proportionately higher AC qualification rates because there are four times more joint positions in the AC than the RC (thus creating more opportunities to earn qualifying experience), but current ratios indicate we may be overproducing JQOs within the Active Component or underproducing JQOs in the Reserve Component. This is potentially problematic given that DOD intent is to diffuse jointness per the 2005 CJCS Joint Officer Development Vision. With the understanding that joint billets grant experience leading to JQO designation (as distinct from critical joint billets that require JQO status as a prerequisite), we can compare JQO production rates to billets by component to better understand production rates. As one element of this comparison, the AC has 1.17 JQOs

for each joint position as opposed to the RC's 0.33 JQOs for each position. By applying the AC ratio to RC positions, we find a shortfall of 1,438 RC JQOs or, conversely, a surplus of 4,833 AC JQOs. These figures are not meant to be taken literally because component differences (for example, assignment rotations) justify some disparities, but the gap indicates a system working well for one component but underserving another, and this gap continues to widen. During fiscal year (FY) 2014, the RC produced 133 JQOs while the AC credentialed nine times as many (1,195); although this gap is in accordance with current law and policy, it should prompt us to ask if DOD's future is best served by design parameters that contribute to these qualification rates.

JQO production can be further segmented to reveal gaps within the Reserve Component itself. Full-time RC members are becoming joint qualified at higher rates than their part-time counterparts. Nearly 40 percent (51) of the 133 RC JQOs credentialed in FY14 were full-time RC members, noteworthy because full-time members are only 10 percent of the overall RC.[18] This hints at the possibility that the part-time segment of the RC may be on the margins of the joint qualification system as currently encoded in law and policy.

Three conclusions can be drawn from the preceding discussion. First, AC JQO production is robust and outpaces RC JQO production nearly 10 times over. Second, portions of the RC—full-time members—are well served by today's joint qualification system and are gaining sufficient joint experience, education, and credentials. Third, the system that is working relatively well for the AC and full-time RC does not appear to be working as well for the part-time RC, and this creates opportunities to improve the system for greater effect by considering the way experiences are credited, the way education is earned, and the way *joint* is defined.

The Experience Path Is Critical for the RC

The practicum component of becoming a JQO can be satisfied through the standard path (filling a full-time joint billet for 3 years) or an experience path through which people self-nominate relevant experiences for credit. The experience path offers a flexible counterpoint to the occasionally cumbersome and bureaucratic joint billet approval and validation process. RC members who serve full time in a joint billet for 3 years do not need to go through a boarding process for credit, nor do part-time RC members who serve in a joint billet for 6 years for 66 days a year (an additional 30 days per year in addition to normal drill). The "Six and 66" rule changed in 2014 (discussed in the next section), and part-time RC members are allowed to satisfy experience requirements through 3 years of normal drill (36 days per year, or 12 weekends plus a 2-week annual tour) plus an additional 10 experience points. This effectively means the experience path is the only pathway available to RC members who serve part time, and it heightens the importance of this program—conclusions supported through FY14 production data.

Figure 1. Active and Reserve Joint Qualified Officers, Billets, and Field Grade Officer Population as of October 2014

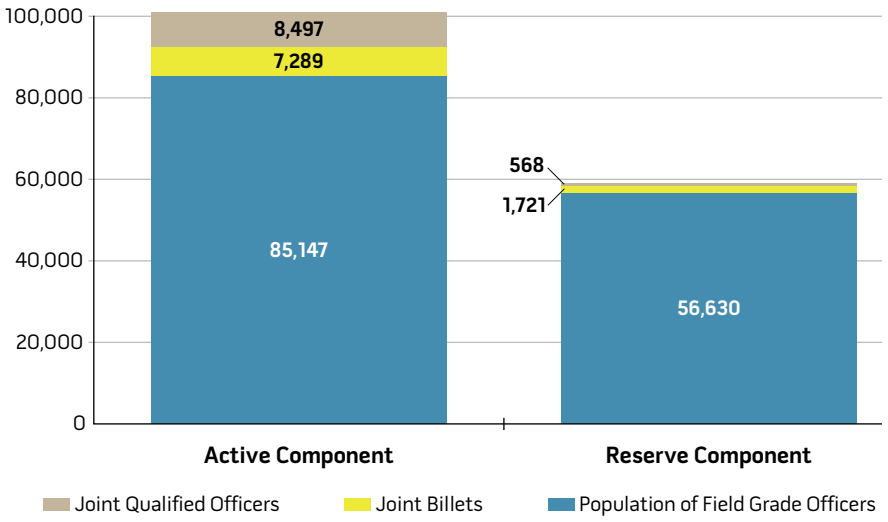


Table. New Joint Qualified Officer Designees for Fiscal Year 2014 by Component and Path

	AC	Full-time RC	Part-time RC	Total RC	Totals
Standard Path	1,055	33	16	49	1,104
Experience Path	137	18	63	81	218
Totals	1,195	51	82	133	1,328

The table shows pathways for the 1,195 AC and 133 RC officers who became JQOs in FY14; 84 percent (1,104 out of 1,328) earned their credentials through the standard path, and 16 percent (218 out of 1,328) became qualified through experience. While the experience path is not especially important for AC officers—only 11 percent (137 out of 1,195) earned joint qualification through this method—the opposite is true for the Reserve Component. The majority (61 percent, or 81 out of 133) of the RC officers who became joint qualified in FY14 got there through the experience path. The experience path is even more critical for part-time RC members; 77 percent (63 out of 82) became JQOs through this self-nomination process.

The importance of the experience path to part-time RC officers implies that investments made in simplifying the application process, enhancing technology used to apply and manage experience points, and streamlining applications and supporting documentation directly

Oregon National Guardsman assigned to 1186th Military Police Company provides security during mission at National Training Center at Fort Irwin, California, August 23, 2015 (U.S. Army/W. Chris Clyne)

benefit tens of thousands of RC members as well as the net beneficiary of Joint Officer Management: DOD. It is possible that joint experience opportunities may shrink in a post–Operation *Enduring Freedom* security environment, and this may lead to a concurrent withdrawal of investment in enhancing the experience path application and approval process. In this case, we should do so only cautiously and with full awareness of the implications for RC officers and the future of RC jointness.

The End of the Six and 66 Rule

In 2007, DOD published the "Six and 66 Rule" for part-time RC members, which stipulated that joint experience credit could be satisfied by serving in a joint position for 6 years and performing an extra 30 days per year in addition to the 1 weekend a month, 2 weeks per year obligation (for a total of 66 workdays, hence the name for the rule). DOD justified this policy by asserting that "RC officers who perform part-time duty generally do not gain sufficient joint knowledge and experience within [normal] . . . tour length requirements."[19] While this may be true, it may not be, and the lack of joint competency assessments makes this impossible to gauge. While Six and 66 may have enhanced the jointness of the Servicemember, the costs were ultimately unsupportable. The Services lost an individual for 6 years, fully encumbered funding for an additional 30 days for each of the 1,700 part-time joint billets had the potential to surpass $10,000,000 a year,[20] and RC joint qualified officers serving as of October 2013 became JQOs through the Six and 66 path.[21]

In 2014, DOD changed the Six and 66 Rule to grant full experience credit for 3 years of service in a joint billet at 36 days per year plus 10 additional experience points ("Three and 10"). The principal benefits of the change include freeing up assignment rotations, which potentially gets more people into joint billets and grants the Services more opportunity to develop Service competencies, and removing the requirement for the extra 30 days of service per year avoids a large funding obligation. I am less certain about a Servicemember's opportunity to earn 10 experience points. A 3-and-a-half-month tour in a combat zone working on joint matters may be the shortest way, and the noncombat pathway might involve a mix of joint exercise planning, taking courses such as the Reserve Components National Security Course, and finding a way to do 5 months of full-time work in a joint billet. On the positive side, there are a variety of ways to earn 10 points; however, this flexibility may also obscure the path for Servicemembers and their mentors. While

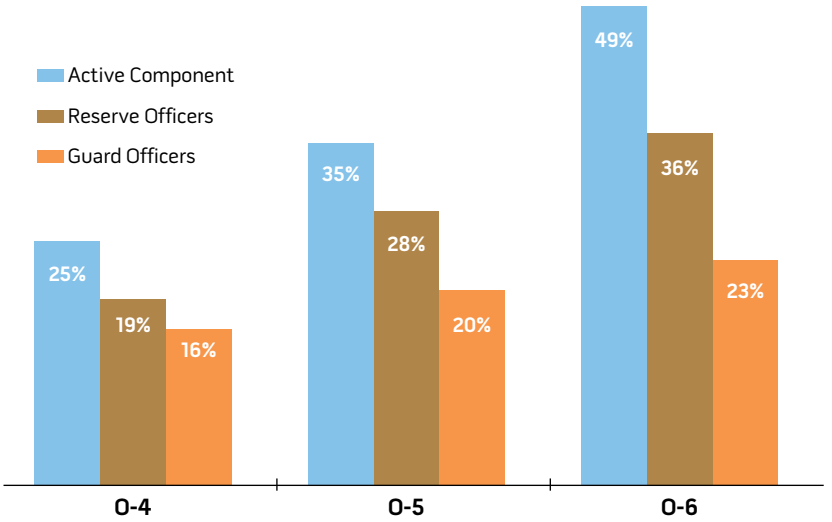
we can anticipate an increase in RC JQO production as a result of the new policy, the rate of increase is difficult to anticipate, and simplifying the process should be a matter for future inquiry. The change from Six and 66 to Three and 10 is a net gain for DOD, and it should be supported by new attention and investment in the process that grants experience credit.

Variance by Component in Approval Rates for Experience Credit

In 2013, over 80 percent of new RC JQOs earned their credentials through the experience path rather than the standard path, while the opposite was true for new AC JQOs; 88 percent earned credentials through the standard path. As important as the experience path is to RC members, analysis of 5 years' worth of applications for joint credit shows the RC lags behind AC approval rates. Understanding why this occurs has not been fully explored and should be shouldered in the future. There are a number of possibilities, including differences in process mentoring, experience in writing applications, qualitative differences in experiences, and subjective factors, so my purpose is descriptive, not diagnostic.

The National Guard is the least successful when applying for experience credit. Figure 2 shows the results of 30,363 self-nominations that were started by Servicemembers beginning in 2008 through April 2013. The overall approval rate on National Guard applications was 15 percent (422 approved out of 2,836 applications) versus 23 percent and 21 percent for the Active Component and Reservists, respectively. One plausible explanation is the lack of opportunity to work joint matters at the state level (which is extremely difficult the way joint matters are currently defined in the U.S. Code), but I suspect Guard officers are applying for experiences gained during contingency operations outside of the United States, although this is speculative and the situation merits further investigation. Our collective goal should be a joint experience crediting system that works well irrespective of component.

Figure 2. Joint Experience Submission Approval Rates B Grade and Component, Beginning with the Member's Initial Self-Nomination Through Final Disposition, from 2008 to April 2013



Separate but Equal Education

Officers are required to complete joint education before they are credentialed as JQOs, and half of Active Component officers satisfy this through a 10-week residential course run by the Joint Forces Staff College called the Joint and Combined Warfighting School (JCWS), while the other half participate in National Defense University or senior Service school residential programs. JCWS expanded in 2012 by allowing the course to be delivered to four 20-person classes per year adjacent to the two combatant commands at MacDill Air Force Base on a trial basis.[22] The intent behind this program was to expand joint professional military education (JPME) Phase II throughput, empower combatant commands to choose attendees, and reduce student time away from family.[23] Furthermore, expanding this program promotes better combatant command outcomes and the diffusion of joint knowledge, and the logical investment evolution seems to be from centralized and residential (pretrial) to decentralized and residential (the trial itself) to decentralized with blended-residential (distance education, which exists today as Advanced JPME).

Advanced JPME (AJPME) is a 40-week blended program (combining distance education with 3 weeks of residency) and is attended exclusively by RC officers.[24] AC officers do not attend AJPME because it does not give them joint education credit despite a curriculum virtually identical to JCWS. AJPME is unable to award the type of credit (JPME Phase II) AC officers need to become joint qualified officers. One of the main barriers preventing AJPME from becoming a JPME Phase II granting program is a 2004 law that requires Phase II programs to include 10 weeks of residential sessions. While it is possible that this law will change in the next several years, this outcome is uncertain; thus, it is worth understanding the arguments for running an integrated program.[25]

The first justification for integration comes from the logic of the Total Force. We fight as a team, so we should train and educate as a team, and the Commission on the National Guard and Reserve articulated this perspective in its 2008 final report with comments about AJPME:

No active component officers attend the program. Such segregation is obviously counter to efforts to integrate the total force: *indeed, the long-standing cultural differences between the active and reserve components heighten the importance*

of incorporating officers into the same programs, which can provide common experiences [emphasis added].[26]

The Total Force justification has been argued by a number of authors and echoed in QDR commitments for RC and AC equity. Then–Vice Chairman of the Joint Chiefs of Staff Admiral James A. Winnefeld, Jr., commented that "the Department must continue to emphasize cross-component education and interaction."[27] The Total Force argument has been countered with references to current law (mentioned above), and the status quo has also been supported by quality concerns about degrading joint educational and enculturation outcomes.

The quality argument may have been valid at one time, but is difficult to sustain in light of ongoing AJPME program improvements. The Joint Forces Staff College shares faculty and content across the 10-week residential JCWS and AJMPE. The AJPME program drew significant praise during its recent accreditation, and AJPME program managers have reduced student rollback to 10 percent or less per class despite a demanding 40-week commitment. These all evidence AJPME's merit. From a faculty and administrative viewpoint, program administrators see no major challenges if AC officers were allowed to attend AJPME, and they report anecdotal evidence of AC members interested in attending AJPME due to the flexible nature of the blended curriculum. If AC officers were allowed to attend AJPME, there is a risk that Services could allocate all of their AJPME quotas to AC officers, thus crowding out the RC and undermining the original intent behind AJPME. How this gets resolved is a topic for future inquiry.

If Active Component officers attended AJPME and received full joint education credit, we might expect cost savings (if the low-residency AJPME was used in lieu of a 10-week residential course for selected AC members) and better acculturative outcomes through cross-component interaction. In addition, AC force development managers would have a third and more flexible option to satisfy joint education requirements. One might expect ongoing and accelerated improvement of AJPME quality because of the inclusion of a new community and the possibility of growth commensurate with demand, and this integrated path could create new opportunities for RC officers to attend in-residence seats vacated by AC or to participate in expanded AJPME programs. The Services (responsible for allocating seats across their components) will gain a new option for routing AC officers through JPME Phase II and can, if they choose, send more high-potential RC officers to JPME Phase II in residence, thus affording greater latitude in Total Force development. While there are structural inhibitors to sending RC members in residence en masse (thus necessitating AJPME), there may be greater RC member willingness to attend school in residence due to a number of factors, including stronger laws to protect civilian jobs and increased competition for promotion due to force reduction. As a matter of future inquiry, each Service can independently verify the RC appetite for school in-residence while staying within the bounds of expanding jointness to the extent practicable for the RC.

In summary, integrating AJPME will be a multiyear endeavor and will require congressional support, persistence within DOD, and Service cooperation, but the payoff will be better joint outcomes across all components.

Redefining Joint and Rewarding Cross-Component Collaboration

The strategic issue that transcends discussion about joint education policy, the joint experience credit process, and other Joint Officer Management implementation issues is this: we assume cross-component compatibility at our own peril and are subject to the fallacious beliefs that necessitated GNA in the first place, especially during fiscally lean periods and in the absence of extended contingency operations. The boundary-spanning practiced when Active, Reserve, and Guard members stand shoulder-to-shoulder and focus on common objectives increases the likelihood of spanning and cross-domain success in other arenas. Boundary-spanning is a capacity unto itself; it is one answer to General Dempsey's 2014 challenge "to reassess what capabilities we need most, rethink how we develop and aggregate the Joint Force, and reconsider how we fight together."[28] Redefining "joint" to include cross-component work acknowledges existing forms of collaboration as well as allowing room for emergent relationships (for example, Reserve and Guard partnerships during Hurricane Sandy relief operations). To this end, it is worth considering policies to promote this strategic vision and provide incentives for cross-component work as a long-term force development issue.

DOD has evolved beyond the original inter-Service cooperative mandate of GNA, and Congress has expanded the boundaries of joint beyond sister-Service work. For example, the 2006 QDR strongly advocates for interagency competencies because:

much as the Goldwater-Nichols requirement that senior officers complete a joint duty assignment has contributed to integrating the different cultures of the Military Departments into a more effective joint force, the QDR recommends creating incentives *for senior Department and non-Department personnel* to develop skills suited to the integrated interagency environment [emphasis added].[29]

This line of reasoning has helped shape new meanings of force integration, with the implication that officers could earn joint credit by working on joint matters with people from other military departments, nonmilitary U.S. departments and agencies, foreign military forces or agencies, or nongovernmental entities. We have institutionalized an Army (circa 2000) concept known as Joint, Interagency, Intergovernmental, and Multinational (JIIM), and by 2008 JIIM had become operational doctrine as well as a key tenet of military leadership development. The ability to work across organizational boundaries and build networks outside of normal hierarchies[30]

Soldiers participate in Sapper Stakes, a combined competition hosted by 416th Theater Engineer Command and 412th TEC to determine best combat engineer team in Army Reserve (U.S. Army/Michel Sauret)

has become a key component of the Chairman's Capstone Concept for Joint Operations, wherein the Chairman urges DOD to:

become pervasively interoperable both internally and externally. Interoperability is the critical attribute that will allow commanders to achieve the synergy from integrated operations this concept imagines. Interoperability refers not only to materiel but also to doctrine, organization, training, and leader development. Within Joint Forces, interoperability should be widespread and should exist at all echelons. It should exist among Services and extend across domains and to partners.[31]

Although use of the term IIM—interagency, intergovernmental, and multinational—has been subsumed under the term *interorganizational* as of 2011 with the publication of Joint Publication 3-08, *Interorganizational Cooperation During Joint Operations*, the concept remains vital to the way the Nation projects national and military power.

The way we define *integrated forces* is only half of the joint matters equation, and the content, type, and level of the work performed are given equal weight within the joint qualification system. While joint education is premised on the longitudinal layering of new knowledge (constructivism), our ability to collaborate with others is assumed. For example, imagine two Army officers (with no previous joint experience points) working on a North Atlantic Treaty Organization staff, one with previous tactical experience as part of an Alliance-heavy Combined Joint Special Operations Task Force during Operation *Enduring Freedom* and the other without. Which officer is primed to make an immediate impact, to apply conditioned knowledge, to have a richer developmental experience? Our current approach seems unable to formally account for experiences at the tactical and operational level, yet these experiences serve as critical building blocks for success at the strategic level. We do not need to scale a cliff when all we need is a ramp.

Although we promote, recognize, and reward our officers for boundary-spanning, we mostly fail to recognize and promote boundary-spanning across components, although this varies by Service. For example, the Marine Corps Inspector-Instructor program puts AC and RC Marines into frequent contact, and the Marine Corps has been able to support (rather than hinder) cross-component flow through the prudent use of promotion policy and cultural transformation. The other Services have their own robust versions of Total Force integration, but none are accounting for,

promoting, or privileging work across component boundaries in the same way they account for joint Service collaboration. This is partially due to Federal law that defines "joint" as working with more than one military department, and one might argue DOD is required by law to operate jointly, but we are not required by law to operate as an integrated Total Force in the same way jointness is legislated. DOD and national security may be better served by an alternative arrangement, one that encourages officers and enlisted members to develop boundary-spanning capacity in a joint, interagency, intergovernmental, international, nongovernmental, or Total Force context. The proposed paradigmatic shift is from "JIIM" to "JITIM," where the "T" stands for Total Force. Conflicts in Iraq and Afghanistan put components into constant contact with each other, and despite intentions to increase peacetime use of the RC, we risk regressing into pre-9/11 enclaves unless deliberate efforts are made to value Total Force integration as much as we value multi-Service and interorganizational work.

Conclusion

Developing joint competencies within our Reserve Component officer corps must be embraced as a strategic human resources investment and an essential Total Force enabler because diffusion of joint experience and education gives joint consumers more flexibility and creates cultural preconditions for adaptive success. This matter takes on new urgency in a post-sequestration, post–Operation *Enduring Freedom* environment, and evidence points to untapped potential within the part-time force that can be harvested through modest financial investment, cooperation with Congress, and a willingness to think critically about the types of capabilities our future force will need.

If we agree that boundary-spanning is a cornerstone adaptive capability, then there are a number of realities to be examined and alternatives we can generate, including the following: GNA reform, which helps us reconsider what we value; changes to the joint experience crediting system that improve how we account for the things we value in a way that improves outcomes for all components; and possible new ways to improve our joint education system to promote greater inclusiveness and cross-component interaction. There are limits to the amount of enhancements that can be done within the Department of Defense, and congressional will and cooperation will be needed to improve outcomes for the Guard, Reserve, and Active components alike. JFQ

Notes

[1] Scott F. Donahue, Randy Buett, and Katherine Numerick, "Implementing Regional Alignment: The U.S. Army Reserve Approach," U.S. Army Reserve Command White Paper, February 2013; Vice Chairman of the Joint Chiefs of Staff (VCJCS) and Assistant Secretary of Defense for Reserve Affairs (ASD/RA), *Comprehensive Review of the Future Role of the Reserve Component: Volume I, Executive Summary and Main Report* (Washington, DC: Department of Defense [DOD], April 5, 2011). In a March 2013 speech to the House Armed Services Committee Reserve Caucus, Deputy Assistant Secretary of Defense for Reserve Affairs (Readiness, Training, and Mobilization) Paul D. Patrick argues our thinking is inflected by "the end of major force commitments to Afghanistan; focus on full spectrum operations in the pivot to the Asia-Pacific region; severely constrained DOD budget for the foreseeable future; inevitable (though not yet fully recognized or admitted) active force structure reductions." The inevitability of full-time force reductions is due to "the steadily increasing fully-burdened and life-cycle costs of active duty military manpower and the 'all-in' support costs of the volunteer force [which] will either drive further reductions in active component structure or result in unwise trade-off[s] among personnel, training and modernization." See Arnold L. Punaro's May 6, 2013, memorandum to the Secretary of Defense titled "Strategic Choices and the Reserve Components," available at <http://rfpb.defense.gov/Portals/67/Documents/RFPB_memo_SecDef_re_SCMR_and_QDR_FINAL.pdf>.

[2] Patrick.

[3] Derived from the Title 10 U.S.C. 38 § 668 (available at <www.gpo.gov/fdsys/pkg/USCODE-2011-title10/html/USCODE-2011-title10-subtitleA-partII-chap38-sec668.htm>) definition of joint matters, *joint competencies* as used in this article are the knowledge, skills, and abilities required to achieve unified action by integrated military forces, and *jointness* is a measure of degree. In this article I am using joint competencies, jointness, and joint capacity interchangeably, although there are alternative interpretations. *Joint competencies* were defined in the *CJCS Vision for Joint Officer Development* (Washington, DC: The Joint Staff, November 2005) as having a strategic mindset, critical thinking ability, and joint warfighting skills, and then-Chairman General Peter Pace sought to "inculcate jointness in all colonels and captains," 8. *Jointness* was defined in Margaret C. Harrell et al., *A Strategic Approach to Joint Officer Management* (Santa Monica, CA: RAND, 2009), as a set of billet attributes related to joint matters.

[4] Margaret W. Burcham, "Memorandum for the Deputy Assistant Secretary of Defense for Military Personnel Policy: Joint Staff Input for the Fiscal Year 2014 Annual Report to Congress," December 2014.

[5] Priscilla Offenhauer, *General and Flag Officer Authorizations for the Active and Reserve Components: A Comparative and Historical Analysis* (Washington, DC: Federal Research Division, Library of Congress, 2007), available at <www.loc.gov/rr/frd/pdf-files/CNGR_General-Flag-Officer-Authorizations.pdf>; Kenneth Olivo, "Reserve Joint Officer Qualification System—Getting it Right," Strategy Research Project paper, U.S. Army War College, March 2008, available at <www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA478984>. Furthermore, Title 10 U.S.C. 36 § 619a requires joint qualification for Active Component (AC) general officer/flag officer promotion. See <www.gpo.gov/fdsys/pkg/USCODE-2011-title10/html/USCODE-2011-title10-subtitleA-partII-chap36-subchapII-sec619a.htm>.

[6] There are at least three perspectives on why DOD seeks to create joint qualified officers (JQOs). One is promotion to general or flag officer. As it applies to the Reserve Component (RC), people argue that since being a JQO is not required for promotion, we should not worry about RC JQO. The second theory suggests JQOs exist to fill critical Joint Duty Assignment List positions; some argue that since there are only 5 critical billets in the RC (compared to 448 in the AC), RC JQO is moot. The third theory suggests all O-6s and higher need to be "inculcated [with] jointness" (*CJCS Vision for Joint Officer Development*, 8) and JQO is a measure of those fully qualified. Yet another theory seems to use JQO status partially as a thermostat for DOD's joint temperature, and I am writing from this stance.

[7] See Title 10 U.S.C. 38 § 666.

[8] See DOD Instruction 1300.19, "DOD Joint Officer Management Program," available at <www.dtic.mil/whs/directives/corres/pdf/130019p.pdf>; CJCS Instruction 1330.05, "Joint Officer Management Program Procedures," June 2013, available at <www.dtic.mil/cjcs_directives/cdata/unlimit/1330_05.pdf>.

[9] See Title 10 U.S.C. 38 § 668.

[10] The Abrams Doctrine soothed fears about moving to an all-volunteer force by suggesting that the proper balancing of Active

and Reserve capabilities would ensure future wars could not be fought without the RC, and RC mobilization would bring "the will of the people" into the fight.

[11] Martin E. Dempsey, "Moving Forward Together," *Joint Force Quarterly* 64 (1st Quarter 2012), 4.

[12] A Joint Qualification System primer is available at <http://prhome.defense.gov/rfm/mppPortals/52/Documents/RFM/MPP/OEPM/dDocs/JOM%20Fact%20Sheet%20-%2030%20Mar%202010.pdf>.

[13] Half of AC members receive joint professional military education (JPME) II through the Joint and Combined Warfighting School per year, 88 percent earn Level III via the standard experience path, and over 60 percent of Joint Duty Assignment List positions are in the combatant commands.

[14] The RC has 19 percent of DOD's 8,999 joint positions. Of the 1,726 RC positions, 361 are full-time billets, of which a third (113) belong to the Guard. Half of the 1,365 part-time positions are Individual Mobilization Augmentees, with the remainder unit-based (Traditional Reservists or Troop Program Units). The Guard does not have any part-time joint duty assignment list positions, according to the Defense Manpower Data Center Data Request DRS64275. See also DOD Instruction 5105.83, "National Guard Joint Force Headquarters—State," 2011, available at <www.dtic.mil/whs/directives/corres/pdf/510583p.pdf>; Scott D. Legwold and David W. May, "Disjointed: Give Reservists and Guardsmen a True Path to Joint Qualification," *Armed Forces Journal* (November 2011), available at <http://armedforcesjournal.com/2011/11/7886381/>; Harry J. Thie et al., *Framing a Strategic Approach for Reserve Component Joint Officer Management* (Santa Monica, CA: RAND, 2006), available at <www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG517.pdf>.

[15] *Quadrennial Defense Review Report* (Washington, DC: DOD, 2010), 54, available at <www.defense.gov/qdr/images/QDR_as_of_12Feb10_1000.pdf>.

[16] Burcham.

[17] DOD Instruction 1300.19. RC members have submitted over 10,510 applications for joint experience since 2008. The civilian government job (Federal, state, or local) provision has yielded an estimated 10 to 12 applications for credit since 2010, several of which have been approved.

[18] Assistant Secretary of Defense for Reserve Affairs, "Reserve Affairs Overview," 2013, available at <http://ra.defense.gov/about/>.

[19] DOD Instruction 1300.19, as of March 2014, 42.

[20] Thirty extra military personnel appropriation (MPA) days for each of the nearly 1,400 part-time positions with a $200 per MPA day payroll (an average of O-4, O-5, and O-6 pay) plus retirement accruals.

[21] Personal communication with the Joint Staff J1.

[22] Vincent C. Bowhers, "Manage or Educate: Fulfilling the Purpose of Joint Professional Military Education," *Joint Force Quarterly* 67 (4th Quarter 2012), 26, available at <www.dtic.mil/doctrine/jfq/jfq-67.pdf>; Scott A. Carpenter, "The Joint Officer: A Professional Specialist," *Joint Force Quarterly* 63 (4th Quarter 2011), 125, available at <www.dtic.mil/doctrine/jfq/jfq-63.pdf>; Bob Feidler, "Professional Military Education: Is its Evolution in Step with Changing Conditions?" *The Officer* (July–August 2012), 44, available at <http://d27vj430nutdmd.cloudfront.net/22271/117437/117437.1.pdf>; Robert P. Kozloski, "Building the Purple Ford: An Affordable Approach to Jointness," *Naval War College Review* (Autumn 2012), 41, available at <www.usnwc.edu/getattachment/05f44720-70ce-4e7d-be2b-6cc189fc719f/Building-the-Purple-Ford—An-Affordable-Approach-t.aspx>.

[23] Personal communication with Jerome M. Lynes, the Joint Staff J7 Deputy Director for Joint Education and Doctrine, and John J. Roesner, Joint Education Advisor.

[24] Advanced JPME can be traced to a 1997 initiative by ASD/RA Deborah R. Lee that resulted in a pilot program in 2001, and it predates improvements in distance learning, the post-9/11 era of AC/RC integration, and the future implications of an operational Reserve. See Dayton S. Pickett, David A. Smith, and Elizabeth B. Dial, "Joint Professional Military Education for Reserve Component Officers: A Review of the Need for JPME for RC Officers Assigned to Joint Organizations," Logistics Management Institute (November 1998), available at <www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA357506>.

[25] Title 10 U.S.C. 107 §§ 2154 and 2156.

[26] *Commission on the National Guard and Reserves: Transforming the National Guard and Reserves into a 21st-Century Operational Force, Final Report to Congress and the Secretary of Defense* (Washington, DC: DOD, January 31, 2008), 142, available at <http://cgsc.contentdm.oclc.org/cdm/ref/collection/p4013coll11/id/1655>.

[27] Olivo; Bob Feidler and Scott A. Sauter, "JPME Overhaul: Reserve Component Members Should Have Equal Access to Reach Level III Status," *The Officer* (March–April 2012), 38, available at <http://d27vj430nutdmd.cloudfront.net/22271/104530/104530.1.pdf>; Scott A. Sauter, "JPME Integration Acknowledges Value of Guard and Reserve," *The Officer* (March–April 2012), 42, available at <http://d27vj430nutdmd.cloudfront.net/22271/104530/104530.1.pdf>. Reserve Forces Policy Board Annual Reports from 2003 to 2007 are available at <http://ra.defense.gov/rfpb/reports/>; *Quadrennial Defense Review Report*; VCJCS and ASD/RA, *Comprehensive Review*, 24.

[28] Martin E. Dempsey, "Mount Up and Move Out," *Joint Force Quarterly* 72 (1st Quarter 2014), 4.

[29] *Quadrennial Defense Review Report* (Washington, DC: DOD, 2006), available at <www.defense.gov/qdr/report/Report20060203.pdf>.

[30] This is known as "boundary-spanning" in leadership development arenas; see Richard L. Daft, *Organizational Theory and Design*, 3rd ed. (New York: West Publishing Co., 1989), and the Center for Creative Leadership's White Paper, available at <www.ccl.org/leadership/pdf/research/BoundarySpanningLeadership.pdf>. See also the Army's Teams of Leaders approach used in U.S. European Command, available at <http://usacac.army.mil/cac2/AOKM/ToL.asp>.

[31] *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: The Joint Staff, September 2012), available at <www.jcs.mil//content/files/2012-09/092812122654_CCJO_JF2020_ FINAL.pdf>.

Admiral Michael S. Rogers, USN

An Interview with Michael S. Rogers

Joint Force Quarterly: *You are in a unique position in that you wear three hats: commander of U.S. Cyber Command* [USCYBERCOM], *director of the National Security Agency* [NSA], *and chief of the Central Security Service* [CSS]. *The newest of these three, of course, is U.S. Cyber Command. Can you outline what your command's mission and focus are, or what you think they should be?*

Admiral Michael S. Rogers, USN, is the Commander of U.S. Cyber Command, Director of the National Security Agency, and Chief of the Central Security Service. He was interviewed in his Pentagon office by William T. Eliason, *Joint Force Quarterly* Editor in Chief.

Admiral Michael S. Rogers: We are three organizations brought together under one leader because of the great synergy and complementary nature to the mission set among the three organizations. It was a very conscious decision to bring them together under one individual. You really get a lot of synergy by doing that, and you increase capability end-to-end as opposed to breaking it into three different components. Of the three hats, the two that I really focus on externally are commander of USCYBERCOM and director of the NSA.

USCYBERCOM has three primary missions. The first is to operate and defend DOD [Department of Defense] information networks, and to protect our information, data, and weapons systems. A lot of people tend to focus on the network piece, and that's a very important part, but we've also got to be mindful that it's about more than just the network. It's data, but it's also those combat systems that have vulnerabilities within them that we have to defend. The second mission set is to create the dedicated cyber mission force—much of it under our operational control—that DOD will then utilize and execute from the defensive to the offensive to support the combatant commanders. Our third mission is—when directed by the President in response to or in anticipation of cyber activity of significant consequence—to be DOD's response element to try to forestall, if you will, attempts to penetrate, destroy, damage, or manipulate U.S. infrastructure, such as the power grid or financial networks.

For the NSA, we're best known as a foreign intelligence organization. We use signals intelligence as a tool to generate insights into what nation-states, groups, and actors are doing that are of concern to both us as a nation and to our friends and allies around the world, and to help ensure the security and safety of U.S. personnel wherever they are in the world. The second mission set for the NSA—and the one that I think is increasingly relevant in the future, not that I think foreign intelligence isn't, but it's certainly being called upon more and more—is information assurance. We developed the cryptographic

standards, for example, for all classified systems within DOD. We partner with other areas of the Federal Government to develop the same thing for the U.S. Government, and then we also partner with others to help develop the cryptographic standards more broadly for us as a nation. In addition, we help provide capability that defends DOD networks. We take our foreign intelligence insights into what nation-states, groups, and actors are doing within this cyber arena and we ensure that they get to a broad audience both within the broader U.S. Government and then out into the private sector.

Increasingly, the other aspect of our information assurance mission is NSA's ability to do big data analytics—that is, really in-depth digital forensics—and to provide expertise as to how somebody got into your network, how do we get them out of your network, and what should your network configuration look like to make sure it doesn't happen again. As part of that information assurance mission, NSA has increasingly been called upon to provide expertise by partnering with USCYBERCOM to support DOD, and to support activity across the Federal Government, in the private sector, and in partnering with the FBI [Federal Bureau of Investigation] and Department of Homeland Security [DHS]. I never thought, for example, that as director of the NSA I would be dealing with the aftermath of a major penetration and destructive act directed against a motion picture company. But that is exactly what happened in the case of the [Democratic People's Republic of Korea's] destructive hack of Sony. In partnering with the FBI, we were asked to bring our capabilities in order to figure out what happened, how it happened, and how we can make sure it doesn't happen again.

JFQ: *How does your mission at USCYBERCOM differ from those of your brother organizations, apart from what you just described?*

Admiral Rogers: USCYBERCOM is specifically focused primarily within DOD for most of its missions. There's one exception: defending critical U.S. infrastructure. The biggest difference, though, is that USCYBERCOM is a traditional Title 10 military operational organization. NSA is part of DOD and is an intelligence organization. Most of what we do at NSA is under Title 50, the part of the U.S. Code that addresses the conduct of intelligence operations. They're related but different, operating under two different authorities with different concentrations. As a result of those authorities, USCYBERCOM is a traditional military operational organization. It's just focused on a very particular domain—in this case cyber—but it does that on a global basis. That's another thing that makes USCYBERCOM a little different: we are defined by our mission, not by geography, as opposed to organizations like U.S. Central Command or U.S. Pacific Command, where you're defined in some ways by your geographic area. We are defined by our mission, and we do our mission on a global basis. Those are the really big differences. And then I remind people, "Hey, look, the fourth star comes from being the commander of the U.S. Cyber Command and not from being the director of the National Security Agency."

JFQ: *You recently signed the USCYBERCOM's Vision statement. The statement aligns with DOD's cyber strategy. How does this vision build on the DOD strategy?*

Admiral Rogers: We partnered with others to help in the development of the strategy. It's a much broader team than just us. I don't want to pretend otherwise. The DOD cyber strategy is designed to articulate in a broad manner what we are trying to achieve within cyber from a departmental perspective, and what are the basic goals that we are going to achieve to meet that strategy.

I asked our team at USCYBERCOM to think about how we would execute our set of responsibilities within that strategy. We needed to develop a vision that included a solid commander's intent and a broad scheme of maneuver for our assigned forces that was easily understandable by the command, our partners inside DOD and across the U.S. Government, our industry and academic partners, and our nation's allies and security partners around the world.

I have this discussion all the time with fellow leaders across DOD. This is the one mission set where literally if we have given you access to a keyboard, you now are operating in this domain, and that represents both a potential advantage and quite frankly a potential threat or vulnerability. It is the nature of communications and the flow of information. Cyber and the network are such foundational features that they are inculcated in almost every aspect of our personal and professional lives. Because of this, one of the points I try to make is that our effort has to be so much broader than just the dedicated cyber mission force that USCYBERCOM is focused on building and then employing. Because every single individual with keyboard access is a particular point of vulnerability, we've all got to realize that we're all part of the solution. This isn't a case of "This isn't something I have to worry about. This is for USCYBERCOM to do," or "This is something my chief information officer is going to do." Experience certainly teaches those of us in government, as well as in the private sector, that you can have the greatest technical configuration in the world, all of which, if you're not careful, can be undermined by the actions, choices, and behaviors of users. We've seen that with spear phishing. We've had to deal with that on a significant scale in the Defense Department.

JFQ: *You mentioned defending the Nation's vital interests in cyberspace. Can you describe in general terms how your command works that problem set, especially since most of cyberspace is not in DOD networks?*

Admiral Rogers: If you look at the USCYBERCOM Vision, one of those foundational tenets that I said is going to drive the way we approach this, that is, the scheme of maneuver and what

U.S. Air Force Airmen set up radio frequencies kit during weeklong annual exercise Vigilant Shield 15, emphasizing integrated DOD and civil response in support of national strategy of aerospace warning and control, defense support of civil authorities, and homeland defense (U.S. Air Force/Justin Wright)

commander's intent is, is that partnerships are everything in this mission set. And those partnerships can't be just within DOD. We've got to think more broadly, both across the government and more widely in the private sector. So if you look at key partners for us, they not only go to the [combatant commands], the Services, and our own subordinate commands, but they also go to other elements in the Federal Government such as the FBI and DHS. They go to private industry. I remind people that we're an organization that applies technology to attempt to defeat technology and attempts to use technology against us.

Much of that technology is developed in the private sector. It didn't come from the government. It's not something that DOD developed. So our ability to partner with the private sector is really important for us. It's why, for example, DOD created the Defense Innovation Unit–Experimental [DIUx] construct in Silicon Valley. It's why USCYBERCOM has structured and created a similar effort aligned with DIUx but slightly apart from it in what we call "the point of partnership." We decided this was a worthwhile endeavor when we asked ourselves, "How can we build on DOD presence in Silicon Valley in the form, for example, of Reservists who are working there in the tech sector, and could we use that example as an initial proof of concept?" If we make it work, then there are a lot of other pockets of really high-tech activity, technological expertise, and industrial capacity that we could partner with. For example, Austin, the Triangle, Boston, and you could make a case for the DC-Metro area, particularly Northern Virginia. There's a pretty good technology slice out toward Washington Dulles International Airport where we could find partners.

JFQ: *As your command works on turning strategy and plans into operational outcomes, what are some of the challenges of becoming effective at the operational level of cyberspace?*

Admiral Rogers: Our number one priority is the defensive mission. The challenge for us on the defensive side is trying to overcome decades of investment in which redundancy, resiliency, and defensibility were never core design characteristics. When we built the networks that we take for granted today, to include the majority of our weapons systems, it was about efficiency, effectiveness, cost, and operator ease of usage. It wasn't, "We've got nation-states, groups, and individuals attempting to penetrate these systems on a regular basis and we've got to build a system that makes that tough." It was not a core design characteristic. It was a different world then. But we're living in a world now in which much of the infrastructure that we take for granted, that we use everyday to execute our operations around the world, was built around a different environment and a different set of premises. Our challenge now is to overlay defensive capabilities on those structures even as we work to change them from the ground up. We're trying to defend a set of networks and a set of weapons systems and their capabilities in which defensibility was never built in. The system just isn't as efficient, and it doesn't scale well.

There is also the question of how to educate a workforce. Again, when every individual becomes an operator in this environment, we're often only as strong as our weakest link in the interconnected digital world of the network and our weapons systems. When operators don't make smart choices, you start to have significant operational impact, and we have already experienced that across DOD concerning recent spear phishing issues. Frankly, when I talked to the individuals who had clicked on the links, I asked, "Could you give me a sense of why you opened this attachment?" These were not junior, inexperienced people, mind you. And they said to me, "Sir, it was early in the morning and I had my head down and I'm blowing through my emails and I've got to keep moving. I've got to get ready for my first meeting." You can have the greatest system in the world, but it's fundamentally undermined by an attitude of "I'm in a hurry; I don't have time." In the world we're living in now, do our personnel really believe we can operate as a Department if the premise is, "I only have time for this under certain conditions"? And it isn't that they're bad people. I don't mean to imply that for one minute. But we need to embrace a whole different thought process.

We have created a culture in DOD where we literally give probably a million people a weapon in some form, and yet we've taught them, "This is something we've given you for a specific purpose and it should be used in a very controlled manner under very specific circumstances, and here are things we will not tolerate." For example, we all know that the accidental discharge of a weapon is an offense punishable by a court-martial. DOD culture teaches us that you use the weapon you've been given for a specific set of purposes within a lawful framework and a specific set of authorities. You don't take that weapon and just decide, "It's late at night, I'm on the post, it's dark and cold, I'm in the eighth hour of a 12-hour watch, and I'm just tired and bored. Hey! Let's do a little quick draw." We don't do that because no one wants to shoot someone accidentally or be shot by the person involved in this quick-draw scenario. We also know that, culturally, it's not tolerated, it's unacceptable and unprofessional, and you will be held accountable. We've got to, over time, do the exact same thing at USCYBERCOM. You can affect a significantly large number of people and potentially cost the government significant money just by not paying attention.

JFQ: *One of the challenges any joint command has is how to work in support of the joint force objectives. How will you at USCYBERCOM work to this end of working with the joint force?*

Admiral Rogers: I think that's one of the main strengths of the current construct, and I say this as someone who has worked this from a Service perspective regarding generating capability to provide to a joint commander to employ. When we first approached cyber in DOD, we were certain that the operational capacity of this capability needed to be done within a broader joint framework. We said from the beginning—even with this new mission set—that we've got to build it that way from the ground up. We brought in the Services, and it was a combination of the Services and the joint world that wanted to mandate a joint training set of requirements so that every Service is generating capacity to the same standard. We needed to build a common scheme of maneuver across the Department so that every Service is generating teams to a single blueprint. That's proved to be very powerful because it gives us maximum flexibility and because it makes us much more efficient with resources. We build to one standard and one model across the entire Department.

In addition, we also needed a total force solution regarding how to do this. That solution has to involve the Active Component, the National Guard, the Reserves, and a civilian role. To maximize effectiveness, we needed to bring together all of those key parties to the fight. The answer can't be all civilians or all contractors or that we'll simply make it a Title 10 act of force so that we don't need the Guard or Reserves. During these discussions—I was in a different role then and more junior—we asked, "How do we look at this as a more integrated enterprise across the Department and do it from the very beginning, not as an afterthought?" The total force package allows us to achieve a greater range of expertise and capability than we would if we just sub-optimized any particular element.

JFQ: *What effort is your command undertaking to get your stated goal of full-spectrum capability and capability development?*

Admiral Rogers: We're building capacity in terms of the teams. The Cyber Mission Force is approximately 6,200 people and 133 teams, and each team has a specific mission. There are three different types of teams, aligned along those three different missions we talked about initially. We've tried to optimize the teams, their people, and their tools by the mission we've assigned to them. Again, it's not aligned with the way we do things with the rest of the mission sets within the Department. We're generating a cyber mission force capability mission. We've identified the tools and capabilities, and we continue to get more insights as we actually use the force. For example, what are the additional enabling capabilities and tools they need? Experience is helping us really refine the defense capabilities that offer the greatest return. If we're not careful, cyber could become a massive cost sump that consumes a huge amount of resources. We've got to be good stewards of the resources allocated to us because we're in a declining budget environment. Requirements far exceed resources across the Department as a whole, and as important as cyber is, I also remind the force that no one is going to write us a blank check.

What we owe the Nation is a prioritization of what we think we need, and how we prioritize it. If you'll remember, defensive priority number one is generating that range of options to include the offensive piece, which is the priority number two mission. We have to make

sure we're aligned appropriately. We've discussed the force, the improvements we think we need to make concerning both the way our networks are configured and the way we're building them as we bring the Joint Information Environment online. We've also asked ourselves how we change culture. As much as people love to focus on technology when it comes to cyber, I remind them that in the end, this is an enterprise driven by both men and women in the workforce, and it's significantly affected by the choices that they—the operators of those keyboards I mentioned earlier—make. It's also largely driven by what they do. If we don't set an expectation, if we don't train and educate, if we don't make the workforce aware of what the implications are for our set of missions as a Department and the individual actions and choices they're making, then we are sub-optimizing, and it's like fighting with one hand tied behind your back. You can have the greatest system in the world, but if you have a workforce that continuously chooses to make bad choices in what they're doing everyday on the network, it makes the defensive problem incredibly hard. At the same time, on the acquisition side, we need to ensure that defensibility, redundancy, and resiliency are built into our networks, weapon systems, and platforms from the ground up and not treated as a capability to be bolted on afterward.

To give commanders and policymakers a greater range of options when using cyber as a tool, what are the capabilities we need to be generating? We're in the midst of working that out. When our commanders and national policymakers ask DOD for a set of options to respond to an event, we want to be able to offer them a wide range of capabilities. We're in the early stages of this journey, but we know where we need to get to.

JFQ: *Can you outline the enablers your command is likely to bring to the joint force commander to assist in meeting this joint force mission?*

Admiral Rogers: What I tell my fellow operational commanders is USCYBERCOM was created in no small part to help combatant commanders achieve their mission sets. This includes defending key cyber terrain and ensuring that their command and control and the capabilities that they count on—from their networks to their weapons systems—are fully available and ready to operate as designed in the time and place of their choosing. In addition, we want to be able to generate capabilities that meet their specific operational needs, not what I think they need. USCYBERCOM exists to help ensure the success of our fellow operational commanders. And we are focused just on one particular domain and on one particular set of tools and capabilities, just as U.S. Special Operations Command, for example, is focused on its own mission.

JFQ: *What level of success has your command had so far in support of your mission, and can you assess how far along you are toward achieving your vision?*

Admiral Rogers: I would contend first that we have to acknowledge that we are not where we want to be, both as a Department and as an organization. One of our challenges is figuratively building and flying the plane at the same time. If you look at the way we normally generate force capability as a Department—a fighter squadron, carrier strike group, a Marine Expeditionary Unit, or a BCT [Brigade Combat Team]—we generally will do the individual training, bring the individuals together as a unit, give them their equipment and their table of equipment and organization, make sure they're outfitted in accordance with their mission, and then spend a period of time training them from an early preliminary stage to where they are ready to operate in a complex, multidimensional environment. Then we deploy them or employ them. Generally, we employ them only after we've completed those preparations. We're not going to take a brand new BCT that has not even completed its training but has its initial cadre of people and, for example, deploy them to Afghanistan or Iraq. But that's the normal scenario we're using in cyber because there's such a mismatch between requirements and capabilities. Because we're still building this, as soon as we get an initial cadre we're putting the team in contact and working against opponents, while at the same time we've got to get more people to finish building out the team. We've got to finish their training. We've got to get them into exercises. We just don't have the time—we can't afford to wait. So it's a different model that is not an insignificant leadership challenge, whether you're running one of those 133 teams or you're the subunified commander trying to put it all together and generate capacity and apply it now as opposed to waiting until all the man, train, and equip work is complete. And when I say "waiting," I remind people that we made the decision to start building this dedicated cyber mission force in fiscal year 2013.

We gave ourselves between 2013 and 2016 to start to build. And our experience in cyber is no different from the more traditional domains. It takes us, depending on the skill sets, anywhere from 6 to 24 months to provide individuals with their initial cyber training, and that varies based on whatever their particular missions or skill sets are. Once we give them basic individual training, then they're ready to train as a unit. Our experience has been that it takes about 2 years. We started the first build in 2013, which meant the first operationally ready people started showing up in 2015, and it'll take us until about 2018 to finish the build so that the teams are trained and equipped and ready to fully employ. In some areas we're slightly ahead of schedule, and in others we're slightly behind.

Overall, we've probably exceeded expectations because we're creating something completely new and we don't have a model to use. I'm satisfied with where we are in generating capability and I'm pleased with our defensive focus. I think experience is giving us a sense of where to find the greatest return on investment and where we need to focus. It's not a question of not knowing what to do; it's the time needed to generate the capability and the necessary resources.

F-15E Strike Eagles participate in Red Flag 15-1, featuring aircraft from 21 different Air Force squadrons, offering realistic combat training involving air, space, and cyber forces from the United States and its allies (U.S. Air Force/Aaron J. Jenne)

It can't be done in a few years. As I said in my last testimony before the HASC [House Armed Services Committee] and SASC [Senate Armed Services Committee], we're dealing with decades of investment choices, and I can't overcome that in a couple years. It's going to take us some time. Meanwhile, we've got to be held accountable for execution of our mission set.

JFQ: *Each of the Joint Chiefs of Staff whom I've interviewed has mentioned sequestration and how difficult it is to deal with. Obviously you're a growth industry at the moment, but even in a growth industry you still have to have someone pay the bills. And if no extra money is coming in, how do you connect these two dots?*

Admiral Rogers: Look at the government shutdown in 2013. We assessed that it probably cost us 6 months in generating the Cyber Mission Force. When the government shut down we had to close all the schoolhouses, and because we didn't know how long the shutdown was going to last, we said, "We've got to let people plan here and we can't just jerk them around." We sent people home. We had people who were physically traveling to start schools and training. We had to stop exercises. That simple, short shutdown probably cost us 6 months because of the unknown. Then we had to take time to bring the schools back online. We had to rework temporary duty plans, we had to rework range access time, and we had to rework exercises. One of the points I tried to make when I testified before the HASC and the SASC last week was that a lot of people tend to focus on the technology. It's not that the technology isn't important. But I remind them that USCYBERCOM, at its heart, is an enterprise driven by dedicated men and women. That's our edge—their motivation, their commitment, and their focus on the mission. And particularly for the civilian part of the workforce, they could be making a whole lot more money in the private sector. Within this career field you don't have problems getting jobs outside of government. What has helped us is the mission and the sense of serving something bigger than yourself. You're doing something that makes a difference, something that's important to the Nation.

During the week leading up to the continuing resolution in October 2015, and with just a hint of another potential government shutdown, there was more perturbation in our workforce where people started reaching out to me, particularly on the civilian side, saying, "Sir, this would be the second time in 2 years and, quite frankly, I can't build a future for my family with this kind of uncertainty. I have a mortgage to pay. I have children in college. I have bills. And I have a dream

Harpoon missile launches from guided-missile cruiser USS *Shiloh* (CG 67) during Exercise Valiant Shield 2014, focusing on real-world proficiency in sustaining joint forces at sea, in air, on land, and in cyberspace (DOD/Kevin V. Cunningham)

for what I want for my family. I can't meet these responsibilities if I'm working in an environment where, just on a casual whim, politicians say, 'Hey, we'll just shut the government down and go home. We might pay you, we might not pay you, but we're not making any promises or guarantees.'" And during a shutdown you can't legally be at work, so I don't care how motivated you are or how much you love what you do. If you show up, we have to make you go home.

Sequestration is hard for us to overcome. It really demoralizes the workforce, both civilian and military, who ask, "Is this something I want to build my professional life around?" I tried to tell our congressional oversight organizations, "This is where you can really make a difference for us: mature, steady funding at a level you determine. There's a cost to sequestration, and the perturbation has a human dimension to it."

JFQ: *You're a graduate of the National War College at the National Defense University* [NDU]. *How has your joint education experience had an impact on your leadership approach, especially as you mentor your workforce?*

Admiral Rogers: I've always been a firm believer that education never stops. Learning never stops. It doesn't matter how senior you are. It doesn't matter if you're enlisted, officer, civilian. Learning is a lifelong commitment. Education is an important part, and it's a very important part of that learning dynamic. Each of us has to commit to the fact that the U.S. Government, the military, and the Services aren't necessarily going to teach us everything we need to know. As professionals, each of us has to invest in ourselves and with our own time in the quest to learn. It drives what you read. It drives how you spend your time. Do you go to symposiums? Do you go to conferences? It's all part of professional development and it's something I always thought was important. I loved my time at NDU. I had just made O-6 when I was at the National War College. It gave me a chance coming off sea duty to step back and think. I went from there to the Pentagon, where I was exposed at a much more strategic and broader level to policy, resources, and operational topics that, frankly, I didn't have to worry about when I was a tactically oriented person, which was what drew me into the military in the first place. It's why I wanted to join the Navy. Being at sea is what I love.

I remind people that education doesn't necessarily give you all the answers, but it teaches you how to think about generating answers. It gives you a frame of reference. And it reminds me that even as we often think that right now we're dealing with the toughest issues, the one thing that's been truly constant is the nature of man—the way people respond to challenges, the insertion of new technologies into societies. Do you think it's a new phenomenon? I don't think so. There's great insight to be gained by studying how societies and militaries have dealt with both the injection and the development of game-changing technologies before. How did these changes affect them? What kinds of choices did they make? What did nation-states, groups, and other actors do in response?

I've just had my 34th commissioned anniversary and I think I have—more so than many—11 or 12 years of joint time. I loved my joint time. Don't get me wrong. The knowledge and insight I learned from a Service perspective about what it means to be a Sailor and about what it means to be a maritime professional are foundational for me, and the joint world allowed me to build on that and to apply it in a broader context. But that joint time also helped me learn about the things the other partners bring to the table. How can you maximize all those capabilities to achieve the broader mission? That's really been the power of the joint side. I've got great pride in my Service and I am proud to call myself a Sailor. But I also love the fact that I've met some amazing men and women in the Army, Marine Corps, Air Force, and Coast Guard who make you say, "I'm glad we're on the same team. You guys are really good at what you do."

JFQ: *Is there anything else you'd like to discuss that we haven't already talked about?*

Admiral Rogers: One thing that I find heartening is that I've been in command 18 months (I've been working in cyber off and on in the Department for about 10 years), and I have not run into a scenario yet where we didn't have the level

Exercise Cyber Guard 2015 includes joint Service and civilian personnel performing operational and interagency coordination as well as tactical-level operations to protect, prevent, mitigate, and recover from cyberspace incidents (DOD/Marvin Lynchard)

of expertise that we needed within the organization. Sometimes we didn't have enough of it—it would be one or two people—but we're building from a really good place, and I love watching the ingenuity, agility, and innovation that the men and women accomplish here. Every time we go into contact with these opponents, we learn and we change. What we're doing now is different from what we were doing a year ago. We are always asking ourselves, "What have we got to change? What do we have to do differently to stay ahead of these adversaries? What are their TTPs [tactics, techniques, and procedures]? Should their TTPs shape the way we structure ourselves, the way we align ourselves, the way we organize, the command and control construct we use? What are the tools and the capabilities we need?" This professional environment has such a dynamic, constantly changing, agile, and innovative mission set.

USCYBERCOM is only 5 years old. Because we don't have the history and we're building the formal structure from scratch, we get a little more flexibility. We have a lot more options. When I started in cyber in the Department 10 years ago, my takeaway was that this was so fundamentally different it was going to require developing a different lexicon, different terminologies, fundamentally different approaches, and a different organizational construct. For example, I was really concerned at the time about how to develop a workforce to execute the mission set within the normal structure we use in the Department, where it's shaped like a pyramid. That is, it's up or out. You tend not to do the same thing for years at a time. This is particularly true for officers—we want to broaden you; we want to give you a greater set of experiences. So my concern with that "pyramid" was, "Is that really fundamentally compatible with what we think we need in cyber?" As I look back on it 10 years later, I've come to the conclusion that cyber is an operational domain in which we do many evolutions that are similar to what our counterparts do in the other domains. For example, we do maneuver, reconnaissance, fires, and defend key terrain. We need to maximize in cyber the utility of a common joint terminology, a lexicon, and command and control structures such as those that DOD uses to execute missions across the other domains. That will help us assimilate a much broader workforce. If we treat this as something so specialized and so different that only a handful of people truly understand, we'll never get to where we need to be. We need to broaden this. We need to make sure people have a broad understanding of it, even if you're not involved day to day in this specific mission set. **JFQ**

U.S. Navy's fourth Mobile User Objective System communications satellite will bring advanced, new global communications capabilities to mobile military forces (Courtesy United Launch Alliance/U.S. Navy)

Beyond the Build

How the Component Commands Support the U.S. Cyber Command Vision

Compiled by the U.S. Cyber Command Combined Action Group

Networked technology is transforming society. That transformation has come with significant change to war and the military art. Until recently, cyber considerations rarely extended beyond the computers and cables that supported kinetic warfighting functions. The natural domains—land, sea, air, and space—dominated the planning and conduct of operations, while the risks entailed in using cyberspace for military purposes went largely unrecognized. Today, cyberspace ranks as its own warfighting domain—one that intersects the four natural domains.

Cyberspace operations demand unprecedented degrees of collaboration, which the U.S. Government must approach holistically—leveraging resources and expertise from industry, academia, and state/local governments, as well as allied and coalition partners. U.S. Cyber Command (USCYBERCOM) works as a subordinate, unified command under U.S. Strategic Command (USSTRATCOM) to conduct the full scope of cyberspace operations. These have three distinct mission areas: to secure, operate, and defend the Department of Defense Information Network (DODIN); to provide combatant command support; and to defend the nation against strategic cyber attack. USCYBERCOM is building the cyberspace operations force of tomorrow, and

looking beyond that build to how the command will operate with mission partners in this dynamic and contested space.

USCYBERCOM and its components act to help the joint force operate globally with speed, flexibility, and persistence. USCYBERCOM headquarters focuses on defining and achieving strategic objectives and has delegated operational-level cyber mission areas to three types of headquarters. The first of these is the Cyber National Mission Force (CNMF), which defends the United States and its interests against strategic cyber attacks. The second type of headquarters comprises four distinct joint force headquarters (JFHQs) in addition to Coast Guard Cyber Command (CGCYBER) to support the geographic and functional combatant commands across the globe. The standup of a JFHQ-Cyber by each of the USCYBERCOM Service cyber components—Army Cyber Command (ARCYBER), Fleet Cyber Command (FLTCYBER), Marine Corps Cyberspace Command (MARFORCYBER), and Air Forces Cyber (AFCYBER)—constitutes a vital first step to integrating cyberspace operations to deliver effects in support of combatant commanders. The third type of JFHQs and newest of USCYBERCOM's operational commands, JFHQ-DODIN, provides unity of command and unity of effort to secure, operate, and defend the DODIN.

Each of these components and its respective joint force headquarters have a vital role to play as we finish building the Cyber Mission Force (CMF) and work together to bring the USCYBERCOM Vision to fruition. The main elements of this vision serve to organize and guide their efforts (see the interview with Admiral Michael S. Rogers, USN, in this edition of *Joint Force Quarterly*). *JFQ* asked each of the component commands to summarize its efforts on behalf of the collective enterprise toward implementing the vision. This article represents a compendium of these contributions, organized around the main elements of the vision's intent.

Motivated by Mission

Each of the Service components contributes to USCYBERCOM missions by providing an array of cyber forces and capabilities in order to defend DOD Information Networks, bolster the capabilities of combatant commands, and strengthen our nation's ability to withstand and respond to cyber attacks of significant consequence. Each component also fulfills Service-specific requirements in cyberspace, which are correlated with and unique to the individual Service's role in the domain of land, sea, air, or space.

ARCYBER's three priorities are to operationalize cyberspace operations to support combatant and Army commands at echelon; pursue a more defensible network; and organize, man, train, and equip ready cyber forces. These priorities strengthen both joint and Army cyber capabilities, enable ground forces to continue their dominance in the land domain, and support the Army's top goal of readiness to fulfill its primary mission to win in ground combat. ARCYBER supports Army tactical forces and has made delivering cyberspace operations capabilities to Army corps and below a major focus. The integration of networks, systems, and data has delivered unprecedented awareness and warfighting capability to the tactical edge—to the point that it is now a dependency, which by extension makes it a vulnerability that must be protected.

FLTCYBER's missions align to those of USCYBERCOM. They are to operate Navy networks as a warfighting platform, produce signals intelligence, deliver warfighting effects through cyberspace, create shared cyber situational awareness, and establish and mature the Navy's cyber mission forces. FLTCYBER conducts operations in and through cyberspace, the electromagnetic spectrum, and space to ensure Navy and joint freedom of action and decision superiority while denying the same to the adversary. Achieving this requires FLTCYBER to operate and defend the Navy's networks and shore-to-ship communications including Nuclear Command and Control Communications (NC3), plan for and operate Navy spacecraft, oversee information operations, coordinate Navy electronic warfare, and plan and direct operations under USCYBERCOM.

The Coast Guard focuses on three strategic priorities in the cyber domain: defending cyberspace, enabling operations, and protecting infrastructure. CGCYBER ensures the security and resiliency of Coast Guard information technology systems and networks to ensure the full scope of Coast Guard capabilities. Maritime critical infrastructure and the Maritime Transportation System (MTS) are vital to our economy, national security, and national defense. The MTS includes ocean carriers, coastwise shipping along our shores, the Western rivers and Great Lakes, and the Nation's ports and terminals. Cyber systems not only enable the MTS to operate with unprecedented speed and efficiency, but also create potential vulnerabilities. This technology is inextricably linked with all aspects of Coast Guard operations. As the maritime transportation Sector Specific Agency (as defined by the National Infrastructure Protection Plan), the Coast Guard provides the unity of effort required to protect maritime critical infrastructure from attacks, accidents, and disasters.

Along similar lines, MARFORCYBER is shaping the tools, doctrine, processes, and capabilities to ensure Marine cyber mission teams provide effective support to USCYBERCOM and the joint force, while also ensuring Marine Air Ground Task Forces (MAGTFs) achieve victory on the modern battlefield. AFCYBER's mission statement—"Fly, Fight and Win In, Through, and From Cyberspace"—captures a breadth of responsibilities to include extending cyber capabilities to the tactical edge of the battlefield.

Each Service, as part of the broader joint force team, is responsible for protecting its Service-specific cyber network (for example, LandWarNet, AFNET, Marine Corps Enterprise Network, Navy Marine Corps Intranet) to ensure its ability to detect, mitigate, and defeat advanced persistent threats capable of compromising the network and DODIN itself. The scale of this mission cannot

U.S. Army Chief of Staff General Mark Milley watches officers from Army Cyber Institute demonstrate Cyber Capability Rifle during 2015 Association of the U.S. Army annual meeting, Washington, DC (U.S. Army/Chuck Burden)

be overstated. The Navy Marine Corps Intranet, for instance, consists of more than 500,000 end user devices, approximately 75,000 networked devices, and nearly 45,000 applications and systems across three security enclaves.

Each Service cyber component focuses on configuring and operating layered defense-in-depth capabilities to prevent malicious actors from gaining access to Service-specific networks. This is an enterprise-wide effort in which the components work in collaboration with their parent Services, USCYBERCOM, JFHQ-DODIN, the Defense Information Systems Agency (DISA), and the National Security Agency (NSA). The Service cyber components function at the operational and tactical levels of this domain and rely on JFHQ-DODIN to ensure lateral coordination, information-sharing, and synchronization—ensuring the unity of effort for the operation and defense of the entire DOD information environment.

With its standup in 2010, USCYBERCOM rapidly focused on providing mission assurance for the DOD information network, deterring or defeating strategic threats to U.S. interests and infrastructure, and supporting joint force commander objectives. While responding to evolving threats, a new need surfaced for an agile force ready to engage adversaries in the tactical cyber fight when directed by the President. This force gathered talent from across the DOD and Intelligence Community to build teams with the capabilities and understanding needed to collaborate with foreign and domestic partners engaged in the same mission. Since 2013, the Cyber National Mission Force has developed into a highly proficient and agile force operating across the spectrum of conflict in cyberspace, with appreciation for the effects that cyberspace operations have on the physical warfighting domains.

The CNMF is a joint force of military and civilian members from the Army, Marine Corps, Navy, Air Force, Coast Guard, and Intelligence Community. It will comprise 39 teams and nearly 2,000 personnel spread over four locations. The force consists of three types of maneuver elements, each with a unique and specified mission. National Cyber Protection Teams (NCPTs) are defensive elements working within DOD networks and, when authorized, outside DOD networks, identifying and mitigating vulnerabilities, assessing threat presence and activities, and responding to adversary actions. National Mission Teams are maneuver elements conducting on-network operations in neutral and adversary territory,

looking for indications and warning of adversary cyber activities, and enabling cyber effects when authorized and directed. National Support Teams are analytic elements providing planning, development, and technical support to National CPTs and Mission Teams. The creation of teams with distinct, mutually reinforcing missions presents commanders with forces capable of confronting and defeating a growing and creative series of threats.

Powered Through Partnerships

Cyberspace is the quintessential collaborative environment where teaming with partners inside and outside government will determine how successful we are in defending the nation. Adversaries' targeting of both public and private sectors underlines the necessity of building strong partnerships.

The Army's cyber community includes a triad of three critical partners—ARCYBER, the new Cyber Center of Excellence (CCOE), and the Army Cyber Institute (ACI)—that collaborates to advance the state of the art in cyber operations and work with the larger Army to share cyber-related advances. The CCOE, located at Fort Gordon, Georgia, is ARCYBER's institutional cyber component and is developing its structure, curriculum, and methods to meet future challenges and mission requirements. The ACI, located at West Point, is the primary cyber innovation agent and bridge builder, responsible for developing partnerships between the Army, academia, government, and industry, while providing insight into future cyber challenges through interdisciplinary analysis on strategic cyber initiatives and programs. ARCYBER, CCOE, and ACI work together to develop high-payoff external partnerships across the interagency community, U.S. Government, and national and international cyber communities of interest.

FLTCYBER, as the Navy's warfighting fleet in cyberspace, maintains partnerships to leverage their strengths and maintain focus on the missions. The Deputy Chief of Naval Operations for Information Dominance prioritizes and allocates resources; Navy Information Dominance Forces man, train, and equip forces; Space and Naval Warfare Systems Command, as the technical authority, delivers and sustains capabilities and systems. FLTCYBER's operational partners execute the Navy's mission every day to reduce the network attack surface, educate both commanders and users, modernize unsupported systems, improve patch maintenance and configuration control, inspect compliance, and reduce our collective risk.

The Coast Guard has a unique set of authorities to conduct cyber operations in support of its missions. It works with partners across the Federal Government; in foreign governments; at the state, local, tribal, and territorial levels; and in the private sector. At the Federal level, the Coast Guard aligns capabilities and coordinates operations with the Department of Homeland Security (DHS) and works with the Federal Bureau of Investigation (FBI), the NSA, USCYBERCOM, and other departments and agencies. The Coast Guard trains its operational personnel to the applicable standards of all partners, and where appropriate, integrates its cyber personnel into partner agencies to enhance coordination. The Coast Guard also fosters relations with private sector members of the Marine Transportation System to better understand its vulnerabilities and support their cybersecurity efforts.

For AFCYBER, 25th Air Force (25 AF) continues to be a critical strategic partner across all missions because success in today's cyberspace operations hinges on the effectiveness of cyber intelligence, surveillance, and reconnaissance (ISR) to meet warfighter requirements. AFCYBER and 25 AF have partnered on the Cyber–ISR–Electronic Warfare Mission Integration Team initiative aimed at leveraging their respective unique capabilities to develop and field innovative, multidomain solutions in support of combatant and air component commanders' urgent needs.

The CNMF plans, directs, and synchronizes full-spectrum cyberspace operations to be prepared to defend the U.S. homeland and vital interests from disruptive or destructive cyber attacks of significant consequence. Headquartered at Fort Meade, Maryland, it has forces in Georgia, Texas, and Hawaii, and engages with partners around the world. It synchronizes efforts across disparate time zones and optimizes the balance between on-site and remote operations to achieve lasting effects. The success of the CNMF mission relies on establishing and nurturing partnerships, including relationships with the NSA, DOD, and Intelligence Community, to widen its awareness and capacity to deliver effects. The CNMF is strengthening partnerships with DHS and FBI to enable future operational success and expanding its partnerships to include other Federal agencies, industry, academia, and the international sphere.

The cyberspace domain is primarily owned and operated by private industry and thus the ability to collaborate with industry partners benefits the Nation's cybersecurity posture. The Army has hosted multiple industry events including a Joint Service Academy Cyber Summit with C-suite executives from industry and a twice a year Cyber Talks event held at the National Defense University that convenes innovators from industry and inside DOD to share ideas. FLTCYBER leverages industry leaders to help defend the network. Experts from the Navy have worked with industry to use data analytics and create new techniques that better detect malicious activity. In the past, FLTCYBER has also teamed with industry to conduct defensive cyber operations on Navy networks. In addition to daily interaction with industry partners, AFCYBER has developed Cooperative Research and Development agreements with cybersecurity, telecommunications, and cleared defense contractors (comprising at least 28 industry partners) to collaborate on innovative technologies and concepts, advance the science and technology of cyberspace operations, and exchange best practices. JFHQ-DODIN continues to partner with industry to include exploring cooperative research and development efforts and academic outreach. Additionally, it leverages DISA's long-established industry, academia, and research and development efforts to improve its approach for shaping DODIN operations and defense.

Local partnerships also exist. The Army has a relationship with Augusta, Georgia, and is building strong ties in Atlanta to create a public-private "center of gravity" in support of cyberspace operations, workforce development, and technical innovation. AFCYBER has a long-standing relationship with San Antonio, Texas (referred to as "Cyber City USA"), which includes civic-leader engagements to swap lessons related to cybersecurity and support programs to engage young students. The Air Force Association's "CyberPatriot" STEM (science, technology, enginneering, and mathematics) initiative sees Airmen mentor cyber teams as part of a nationwide competition involving over 12,000 primary and secondary school students.

Each of the Service components has ties to academia. CGCYBER is leveraging its relationship with the U.S. Coast Guard Academy and industry to capitalize on its knowledge of trends in cyberspace. MARFORCYBER is leveraging partnerships with The Johns Hopkins University, Carnegie Mellon University, and Naval Postgraduate School (NPS) to build knowledge, skills, and experience in a continuous cycle of professional development. ARCYBER has championed scholarships and collaborative research with top-tier academic institutions such as The Johns Hopkins University, University of Maryland, Carnegie Mellon University, Virginia Tech, and Georgia Tech. AFCYBER leverages expertise from the Air Force Research Laboratory, MIT Lincoln Laboratory, MITRE, Air Force Institute of Technology, National Air and Space Intelligence Center, Air University, and the U.S. Air Force Academy, as well as academia and industry to meet growing joint warfighter needs.

FLTCYBER is well integrated into academia, in particular NPS, where the FLTCYBER commander serves as the sponsor for the computer science, cyber systems and operations, and master of science in applied cyber operations curricula. These programs deliver graduates who meet the evolving operational needs of the Navy and other Services. NPS offers outstanding graduate degree programs that contribute to the development of officers and enlisted personnel. These programs include electrical and computer engineering, computer science, cyber systems operations, applied mathematics, operations analysis, and defense analysis. The Naval War College, which hosts a Center for Cyber Conflict Studies, is incorporating cyber into its strategic and operational level of war courses at both intermediate and senior graduate course levels, and has emphasized cyber in its wargaming role. FLTCYBER partners with the U.S. Naval Academy's Center for Cyber Security Studies, as well as offering summer training opportunities to Academy and Reserve Officer Training Course (ROTC) Midshipmen. The Navy is also working with the Johns Hopkins Applied Physics Laboratory, Carnegie Mellon, Penn State, University of Texas, MIT Lincoln Laboratory, and University of Hawaii. In addition, FLTCYBER has partnered with the University of Maryland, Baltimore Campus, to offer internships for recruiting skilled civilian and military cyber workforce professionals.

Oriented Toward Outcomes

The Commander's Vision for USCYBERCOM and its operational components calls for integrating cyber into new ways of defending, fighting, and partnering. To execute their missions, USCYBERCOM and its components must turn strategy and plans into operational outcomes. This requires commitment to an operational mindset whereby networks and cyber capabilities are not administered but rather led by commanders who understand they are always in real or imminent contact with adversaries.

More than 5 years ago, the Navy created a fundamental shift from "Information in Warfare to Information as Warfare," and has assimilated this operational mindset. The Navy recognizes that freedom of action in cyberspace is essential to maritime operations. From satellites orbiting above the Earth to the "Silent Service" below the seas—and everything in between—the Navy depends on cyberspace for assured command and control, integrated fires, battlespace awareness/intelligence, maneuver, protection, and sustainment. Understanding that the "cyber platform" extends beyond traditional IT and business systems, the Navy is extending its cybersecurity apparatus to all networked capabilities including warfighting control and combat systems, combat support, and other information systems while strengthening authority and accountability. Task Force Cyber Awakening (TFCA) was established to improve the Navy's cybersecurity posture based on procedures devised for Operation *Rolling Tide*, the response to incidents involving the Navy Marine Corps Intranet in 2013. The Navy realized it needed the ability to "maneuver" the network during cyber incidents. TFCA addresses organizational, financial, cultural, workforce, and technical issues. It includes development of a cyber resiliency plan—the CYBERSAFE program—that focuses on assuring the survivability of critical capabilities.

The Army Chief of Staff challenged ARCYBER to demonstrate tactical cyber integration at Brigade Combat Team–level home-station training and at the Combat Training Centers. Lessons from these pilots are informing the Army's employment and integration of cyberspace capabilities and the convergence of information operations and electronic warfare. The Army will use exercises to inform the concepts, organizations, and capabilities needed to support ground forces. These experimental efforts are helping to create a cultural shift in which innovators, experimenters, and creative thinkers are valued despite drawdowns and resource constraints. These efforts also teach operational forces how to integrate cyber/electronic warfare capabilities into their traditional missions, how to defend their networks, and how to operate under degraded network conditions.

In the same manner with which the Marines employ combined arms to conduct maneuver warfare, MARFORCYBER is integrating and synchronizing the employment of offensive and defensive cyberspace capabilities to protect Marine Corps networks. Operating and defending these networks are as critical to the Corps as securing command posts and combat operations

centers. In January 2015, then-Commandant Joseph Dunford directed integration of cyberspace operations using warfighting principles to increase the MAGTF capacity and capability to operate in and exploit the cyberspace domain. To achieve this end, MARFORCYBER has begun to unify its networks, adapt its manpower model to serve the unique requirements of the cyber domain, define standards for a sustainable cyber readiness posture, and reduce acquisition times to better equip forces with the tools they need to outpace the adversary.

AFCYBER's overhauled command and control structure has been at the center of transforming what was previously a reactive, maintenance-based planning approach to a more operationally focused strategy, plans, and execution process. Built around the joint planning process and modeled after an air operations center organization, Air Forces Cyber now produces daily cyber tasking orders that direct units in the field that perform the full spectrum of cyber operations. These operations include over 50 defensive cyber missions per day to defend key cyber terrain in support of combatant and air component commanders.

To maximize the combat capabilities of its existing cyberspace operations forces, AFCYBER established a new force-employment strategy by designating cyber "force packages" and synchronizing them in "vulnerability windows." Like joint force employment in traditional combat operations, these concepts allow the decomposition of existing and emerging cyber capabilities into smaller, more flexible, and consistent units of employment. The result has been simultaneous versus serial actions, compressed execution timelines, and less capability "left on the ramp." Two years ago, AFCYBER was able to conduct a few named operations simultaneously in defense of AFNET and key cyber terrain. Today, the same teams are executing more than 15 named cyberspace defensive operations at once across the AFNET, as well as providing direct support across the full spectrum of cyberspace operations to combatant and air component commanders around the world. Realizing the need to operationalize training, AFCYBER also mirrored cyber operations training based on lessons shared by its counterparts in air and space operations and leveraged the mission qualifications process to ensure cyberspace operators meet mission-ready qualification standards.

U.S. Navy's fourth Mobile User Objective System communications satellite, encapsulated in 5-meter payload fairing, lifts off from Space Launch Complex-41, September 2, 2015 (Courtesy United Launch Alliance/U.S. Navy)

Cyberspace operators from across all the Services participate in USCYBERCOM events such as CYBER FLAG, in addition to Service-specific exercises such as the Air Force Warfare Center's RED FLAG, to hone skills through real-world, force-on-force exercises that integrate cyber capabilities in a live-training environment. These simulations are accelerating the development and fielding of new tactics, techniques, and procedures, and complement efforts to integrate cyber effects with both kinetic and nonkinetic operations across multiple warfighting domains.

The CNMF operates at the tip of the cyber spear, turning USCYBERCOM operational imperatives into executable actions. CNMF teams work together to achieve lasting effects on the enemy: offense informs defense, defense enables offense. As such, the CNMF is poised to deliver a wide range of response options tailored to specific cyber actors and

scenarios. It provides opportunities for its people to grow as members of an operational force and empowers them as leaders who understand technical solutions and inherent risks while being able to communicate with nontechnical senior military and policy leaders. Developing leaders capable of directing cyber operations integrates cyber as a tool in the greater mission to protect national security.

Completing the Build

The Commander's Vision for USCYBERCOM and its operational components calls for accelerating full-spectrum capacity and capability development to give commanders and policymakers the options they need to execute full-spectrum operations. Generating the DOD cyber capability and capacity falls to the Service cyber components with their authorities to man, train, and equip the force.

Each of the Service cyber components is building maneuver elements for the Cyber Mission Force by manning, training, and certifying teams to USCYBERCOM standards. Over the past 2 years, the Army has begun aligning command and control by assigning the Network Enterprise Technology Command to Army Cyber Command and building its Active Component CMF with the goal of having all 41 Army CMF teams on track for full operational capability no later than 2018. Reserve Component forces are an essential part of the Army's cyberspace force, and ARCYBER is also building 21 additional CPTs, 11 in the Army National Guard and 10 in the Army Reserve. To help meet the Army's demand for cyberspace talent, in September 2014 the Army created its first new career branch in nearly 30 years—the Cyber Branch and Career Management Field—to manage cyber talent for the Service and allow career-long professional development. Since September 2014, the Army has handpicked approximately 300 Soldiers from across the force to serve as the first cohort of Cyber Branch officers from lieutenant to colonel, and partnered with ROTC, West Point, and the Officer Candidate School to provide a continual flow of fresh talent. The Cyber Center of Excellence created the first-ever Cyber Basic Officer Leader Course less than 10 months after the branch was formed.

The Navy is on course to have personnel assigned for all 40 Navy-sourced CMF teams in 2016 with full operational capability in the following year. Additionally, by 2018, 298 cyber Reserve billets will also augment the Cyber Force manning plan. The Navy has made establishing and maturing its Cyber Mission Force a top priority. Working with the University of Maryland Center for the Advanced Study of Language, FLTCYBER is developing a Cyber Aptitude and Talent Assessment that will identify talent across the spectrum of technology, analytic capability, and ingenuity. In an effort to meet the growing demand, the Navy is creating ways to better assess, track, and manage cyber talent in the workforce.

FLTCYBER has several efforts under way to identify individuals with critical cyber warfare skill sets by building awareness of Navy cyberspace operations and associated career options. The U.S. Naval Academy established a summer intern program with Task Force 1090, Navy Cyber Warfare Development Group, enabling Midshipmen to gain exposure to a wide range of cyber operations over a 6-week period as part of their summer training. A similar program was established for Naval ROTC Midshipmen with computer-related curricula that allow them to work with Task Force 1020, Navy Cyberspace Defense Operations Command, for their first class summer cruise.

The Air Force will contribute nearly 2,000 Airmen to support the joint cyber force. To meet the CMF's growing requirements, the Air Force has restructured and expanded its training and force development programs, nearly quadrupling the rate at which cyberspace operators and intelligence specialists qualify to join Air Force cyber teams in support of the CMF. Likewise, long-standing cyber programs such as the Air Force Institute of Technology as well as new ones such as the Air Force Academy's Cyber Innovation Center are exposing the next generation of innovative leaders to technical, policy, and operational concepts to prepare them for cyberspace operations. AFCYBER leverages traditional Reservists, Air Reserve Technicians, and Air National Guardsmen across the command to meet its warfighting commitments. These Total Force members meet the same demanding standards and serve alongside their Active-duty counterparts.

Like the Army, the Air Force instituted a new cyberspace officer career field specific to Cyberspace Warfare Operations to develop Airmen with the requisite skills and expertise to meet the Nation's emerging needs. The 2013 standup of a Cyber Weapons Instructor Course at the Air Force Warfare Center was a milestone on the way toward normalizing cyberspace operations in support of combatant and air component commanders by focusing on the tactical employment of these emerging capabilities. In addition, a Cyber Intermediate Leadership program was developed to ensure cyber operators and intelligence officers have the right professional growth opportunities in key command and operational positions. Recently, AFCYBER established a Ready Cyber Crew program to ensure all cyberspace operators receive the right amount and type of continuation training to maximize their combat effectiveness and, ultimately, mission success. Collectively, these steps have become integral to developing Airmen into a ready cyber force capable of operating in joint and coalition environments.

By 2020, the Marine Corps will have deployable, full-spectrum cyberspace operations capabilities integrated into the MAGTF, enabling it to fight a single-battle across all five domains of warfare using a combined-arms construct. Three of thirteen MARFORCYBER CMF teams have achieved full operational capability and are operating in support of Marine Corps, USCYBERCOM, and combatant commander missions. As it enters the final stages of its CMF team build, MARFORCYBER is establishing the Marine Corps Cyber Warfare Group, which will be responsible for

manning, training, and equipping the Marine Corps CMF teams. To support the training and exercises of cyber units, MARFORCYBER is also developing a persistent training environment to enhance military occupational skills proficiency, test and develop next generation solutions, host remote training and education of Marine Corps operating forces, and refine tactics, techniques, and procedures.

JFHQ-DODIN has built capability through the workforce that it continues to assemble and through lessons learned from the frontlines of DODIN cyber activity. Before the creation of this operational headquarters, a Service responding to an attack on its network would deal with the problem more or less decisively, but in isolation, thus leaving other Services and agencies potentially vulnerable to the same attack. Information regarding the attack might be shared with other interagency partners, but there was no joint mechanism to alert the rest of the vast force of DOD network operators to a new threat. JFHQ-DODIN assumed this synchronizing responsibility.

People are the ultimate enabler of the joint cyber force, but they require tools and capabilities. The Service cyber components are building new capabilities for use in cyberspace, and sharing these with the joint force. One of the most critical components to maintaining our military's warfighting advantage is the ability to develop and rapidly field innovative cyber capabilities. The Air Force has established seven cyber weapons systems to ensure the cyber capabilities being presented to the joint community are properly organized, trained, and equipped to meet the demands of an increasingly contested domain. The Air Force Life Cycle Management Center has strived to streamline the ability to provide solutions to support cyber missions through its "Rapid Cyber Acquisition" and "Real Time Operations and Innovation" initiatives. These efforts have resulted in the fielding of capabilities that have thwarted adversary exploitation of user authentication certificates and the unauthorized release of personally identifiable information, while also helping to block sophisticated intrusion attempts. Many of these cyber solutions were developed and fielded in weeks or months and we need faster results.

ARCYBER is pursuing cyber analytics capabilities to gather unprecedented quantities of data across cyberspace, providing a clearer picture of Army networks, systems, and data. Coupled with architecture modernization, this effort is critical to protect the future force and its ability to fight and win. The director of DISA, who is dual-hatted as the commander of JFHQ-DODIN, hopes to leverage technology to improve operations and influence traditional warfighting concepts such as deception, maneuver, battlespace, passage of lines, and defense-in-depth to improve the overall defensive posture of the DODIN. One example is Software Defined Networks, which can provide the ability to create a network, and when necessary, kill a network and move the warfighters and assets to another network in a virtualized space, thus remaining resilient and agile in the protection and defense of our systems while ensuring the mission continues unhindered.

In the Fight Now

In cyberspace we are already in real or imminent contact with adversaries. Every day, opponents attempt to access the DODIN to establish persistent presences in the critical networks we rely on for mission success. The level of adversary activity varies greatly and is influenced by multiple factors, including geopolitical events and even significant anniversaries. DOD systems mitigate an average of two million "intrusion attempts" each month, not counting the billions of malicious emails that DOD receives annually, 85 percent of which are blocked by a filter or defensive capability.

Lieutenant General Alan Lynn, USA, commander of JFHQ-DODIN and director of DISA, highlighted the pace of operations for JFHQ-DODIN last fall: "[JFHQ-DODIN recently] stood up, so you would think we are just building it as we are flying it—and it would be kind of a slow process." But such a thought would be mistaken, General Lynn explained. JFHQ-DODIN had no time to grow and learn before being thrown into the fight: "We are absolutely in the fight now." The general cited seven named cyber operations that JFHQ-DODIN has been involved in since reaching initial operational capability in early 2015. Some were deployed operations, while others were launched from the component's Fort Meade headquarters. The first operation began only days after JFHQ-DODIN's inception, and required a deployed CPT to locate and mitigate the threat.

We can expect that pace to intensify in the years ahead. The JFHQ-DODIN experience typifies the pace of cyberspace operations for all USCYBERCOM components. Our current cyber quandary is not some passing phase—it is the new normal for the joint force. Indeed, it is the new normal for every government and military around the world. That is why USCYBERCOM published its vision last year. We have an opportunity to use our experience, our technology, and the investments we have already made in training and infrastructure to stay ahead of would-be adversaries that have arrived in cyberspace comparatively recently. We must also ensure that our ability to generate assured command and control continues even in a degraded environment—even as we also focus on developing mission capabilities to provide the joint force with more options within the cyber arena. USCYBERCOM, looking Beyond the Build, has a vision to do just that. **JFQ**

Marine with Bravo Company, 1st Battalion, 7th Marine Regiment, prepares to board CH-53E Super Stallion helicopter for mission in Helmand Province to disrupt enemy insurgents while retrograde operations take place nearby, August 16, 2014 (U.S. Marine Corps/Joseph Scanlan)

Joint Force Observations of Retrograde Operations from Afghanistan

By Aundre F. Piggee, Matthew Bain, David Carlson, Richard Lliteras, Christopher Ostrander, Lawrence Pleis, Willie Rios, and Dennis Wilson

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Numerous articles have highlighted the monumental and complex efforts by U.S. and coalition forces to draw down the force, close operating bases, and remove the equipment and supplies that accumulated throughout Afghanistan during 13 years of combat operations. The signing of the bilateral security

agreement (BSA) late in 2014 with the Afghanistan government had a profound impact on our ability to close the retrograde mission by December 2014. Prior to the signing of the agreement, there was a legitimate concern that we would have to rapidly accelerate throughput across all available means and modes if conditions in the BSA were unfavorable to our forces and coalition partners. Anticipating this situation, the responsible force drawdown, materiel retrograde, and base closure and transfer missions were collectively the top priority for the commander of U.S. Central Command (USCENTCOM) throughout 2014.

The commander directed the *responsible retrograde* of all U.S. equipment and materiel from Afghanistan in support of President Barack Obama's guidance on the long-term U.S. force-manning levels to support the enduring North Atlantic Treaty Organization (NATO) mission and the Service reset strategies. Responsible retrograde was collectively characterized by:

- property accountability
- positive turnover from deployed forces back to Service control
- disposition of hazardous material and unexploded ordnance
- intent to clean up and close bases in better condition than found
- transition of bases at a pace that the Afghan government could manage
- optimization of the most efficient routes and modes of transportation considering all the variables
- conduct of retrograde in a manner that would not imply abandonment of the Afghan National Security Forces or jeopardize the conclusion of the BSA
- seamless sustainment of the International Security Assistance Force (ISAF) commander's ongoing operational campaign.

From 2012 until December 2014, the Joint Logistics Enterprise (JLEnt) ensured sustainment was provided to our forces in Afghanistan. The JLEnt simultaneously planned and executed a massive retrograde of U.S. combat and combat-enabling equipment and supported the materiel retrograde and force redeployments of many of our coalition partners. The following observations, which are by no means all inclusive, are an attempt to highlight those efforts from joint force and combatant command perspectives.

Unity of Effort

Regarding retrograde objectives and campaign support, the USCENTCOM vision was one and the same with that of the ISAF commander. It was our responsibility at the combatant command level to pull the JLEnt together to focus support at the tactical level, to include stewardship of resources, while maintaining an operational-level focus to meet the guidance of the President and Secretary of Defense. The USCENTCOM commander was provided weekly updates on the status of retrograde and redeployment operations. During these updates, the commander provided guidance on the retrograde mission, priorities, and critical tasks to sustain the ISAF commander's campaign plan.

Extensive and frequent interaction with our national logistics providers and Service logistics directors was the greatest factor that contributed to retrograde mission success. Early on, we acknowledged the criticality of complete integration of efforts across the JLEnt. The collaborative effort and anticipatory planning by our national partners throughout the entire drawdown phase kept adjustments of industrial magnitude transparent to the operating forces and on track with the overall drawdown plan. Close cooperation and constant contact between USCENTCOM, ISAF, U.S. Forces–Afghanistan (USFOR-A), U.S. Transportation Command (USTRANSCOM), Defense Logistics Agency (DLA), Army Materiel Command, and senior Service logistics directors were critical to ensuring the force was fully supported while conducting simultaneous large-scale retrograde operations.

The USCENTCOM staff facilitated daily stakeholder interaction to maintain the free flow of information and focus on the commanders' goals. A monthly general/flag officer–level meeting also provided a venue to expedite decisions and synchronize efforts. Additionally, we were fortunate to have liaison officers from each of the national providers and several key coalition partners embedded into our staff.

Leveraging Lessons Learned with the Retrograde Plan

The JLEnt implemented literally hundreds of process improvements over more than a decade of combat operations in Afghanistan and Iraq, setting the stage for success. The geographical location of Afghanistan and the conditions in-country did require a unique approach that was far more complex than retrograde operations in Iraq. In Afghanistan, we had specific guidance on the timing to complete retrograde operations, and we dealt with a far different situation than moving equipment and materiel to an intermediate staging base in Kuwait for further disposition. Everything in Afghanistan had to either transit a border nation by ground transport or be moved via strategic airlift.

Nonetheless, when USCENTCOM received Joint Staff guidance to accelerate the drawdown of forces and commence large-scale materiel retrograde and base closures, we were well postured to execute. We used a series of rehearsal of concept (ROC) drills for each stage of the drawdown to validate enterprise ability and capacity to accelerate throughput as directed. One ROC drill was specifically conducted to address, coordinate, and communicate the actions necessary from across the enterprise to meet compressed timelines, as well as to test our ability to deal with several other potential limitations and restrictions. These ROC drills proved critical to preparing the joint and coalition forces for a rapid, responsible drawdown and for mission transition with NATO and the Afghan security forces.

Simultaneous Sustainment of the ISAF Campaign Plan

By early 2014, mission requirements in Afghanistan were decreasing, yet

planning efforts to sustain the force increased. It was crucial for the JLEnt to ensure that the flow of support to the warfighter did not decrease. Adjustments were made to the assignment and use of transportation assets to maximize available resources to support both retrograde and ongoing operations. This plan worked effectively, as troops have received support for all classes of supplies.

Balancing the closure of critical supply nodes (supply activities, munitions storage sites, subsistence supply points, and bulk fuel points) to ensure we kept up with the closure of forward operating bases became a daily coordination function across all commands. The drawdown of subsistence, fuel, and munitions in Afghanistan occurred through the following actions:

- Weekly meetings were conducted with ISAF Joint Command and USFOR-A to discuss the force reduction and ensure that these commodities were decreased commensurately.
- Bulk fuel consumption factors and stockage objectives were reviewed monthly and reduced as appropriate to meet mission requirements while decreasing stockage levels across Afghanistan.
- USCENTCOM, in coordination with DLA and USCENTCOM Joint Theater Support Contracting Command, worked closely with contracted vendors to ensure that the strategic supply chain was reduced in conjunction with the decreasing force footprint.
- Supplies were redistributed across USCENTCOM's area of responsibility (AOR) to support other mission requirements.
- Munitions were retrograded to the theater storage area in Kuwait to be used in support of future mission requirements.

Establishing and Maintaining Distribution Options

Movement in Afghanistan and Pakistan has always been subject to environmental, political, and security conditions. Distribution operations are challenging, considering the ongoing Afghan combat mission, a landlocked operations area, reliance on regional neighbors with varying degrees of access, cooperation, and corruption, and a simultaneous reduction of coalition forces and contractors. From a distribution perspective, risk to the ISAF campaign while meeting retrograde objectives was mitigated by establishing and maintaining robust and redundant lines of communications, a series of multimodal locations and intermediate staging bases throughout the USCENTCOM and U.S. European Command AORs, and robust global and intratheater transportation plans.

The distribution network was effective and flexible in meeting all requirements as U.S. forces reduced posture in Afghanistan. The system was flexible enough to change routings as required, increase use of the multimodal modes and nodes, and adjust channel flights to increase cargo velocity as we executed the drawdown. USCENTCOM materiel reduction goals were consistently met. No military organizations exist worldwide that can plan, design, implement, and execute this complex system as effectively or efficiently as U.S. Air Forces Central (USAFCENT), U.S. Army Central (USARCENT), and USTRANSCOM with its major subordinate commands: Air Mobility Command, Military Sealift Command, and Surface Deployment and Distribution Command.

We also gained increased flexibility through partnering with commercial partners via a commercial multimodal contract that allowed the airlift system to increase the overall capacity available to the theater. Use of the multimodals continued to increase during the drawdown, especially with the increased permissions for throughput at Kuwait. The addition of Kuwait as an intermediate staging base (ISB) and multimodal location allowed for expedited movement of cargo out of Afghanistan, with final processing and cleaning of the cargo occurring in Kuwait. The Kuwait ISB was another of many significant supporting efforts of U.S. forces in the region by the government of Kuwait.

Manas Transit Center in Kyrgyzstan was used as a passenger transit point for transfer between commercial airlift and organic transport aircraft for movement into and out of Afghanistan. Loss of this capability in July 2014 had a negligible effect thanks to a nearly seamless transition of the transit hub to Mihail Kogalniceanu Air Base in Romania and of tanker mission relocation to split locations in Afghanistan and the Arabian Gulf region.

The ground route through Pakistan (Pakistan ground lines of communication, or PAK GLOC) was the most economical means out of Afghanistan and was critical to the U.S.-Pakistan relationship. It was important to maintain, and thus we always pushed to maximize the use of this route. However, due to the ambiguity of the signing of the BSA, it required us to keep equipment in Afghanistan longer than we would have liked. This in turn made it necessary to use our multimodal sites more than we preferred (due to higher cost) to meet the commander's timeline. The security situation on the ground in the vicinity of the Torkham Gate border crossing point into Pakistan, as well as the unpredictable situation (rioting, new transit fees, delayed border crossing permissions, disruption along the PAK GLOC, and so forth) that followed a number of leadership changes in Pakistan, also drove us to push retrograde across a series of alternate routes.

The Northern Distribution Network (NDN) that comprised several routes through the Central Asian republics was another effective component in our distribution network for moving noncritical, nonsensitive cargo into and out of Afghanistan. We established monthly shipping guidance minimums (25–50 containers) for the varying routes to keep them viable, exercise the agreements, and maintain good diplomatic relationships with the countries that hosted portions of the NDN. Use of the network allowed USCENTCOM to continue to build relationships with the Central Asian states that will lead to continued partnerships in varying ways (exercises, counterterrorism interoperability, counternarcotics cooperation, and

Aerial porters from 19th Movement Control Team prep shipping container for 774th Expeditionary Airlift Squadron C-130 Hercules cargo plane at Forward Operating Base Salerno, Khost Province, Afghanistan, September 22, 2013 (U.S. Air Force/Ben Bloker)

so forth). Overall use of the NDN has slowed significantly, and we no longer have published shipping minimums due to the limited number of cargo shipment requests. In addition to U.S. use of the NDN for both retrograde and inbound sustainment cargo shipment, several coalition partners retrograded to Europe exclusively across the NDN. NATO continues to use it to support its continuing Resolute Support mission in Afghanistan. We plan to maintain NDN permissions for continued flexibility in the region. Although there is not currently a robust requirement, continued development of the modern Silk Road is an important key to Afghanistan's economic future and regional connectivity. During the last 90 days (September–December 2014) of Operation *Drumbeat*, 42 percent of outbound retrograde cargo was moved via multimodal routes; 29 percent went via direct air; 24 percent moved along the PAK GLOC; and 5 percent moved via the NDN.

Dedicated Enablers

The contribution of our USCENTCOM Deployment and Distribution Operations Center postured forward in Kuwait was a critical enabler throughout retrograde operations. The center bridges the tactical and strategic levels and is the USCENTCOM hands-on organization that validates our Service component, joint task force, coalition partner, and interagency movement requirements, and then coordinates support for those requirements via the various providers. The center also troubleshoots emerging issues and ensures that stakeholders with equities are kept informed before those issues become significant problems.

Assigning the Army's 1st Theater Sustainment Command forward was critical, as it orchestrated the flow and tempo of logistics based on USCENTCOM priorities. The command was the perfect fit for this task; its primary mission is to provide single sustainment mission command to Army, joint, and multinational forces in support of USCENTCOM unified ground operations, which enables the combatant commander's ability to achieve missions.

The USCENTCOM Materiel Response Element (CMRE) was established as a functional task force to provide a dedicated headquarters focused exclusively on the retrograde of supplies and equipment from the theater. In the past, the retrograde effort was an additional duty for units that were forced to juggle several missions. The simultaneous execution of a number of missions divided attention and resources, resulting in less than optimal attention to retrograde. The CMRE construct proved that a

singular focus facilitated the effective and efficient retrograde of materiel. Materiel accountability with Service headquarters increased substantially with the support of the CMRE, and the retrograde mission concluded on time with no negative impact on the ISAF campaign. The CMRE also played a critical role in the base transition process. Engineers assigned to the CMRE completed the bulk of the base descoping and deconstruction efforts to enable on-time base transitions.

USFOR-A's creation of the Operational Contract Support Drawdown Cell in August 2012 greatly enabled the responsible management of contractor personnel and equipment in the Combined Joint Operations Area–Afghanistan. Its mission was to manage the drawdown of contracts, the contractor workforce, and associated equipment, and it enabled USFOR-A leadership to review and validate requirements and weigh the benefits versus the impacts of retaining contracted support. The efforts of the drawdown cell were extremely successful and will improve our ability to effectively and efficiently employ contracted support in future large-scale contingencies.

DLA's ability to rapidly establish expeditionary worldwide disposition services on an industrial level was remarkable and proved a major enabler for the Services to divest of equipment deemed not cost-efficient to transport out of Afghanistan and back to home stations. Historically, DLA provided a suite of disposition services (usable goods sales or scrap metal services) for at least 30 percent of the equipment designated for divestiture. The remaining materiel would be inducted into the Foreign Excess Personnel Property Program, which supports the transfer of serviceable materiel to a qualified foreign government agency. DLA initiative and disposition efforts in the AOR yielded millions of dollars through transportation cost avoidance by processing as much materiel on site as possible.

The Joint Operational Planning and Execution System (JOPES), primarily used for deployment and redeployment, was the system of record used for retrograde. Directing JOPES use for retrograde was a paradigm shift that took the enterprise some time to adjust to because we had never used it for the entire joint force for such operations. Implementation of JOPES across the joint force was challenging and largely facilitated with support from USTRANSCOM. Through the use of JOPES, USTRANSCOM was able to achieve a holistic view of all equipment requiring transportation. We were able to use already established theater logistics hubs in Kuwait as an ISB, which enabled us to reduce cost by shortening the air leg prior to shipping the cargo for redeployment.

Syncing Retrograde

Base transitions were a key component of and intrinsically tied to the retrograde effort. During the July 2012–April 2014 time frame, approximately 320 U.S. and coalition bases closed or were transferred to the Afghan government. The engineer community did a world-class job of planning and executing the massive base closure and transition mission with all of the stakeholders. This was particularly commendable considering the limited ability of the Afghan security forces and other Afghan governmental organizations to accept the number of locations we had to turn over each month to remain on our directed timeline.

Closing and transferring bases was an important forcing function to get people and equipment out of the country. Throughout the process, we had to contend with force manning level (FML) management and keeping enough engineer assets in-country. As the engineer FML decreased in 2014, we relied on over-the-horizon engineer support from USARCENT and USAFCENT to assist with base descoping and deconstruction requirements. In addition, we relied on contract solutions such as a multiple award task order contract to complete base descoping and deconstruction efforts. With the limited FML we now have in Afghanistan, we rely almost exclusively on the task order contract and other contract efforts to descope and deconstruct bases to enable base transitions.

We included base closures and transitions in every facet of our overall redeployment and retrograde planning, to include a series of ROC drills. This became especially critical toward the end of our transition effort, when several large bases were closed or transitioned.

To help minimize the quantity of supplies that needed to be disposed of, USFOR-A developed a five-step process:

- consume: use stocks in place to the maximum extent possible
- redistribute: send to another unit that needs the materiel
- transfer or donate: using various legal authorities, provide the materiel to coalition partners and the Afghan government
- retrograde: ship the materiel to military units that need it or to depots for future use
- dispose: send to DLA disposition services, which sells nonmilitary materiel as usable goods or cuts military items into pieces and sells it as scrap.

There were several challenging issues related to base transitions. First was the balance of maintaining operations and combat capability out of a base as long as possible and yet still transitioning it on time. A related issue was the balance of providing security and force protection as long as possible up until the date of the base transition. We were able to work through these balances successfully.

Second was the balance of transferring too many bases and too much infrastructure to the Afghan government. Under President Hamid Karzai, the government wanted all bases and all infrastructure transferred to them. Over time, we realized that the government could not afford to maintain everything we were giving them, and they were becoming overburdened by infrastructure. To address this, the Combined Security Transition Command Afghanistan is assisting the government to develop an Afghanistan divestment strategy through which they will divest the excess bases and infrastructure they accumulated from us over the years. This divestment strategy is important to ensure that former

U.S. and coalition bases and infrastructure are properly divested of and do not fall into the hands of our enemies.

A third issue related to base transitions has to deal with how much construction and buildup we undertake at our contingency basing locations. Experience has shown USCENTCOM that there needs to be a balance between building facilities similar to what we would have in the United States versus facilities that are adequate to last a few years during a contingency operation. In addition, we have realized that facilities and infrastructure turned over to the Afghans must be sustained and operated by them. In some cases, it may be more appropriate to build a facility that the Afghans will be able to afford and have the knowledge to operate and maintain in the long term.

Aside from the sheer number of sites that required closing or transition (to include all the associated subfunctions such as environmental cleanup, ordnance sweeps, and the like), the responsible reduction of contractors and equipment also proved a base closure challenge. Although planning efforts called for the reduction of contracted support, frequent changes to the base closure/transfer timelines led contractors to evaluate the risks associated with reducing personnel and equipment too soon. Many contractors opted to retain personnel and equipment until just before the scheduled closure to minimize risk. In many instances, this reluctance to reduce personnel and equipment actually benefited USFOR-A. Due to the prohibitive cost of retrograding equipment used by contractors, USFOR-A, in conjunction with contractors, determined that most equipment would be disposed of in Afghanistan. DLA planned accordingly and ensured that sufficient capacity was available to perform this task. In the end, the retention of equipment did not delay base closures or transfers.

Key Takeaways

As with any large operation, there were many lessons learned throughout retrograde operations in Afghanistan that will serve the joint force well in the future. The following areas were particularly significant at the combatant command level.

U.S. Army CH-47 Chinook helicopter operated by Soldiers with Texas and Oklahoma Army National Guard units carries sling-loaded shipping container during retrograde operations and base closures in Wardak Province, Afghanistan, October 26, 2013 (U.S. Army/Peter Smedberg)

Theater posture is critical to future success. We have to ensure that the right sustainment is in the right place to support operations. A failure to use joint logistics processes to correctly set the theater to meet emerging requirements will create unnecessary stress on U.S. Servicemembers and ultimately will jeopardize our ability to meet combatant commander requirements.

An area related to redeployment and retrograde that illustrates the success we achieved involved the *amount of commodities retrograded and returned to the supply enterprise system.* Our ability to analyze and plan a deliberate drawdown ensured that critical sustainment stocks were returned to the continental United States; this not only positively impacts home-station readiness, but also achieves cost avoidance to the Services, and ultimately to DOD, by using already purchased commodities.

An implication that senior logistics leaders should always consider when entering an operation is our *exit strategy*; it is never too early to start planning and implementing redeployment and retrograde processes. Our operations over the past 2 to 3 years have focused on redeployment and retrograde operations, and this has consumed a majority of our efforts as we right-size our force structure.

Property accountability throughout an operation cannot be overemphasized, particularly when the determination is made to establish equipment pools in the AOR and rotate units into that equipment over a period of several years. Accounting for everything after the fact is an excruciating and inefficient process.

Coalition partners each bring unique capabilities to the table, and it is in our best interest to always consider them and be as inclusive as possible. There are many examples of coalition leadership that were instrumental to the success of retrograde operations across each sector in Afghanistan, along the NDN, in shaping support access and capabilities en route between the AOR and home stations, and in developing flexible planning options with ISAF, USFOR-A, USCENTCOM, and national provider staffs to keep things on track.

Treating retrograde as an operation and not an administrative or logistics-only function comes to mind. Another would be the USCENTCOM and ISAF commanders' daily emphasis placed on the logistics and sustainment community.

Marine Corps and Royal Air Force helicopters fly in formation after departing Camp Bastion, Afghanistan, October 27, 2014 (U.S. Marine Corps/John Jackson)

Those two commanders put our efforts on par with the Soldier and Marine mission on the ground. It was clear to all levels of leadership that we had to do both at the same time and do them well. Contractor accountability and the many lessons learned that were applied throughout Operation *Enduring Freedom* is an area that continues to mature. And although USCENTCOM had the lead for operations in Afghanistan, the entire joint logistics enterprise collectively demonstrated that it is postured to support globally integrated operations, along compressed timelines, with minimal risk to our commanders, the force, or the mission, regardless of how large or how rapidly the situation presents itself. This is a tribute to every stakeholder across DOD and the interagency community that supported the operation. Success was a product of the entire joint logistics enterprise and required the steadfast commitment of every member of the team. Throughout the entire retrograde operation, everyone remained "all in!"

Close partnership among all stakeholders—the combatant command, the Services, and our national partners with the joint task force command in the AOR—and keeping the enterprise focus on the priorities of the joint force commander led to success in Afghanistan and will remain critical in the future. Unity of effort at the general and flag officer level among all stakeholders permeated our organizations and cannot be overemphasized. In that regard, the same goes for building and maintaining similar strong partnerships with our coalition and host nation counterparts throughout the AOR. These relationships also set the logistics enterprise up for rapid contingency responses in the future, regardless of where they occur.

U.S. Central Command and U.S. Forces–Afghanistan, with the support of U.S. Transportation Command, the Defense Logistics Agency, the Services, and all of our logistics partners, successfully accomplished a significant task in retrograding materiel and equipment from Afghanistan. That country's geography and climate, combined with the security environment and limited transportation infrastructure, presented one of the greatest logistics challenges encountered in the modern era of warfare. Never before has so much been moved, over so long a time, by so many methods (air, land, and sea). Our collective joint logistics enterprise moved people, equipment, and supplies over oceans and continents, numerous landlocked countries, into and out of one of the most remote regions in the world. The recently completed Operation *Drumbeat*, the last milestone of Operation *Enduring Freedom*, was not only successful in setting conditions for the North Atlantic Treaty Organization's enduring Resolute Support mission, but also has been critical to the Service reset strategies, U.S. Central Command's theater reposturing, and the global reposture of the Department of Defense. **JFQ**

Special operations forces are extracted from mountain pinnacle in Zabul Province, Afghanistan, after executing air-assault mission to disrupt insurgent communications (U.S. Army/Aubree Clute)

Unconventional Warfare in the Gray Zone

By Joseph L. Votel, Charles T. Cleveland, Charles T. Connett, and Will Irwin

In the months immediately following the terrorist attacks on the World Trade Center and Pentagon in the autumn of 2001, a small special operations forces (SOF) element and interagency team, supported by carrier- and land-based airstrikes, brought down the illegitimate Taliban government in Afghanistan that had been providing sanctuary for al Qaeda. This strikingly successful unconventional warfare (UW) operation was carried out with a U.S. "boots on the ground" presence of roughly 350 SOF and 110 interagency operatives working alongside an indigenous force of some 15,000 Afghan irregulars.[1] The Taliban regime fell within a matter of weeks. Many factors contributed to this extraordinary accomplishment, but its success clearly underscores the potential and viability of this form of warfare.

What followed this remarkably effective operation was more than a decade of challenging and costly large-scale irregular warfare campaigns in Afghanistan and Iraq employing hundreds of thousands

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U.S. Air Force CV-22 Osprey's primary mission in 8th Special Operations Squadron is insertion, extraction, and resupply of unconventional warfare forces (U.S. Air Force/Jeremy T. Lock)

of U.S. and coalition troops. Now, as Operations *Enduring Freedom* and *Iraqi Freedom* have come to an end, the defense budget is shrinking, the Armed Forces are drawing down in strength, and support for further large-scale deployment of troops has ebbed. Our nation is entering a period where threats and our response to those threats will take place in a segment of the conflict continuum that some are calling the "Gray Zone,"[2] and SOF are the preeminent force of choice in such conditions.

The Gray Zone is characterized by intense political, economic, informational, and military competition more fervent in nature than normal steady-state diplomacy, yet short of conventional war. It is hardly new, however. The Cold War was a 45-year-long Gray Zone struggle in which the West succeeded in checking the spread of communism and ultimately witnessed the dissolution of the Soviet Union. To avoid superpower confrontations that might escalate to all-out nuclear war, the Cold War was largely a proxy war, with the United States and Soviet Union backing various state or nonstate actors in small regional conflicts and executing discrete superpower intervention and counter-intervention around the globe. Even the Korean and Vietnam conflicts were fought under political constraints that made complete U.S. or allied victory virtually impossible for fear of escalation.

After more than a decade of intense large-scale counterinsurgency and counterterrorism campaigning, the U.S. capability to conduct Gray Zone operations—small-footprint, low-visibility operations often of a covert or clandestine nature—may have atrophied. In the words of one writer, the United States must recognize that "the space between war and peace is not an empty one"[3] that we can afford to vacate. Because most of our current adversaries choose to engage us in an asymmetrical manner, this represents an area where "America's enemies and adversaries prefer to operate."[4]

Nations such as Russia, China, and Iran have demonstrated a finely tuned risk calculus. Russia belligerently works to expand its sphere of influence and control into former Soviet or Warsaw Pact territory to the greatest degree possible without triggering a North Atlantic Treaty Organization Article 5 response. China knows that its assertive actions aimed at expanding its sovereignty in the South China Sea fall short of eliciting a belligerent U.S. or allied response. Iran has displayed an impressive degree of sophistication in its ability to employ an array of proxies against U.S. and Western interests.

While "Gray Zone" refers to a space in the peace-conflict continuum, the methods for engaging our adversaries in that environment have much in common with the political warfare that was predominant during the Cold War years. Political warfare is played out in that space between diplomacy and open warfare, where traditional statecraft is inadequate or ineffective and large-scale conventional military options are not suitable or are deemed inappropriate for a variety of reasons. Political warfare is a population-centric engagement that seeks to influence, to persuade, even to co-opt. One of its staunchest proponents, George Kennan, described it as "the employment of all the means at a nation's command, short of war, to achieve its national objectives," including overt measures such as white propaganda, political alliances, and economic programs, to "such covert operations as clandestine support of 'friendly' foreign elements, 'black' psychological warfare, and even encouragement of underground resistance in hostile states."[5]

Organized political warfare served as the basis for U.S. foreign policy during the early Cold War years and it was later revived during the Reagan administration. But, as Max Boot of the Council on Foreign Relations observed, it has become a lost art and one that he and others believe needs to be rediscovered and mastered.[6] SOF are optimized for providing the preeminent military contribution to a national political warfare capability because of their inherent proficiency in low-visibility, small-footprint, and politically sensitive operations. SOF provide national decisionmakers "strategic options for protecting and advancing U.S. national interests without committing major combat forces to costly, long-term contingency operations."[7]

Human Domain-Centric Core Tasks for SOF

SOF provide several options for operating in the political warfare realm, especially those core tasks that are grouped under the term *special warfare*. Foreign internal defense (FID) operations are conducted to support a friendly foreign

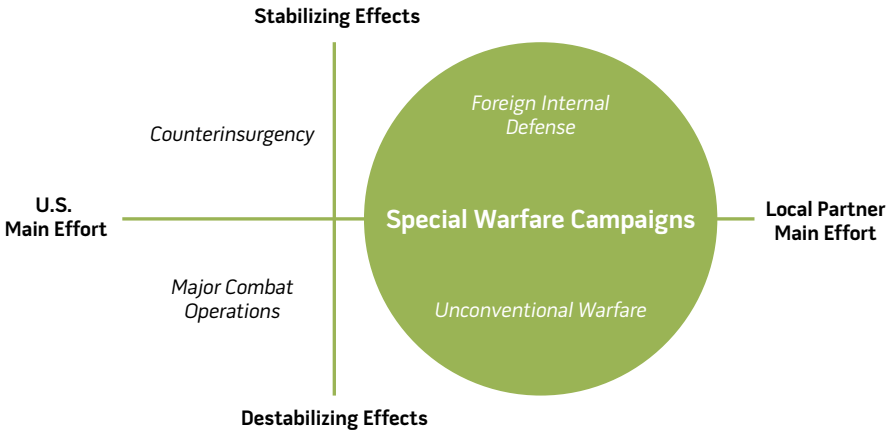
government in its efforts to defeat an internal threat. In terms of strategic application, UW represents the opposite approach, where the U.S. Government supports a resistance movement or insurgency against an occupying power or adversary government.

Both of these special warfare tasks rely heavily on SOF ability to build trust and confidence with our indigenous partners—host nation military and paramilitary forces in the case of FID, irregular resistance elements in the case of UW—to generate mass through indigenous forces, thus eliminating the need for a large U.S. force presence (see figure 1). It is this indigenous mass that helps minimize strategic risk during Gray Zone operations: "Special Warfare campaigns stabilize or destabilize a regime by operating 'through and with' local state or nonstate partners, rather than through unilateral U.S. action."[8] As described in a recent RAND study, discrete and usually multi-year special warfare campaigns are characterized by six central features:

- Their goal is stabilizing or destabilizing the targeted regime.
- Local partners provide the main effort.
- U.S. forces maintain a small (or no) footprint in the country.
- They are typically of long duration and may require extensive preparatory work better measured in months (or years) than days.
- They require intensive interagency cooperation; Department of Defense (DOD) elements may be subordinate to the Department of State or the Central Intelligence Agency.
- They employ "political warfare" methods to mobilize, neutralize, or integrate individuals or groups from the tactical to strategic levels.[9]

Many examples exist of successful long-duration, low-visibility U.S. SOF-centric FID operations in Latin America, Asia, and Africa. From 1980 through 1991, U.S. support to the government of El Salvador fighting an insurgency in that country included an advisory force that never exceeded 55 personnel. The conflict ended with a favorable negotiated settlement. Similar successes against lower level insurgencies took place in neighboring Honduras and Guatemala. More recently, U.S. SOF have played a central role in effective long-term FID efforts conducted in support of the governments of Colombia and the Philippines.

Figure 1.



Less well known and understood by those outside of SOF is the core task of unconventional warfare.

Doctrine

This year marks the release of the first joint U.S. doctrine publication for the planning, execution, and assessment of UW operations.[10] The United States has been producing UW doctrine since the first series of field manuals published from 1943 to 1944 by the wartime Office of Strategic Services (OSS). However, for the past seven decades, that doctrine has been produced by the U.S. Army. Despite the longstanding recognition in Army doctrine that UW is inherently joint and interagency in character, single-Service doctrine is at a disadvantage in reaching joint and interagency audiences. Therefore, a joint UW publication was needed.

Army Special Forces remain the only element in the U.S. Armed Forces organized, trained, and equipped specifically for UW. However, while Special Forces continue to play a central role in the mission, Joint Publication 3-05.1, *Unconventional Warfare*, recognizes the roles of other SOF, as well as important supporting functions of conventional forces. It also provides insight into the importance of interagency planning, coordination, and collaboration; other U.S. Government departments and agencies are not only frequently involved, but they are also often in the lead.

Unconventional warfare is fundamentally an indirect application of U.S. power, one that leverages foreign population groups to maintain or advance U.S. interests. It is a highly discretionary form of warfare that is most often conducted clandestinely, and because it is also typically conducted covertly, at least initially, it nearly always has a strong interagency element. It can be subtle or it can be aggressive. The U.S.-indigenous irregular benefactor-proxy relationship, if successful, achieves mutually beneficial objectives (although there can also be divergent interests between benefactor and proxy).

Advocates of UW first recognize that, among a population of self-determination seekers, human interest in liberty trumps loyalty to a self-serving dictatorship, that those who aspire to freedom can succeed in deposing corrupt or authoritarian rulers, and that unfortunate population groups can and often do seek alternatives to a life of fear, oppression, and injustice. Second, advocates believe that there is a valid role for the U.S. Government in encouraging and empowering these freedom seekers when doing so helps to secure U.S. national security interests.

Historically, the U.S. military has conducted UW primarily in wartime to assist indigenous resistance movements in defeating or causing the withdrawal of a foreign occupation force. In peacetime,

UW can take the form of covert paramilitary operations conducted by other agencies of the U.S. Government or clandestine military operations. Through diplomacy, development, and other means, other government departments and agencies, such as the Department of State and U.S. Agency for International Development (USAID), can help shape the environment or provide support to resistance in other ways. When Congress passed the Boland Amendment during the 1980s, halting all but humanitarian U.S. aid to the Contras, USAID became the leading provider of support to the Nicaraguan resistance.

If a resistance movement or insurgency exists within a country whose government threatens U.S. security interests, the movement asks for assistance from the United States, and the group's operational methods and behavior are deemed to be acceptable by the U.S. Government, the President of the United States might approve initiation of UW operations. The target government could be a state sponsor of terrorism or a proliferator of weapons of mass destruction technology. It might be a government engaged in ethnic cleansing or other crimes against humanity, or a state that willingly allows transit or provides sanctuary or other forms of support to terrorists. Or it could be a state that actively and aggressively, even belligerently, takes action to expand its territorial sovereignty with the result of undermining regional stability.

Under certain circumstances, the prudent employment of coercive force, by empowering an indigenous opposition element, can force a target government to do something it might not otherwise be inclined to do. Under other conditions, the goal could be simply to disrupt certain operations or activities of the hostile government, such as interfering with proliferation actions, safeguarding a population group targeted for genocide by the incumbent regime, or imposing extraordinary and unexpected difficulties in consolidating the occupation of a country that has been invaded, thus altering the adversary state's cost and risk calculus.

This was the case during the prolonged U.S. UW campaign in support of Tibetan resistance fighters against Chinese occupiers from 1957 to 1969, and again with the UW operation in support of the Mujahideen in Afghanistan in their struggle against the Soviet 40th Army after its invasion and occupation of that country. During the second Reagan administration, however, the objective of the Afghanistan mission changed from a cost-imposing strategy to forcing the withdrawal of Soviet forces from the country. The success of that mission had enormous political and historical ramifications, beginning a chain of events that eventually resulted in the collapse of the Soviet Union and an end to the Cold War.

In some cases, UW can be used as a regime change mechanism, enabling an indigenous resistance or insurgent group to overthrow the existing government. In a wartime supporting role, UW operations can be a shaping effort in support of larger, conventional force operations, such as the very successful UW operations executed by U.S. SOF with Kurdish Peshmerga forces in northern Iraq during the 2003 invasion of that country. Alternatively, it could be the main effort in a military campaign, as was the UW operation that brought down the Afghan Taliban regime in 2001.

Unconventional warfare has often been the option of choice in situations where the President (or a theater commander in wartime) wishes to initiate operations much sooner than could be accomplished with the mobilization, preparation, and deployment of conventional forces. Such was the case with the operation by the 5th Special Forces Group (Airborne) and Air Force Special Tactics operators in Afghanistan in 2001.

A requirement might exist for operations in areas not easily accessible to conventional forces or that lend themselves to UW in an economy of force role in secondary theaters of war. Circumstances such as this resulted in several UW operations during World War II, including those in Yugoslavia, Albania, Greece, northern Italy, Norway, Burma, Thailand, Indochina, and China. In conducting such operations, U.S. forces will typically support three main elements of the resistance movement or insurgency—the underground, auxiliary, and guerrilla force. The underground is a cellular-based organization that operates in urban or other areas usually inaccessible to the guerrilla force. Composed of part-time volunteers, the auxiliary component clandestinely provides a wide range of support to both the underground and guerrillas. Probably the most familiar element is the guerrilla force, an organization of irregular combatants who comprise the armed or overt military component of the resistance.

Often the resistance includes a shadow government within the country capable of performing government functions on behalf of the movement. There might also be a government-in-exile in another country—often as a result of being displaced by an invading and occupying power—which remains the internationally recognized government of the occupied state. Nearly all the countries of Western Europe overrun and occupied by German forces in World War II established governments-in-exile in London.

Methods used by the resistance in meeting its objectives could include subversive activities such as mass protests, work slowdowns or stoppages, boycotts, infiltration of government offices, and the formation of front groups. These activities are primarily aimed at undermining the military, economic, psychological, or political strength or morale of the government or occupation authority.

Sabotage can be a means of physically damaging the government's military or industrial production facilities, economic resources, or other targets. During World War II, sabotage targets for Allied SOF included road and rail lines of communication, hydroelectric power production and distribution facilities, telecommunications facilities, canal locks, radar sites, port facilities, factories engaged in the manufacture of war materiel, and military supply dumps or other targets.

Guerrilla warfare operations are carried out against military or other security forces to reduce their effectiveness and negatively impact the enemy's morale.

Jedburghs get instructions from briefing officer in London, 1944 (U.S. Office of Strategic Services)

Allied-supported World War II guerrilla operations in occupied France, Belgium, and Holland, as well as those in the Philippines, were instrumental in facilitating Allied ground campaigns.

Many types of information activities are used to influence friendly, adversary, and neutral audiences. Resistance groups craft narratives that best convey the movement's purpose and leverage key grievances of importance to the people. Another important purpose of information operations could be to encourage disparate resistance factions to work together to achieve common objectives.

Because the FID and UW core tasks are so closely related, employing many similar capabilities, a comprehensive Gray Zone special warfare campaign could include aspects of both missions, thus capitalizing on their synergistic effect. Among the U.S. objectives in initiating support to the Nicaraguan resistance in the early 1980s, for example, was to aid the U.S. FID program in El Salvador by pressuring the Nicaraguan Sandinista government to halt its support to the Salvadoran Farabundo Marti National Liberation Front.[11]

Today, "regional powers such as Russia, China, India, Indonesia, Brazil, Nigeria, South Africa, Turkey, and Iran assert growing power and influence. . . . Sub-state actors (e.g., clans, tribes, ethnic and religious minorities) seek greater autonomy from the central government."[12] The complex nature of the future operating environment will often render traditional applications of the diplomatic and economic instruments ineffective or inappropriate. Decisionmakers might wish to avoid the political risks and consequences, including escalation and mission creep, associated with direct military engagement. At such times, UW might be the only viable option through which the U.S. Government can indirectly achieve political objectives. By supporting indigenous insurgencies, resistance movements, or other internal opposition groups, the U.S. Government can employ UW as a strategic tool of coercion, disruption, or to lead to the defeat of a hostile regime.

An Enigmatic History

U.S. UW doctrine has evolved from its World War II roots when the Allies conducted UW in at least 18 countries worldwide. Operations by U.S. forces include a highly successful UW campaign in an "economy of force" role in Burma and operations by stay-behind guerrilla leaders in the Philippines, where UW proved invaluable to U.S. land forces during the liberation of that country. Probably the best prepared UW operations were conducted in the European theater, where Allied SOF benefited from an extensive and well-tested UW command and sustainment infrastructure, to say nothing of state-of-the-art training and equipment.

On May 25, 1940, when the German defeat of France seemed all but inevitable, the British Chiefs of Staff met to consider possible courses of action. Once France fell, they believed, Britain's only hope lie in rescue by the as yet immobilized United States. Until that time, "the best hope would lie in subversion, to rot the enemy-held countries from within."[13] Prime Minister Winston Churchill, who saw great value in helping the people of occupied Europe to play an active part in their own liberation, signed the charter for the Special Operations Executive (SOE) in July 1940.

Four years later, Special Force Headquarters, an Allied UW command subordinate to General Dwight D. Eisenhower's theater command and staffed by the British SOE and the U.S. OSS, along with Free French and other Allied personnel, deployed several types of special forces into denied territory in occupied Europe. Among the better known units were the multinational Jedburgh teams. Deployed in support of the French Resistance, "Jed" teams were primarily assigned the dual mission of organizing, equipping, training, and advising guerrilla forces; and serving as a communication link between the Resistance and the Allied high command in London. But they served an additional purpose that was just as important, though seldom mentioned and largely unheralded.

Many Jedburgh veterans later testified that they spent much of their time preventing the various resistance factions—each with different postwar political agendas and often violently opposed to one another—from fighting each other and keeping them focused on the common enemy, the German occupiers.[14] One need look no further than Syria today to imagine how much more difficult the Allied ground campaign to liberate France might have been had this internecine rivalry not been held in check. With all of their tactical and operational successes, the Jedburghs' greatest strategic contribution might have been in keeping the tenuous French Forces of the Interior coalition intact, making the Jeds truly warrior-diplomats. Eisenhower later wrote of the work of the Jedburghs and other SOE and OSS special forces: "In no previous war, and in no other theater during this war, have resistance forces been so closely harnessed to the main military effort."[15]

Unconventional warfare continued to play a significant role in U.S. foreign policy during the early Cold War years, often in the form of covert paramilitary operations led by the Central Intelligence Agency. Military UW conducted during the Korean War was only minimally effective, primarily because of a lack of training and experience on the part of those charged with executing it.

In April 1961, President John F. Kennedy had to weather the politically embarrassing failure of the ill-advised Bay of Pigs affair in Cuba. Secretly working at a military base in Guatemala under the guise of a mission to train Guatemalan forces, U.S. Army Special Forces trained the rebel force of Cuban exiles in small unit guerrilla warfare operations.[16] Unfortunately, those forces were then employed in an inappropriate manner, attempting a conventional amphibious landing and beach assault against superior forces.

Throughout the Cold War, many hard lessons were learned in places as wide-ranging as Eastern Europe, China, Indonesia, Tibet, North Vietnam, Nicaragua, and elsewhere. One major success came during the 1980s with support provided to the Afghan Mujahideen that resulted in expulsion of Soviet occupation forces from that country.

The post–Cold War era brought two major UW successes for U.S. forces. First came the operation to oust the Taliban regime in Afghanistan in late 2001, described at the beginning of this article. The second was the UW operation in northern Iraq that contributed to victory during the 2003 U.S. invasion of that country.

Civil Resistance

Today's joint UW doctrine recognizes variances of resistance that span the breadth of organized opposition from reform-oriented social movements[17] to social revolution,[18] to insurgency, and on to larger armed revolutionary movements.

Recently, there has been growing interest in UW operations that leverage existing social movements and nonviolent, civil resistance–based social revolution. Contributing to this interest is the favorable track record of such movements in comparison with armed resistance. Based on one recent study of 323 resistance movements whose objective was regime change or expulsion of a foreign occupation force between 1900 and 2006, those movements following a strategy of "nonviolent resistance against authoritarian regimes were twice as likely to succeed as violent movements."[19]

The main reason for this is that movements choosing to follow a nonviolent strategy attract a much larger domestic support base than armed and violent movements. While even the most successful of the armed variety hope to attract a support base numbering in the tens of thousands, supporters numbering in the hundreds of thousands for nonviolent resistance campaigns are not unusual. Moreover, nonviolent movements find it much easier to garner backing from the international community, so important in building coalition UW support.

Figure 2 (created by the Naval Postgraduate School's Doowan Lee) illustrates the relationship between social movements, social revolution, and unconventional warfare. An example of the scenario depicted by sector G at the center of the diagram can be seen in U.S. support provided to resistance elements during Serbia's "Bulldozer Revolution"

that resulted in the overthrow of dictator Slobodan Milosevic, then president of what remained of Yugoslavia.

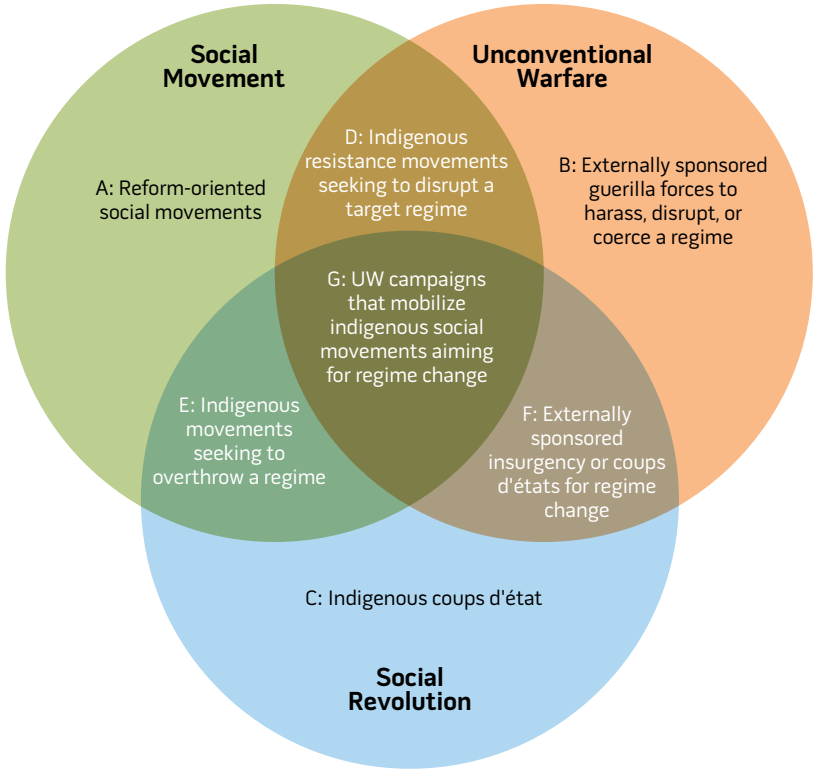
When massive demonstrations in September 1999 demanded Milosevic's resignation, he responded with a brutal crackdown by police and the army. One opposition group, however, remained determined to oust Milosevic through a campaign of nonviolent civil disobedience. *Otpor* (Serbian for resistance), an underground Serbian youth movement formed in 1998 by a dozen college students, eventually grew to a nationwide grassroots popular movement claiming a membership of more than 70,000.[20] The Bill Clinton administration decided to support the movement and provided much in the form of funding, computers, and political and military advice.

The domestic anti-Milosevic campaign culminated in October 2000 with a nationwide general strike and a march on the capital by hundreds of thousands of protesters from across the country. Milosevic finally announced his resignation the following day, bringing to an end a brutal 13-year regime.

For several reasons, SOF are ideally suited to contribute to U.S. support to such social revolutions. First and foremost, it must be remembered that just because a movement opts to follow a nonviolent strategy is no guarantee that the revolution will remain nonviolent. Several of the Arab Spring revolutions have shown that such movements must be prepared in the event that severe government repressive measures drive them to abandon the nonviolent strategy and resort to an armed resistance campaign rather than forfeiting their cause. In fact, in the case of Serbia's Bulldozer Revolution, some elements of the resistance were prepared to do just that had it become necessary.

Participants at a recent UW/Resistance seminar (co-sponsored by U.S. Special Operations Command Europe and Joint Special Operations University) at the Baltic Defence College in Estonia observed that, based on the experiences of some former Warsaw Pact nations in their civil resistance–based post–Cold War revolutions, "resistance can be armed or non-violent, but both must be planned for."[21]

Figure 2.



Clearly, SOF have a traditional UW role in providing the necessary organizing, equipping, training, and advising functions to support such an armed resistance effort, but this role can have a much greater chance of succeeding if SOF are involved as advisors early on, during the nonviolent resistance campaign. Whether early U.S. support is covert or overt, if it reaches the point where lead-agency responsibility transfers from the Department of State or another government agency to DOD, early involvement by SOF can ensure that such a transfer is smooth and is executed at full speed, much like the passing of a baton in a relay race, rather than a dangerous and counterproductive stop-and-go affair. SOF capabilities and expertise transcend lead-agency boundaries.

An early decision to support a movement can also pay dividends, providing the opportunity for SOF or other U.S. Government departments or agencies to influence, shape, and steer the movement; encourage and facilitate the consolidation or alliance of competing but compatible factions; or thwart or inhibit the development of competing factions or movements that are incompatible and adversarial.

DOTMLPF Implications

Much is already being done toward developing or upgrading joint and Service UW-related doctrine, and better organizing and preparing our primary UW force. While some doctrine, organization, training, materiel, leader development, personnel, and facilities (DOTMLPF) requirements have been identified and solutions determined, full implications should continue to emerge through a rigorous and disciplined requirements assessment process.

In recognizing a need for doctrine updating, one Theater Special Operations Command commander recently observed:

The conditions of 2014 are different than those of 1944, and the tools with which unconventional warfare is waged today differ greatly. We must advance from the nostalgic vision of remote guerrilla bases

in denied territory and adapt to a world of split-second communications and data transfer, non-violent resistance, cyber and economic warfare, and the manipulation of international law to undermine national sovereignty. . . . In our era, unconventional warfare is more likely to take the form of a civil resistance movement, perhaps manipulated by foreign powers, that seeks to provoke a violent government response in order to destroy that government's legitimacy in the eyes of the international community. Waging and countering this new unconventional warfare demands great sophistication and agility.[22]

Implementation of emerging UW concepts and doctrine requires persistent, low-visibility presence around the world and the development of a network of useful and influential contacts. Foreign internal defense, security assistance, foreign officer exchange programs, foreign education and study opportunities, and special assignments are important means of contributing to this.

To meet the challenges of UW support to social movements or social revolution, a deeper understanding of the dynamics of civil resistance and how UW can be conducted through such subversive (and often nonviolent) movements is required. Understanding conditions where more violent methods might be problematic, if not counterproductive, calls for an in-depth understanding of the theories, concepts, and methods associated with social movement influence, mobilization, and activism. SOF must continually work to upgrade their training regimen and education curriculum in areas such as:

- social movement theory
- regional history, cultural studies, and language proficiency
- creation and preparation of an underground
- cyber UW tools and methods
- influence operations
- negotiation and mediation skills
- popular mobilization dynamics
- subversion and political warfare
- social network analysis and sociocultural analysis.

To make a thorough assessment of a group and to be in a position to capitalize on the advantages of early observation and possible engagement, SOF should be capable of recognizing the conditions and early indicators of resistance.

Materiel requirements are such that they apply to other SOF core tasks as well as UW. Senior leaders have long recognized that SOF require improvements in denied area penetration and standoff capabilities and an ability to perform critical core tasks for extended periods in high-risk situations.[23] The requirement for low-visibility and stealthy air platforms might not be limited to infiltration, exfiltration, and personnel recovery. Modified versions of these platforms could serve as tankers or gunships, or platforms for information operations, aerial resupply, precision strike, and terminal guidance.

Materiel requirements might also include a stealthy, long-endurance SOF drone with global surveillance and strike capability. Other payloads could provide the capability to disseminate electronic messages via radio or television broadcast, in standoff mode, to target audiences in denied areas. Unmanned aerial systems might also have the ability to emplace remote unattended ground sensors capable of detecting, classifying, and determining the direction of movement of personnel, wheeled vehicles, and tracked vehicles.

A Critical Policy Gap

After a few early political warfare successes in the 1950s, along with some clear failures, President Eisenhower once considered appointing a National Security Council (NSC)-level "director of unconventional or non-military warfare," with responsibilities including such areas as "economic warfare, psychological warfare, political warfare, and foreign information."[24] In other words, he saw the need for an NSC-level director of political warfare, someone to quarterback the habitually interagency effort. This need still exists to achieve unity of effort across all aspects of national power (diplomatic, informational, military, and economic) across the continuum of international competition. As Max Boot has observed, political warfare has become a lost art which no department or agency of the U.S. Government views as a core mission.[25]

Conclusion

Unconventional warfare, whether conducted by the United States or Russia or any other state seeking to advance national interests through Gray Zone proxy warfare, has a rich history but continues to evolve to meet changing global conditions. One certainty in a world of continuing disorder, a world bereft of Cold War clarity and relative "stability," where globalization has enabled almost continuous change, is that the UW mission must continue to adapt and so must those responsible for executing it.

U.S. forces can likely have the greatest chance for success in Gray Zone UW operations when engaged early in a resistance movement's development and continuously thereafter. As demonstrated in the U.S. operation to support Afghanistan's Northern Alliance in 2001, however, it can also succeed with relatively mature and experienced resistance groups, when a benefactor state's support might be just enough to tip the scales in favor of a movement that has been largely stalemated.

One remaining requirement is that of determining what Gray Zone UW success looks like and establishing meaningful criteria for measuring the effectiveness of such operations. The very concept of "winning" must be fundamentally reexamined in the context of a future environment where we will likely not commit large military formations in decisive engagements against similarly armed foes.

A Gray Zone "win" is not a win in the classic warfare sense. Winning is perhaps better described as maintaining the U.S. Government's positional advantage, namely the ability to influence partners, populations, and threats toward achievement of our regional or strategic objectives. Specifically, this will mean retaining decision space, maximizing desirable strategic options, or simply denying an adversary a decisive positional advantage.

In these human-centric struggles, our successes cannot be solely our own in that they must be largely defined and accomplished by our indigenous friends and coalition partners as they realize respectively acceptable political outcomes. Successful culmination of Gray Zone conflicts will not be marked by pomp and ceremony, but rather should, ideally, pass with little or no fanfare or indication of our degree of involvement.

History has shown that no two UW situations or solutions are identical, thus rendering cookie-cutter responses not only meaningless but also often counterproductive. Planners and operators most in demand in this difficult task will be those capable of thinking critically and creatively, warriors unhindered by the need for continuous and detailed guidance. Such special operators will be most capable of performing critical UW tasks under politically sensitive conditions, ensuring that they can serve, in the tradition of their Jedburgh predecessors, as true warrior-diplomats. JFQ

Notes

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[4] Ibid.

[5] George F. Kennan, "Policy Planning Staff Memorandum," May 4, 1948, National Archives, RG 273, Records of the National Security Council, NSC 10/2, available at <http://academic.brooklyn.cuny.edu/history/johnson/65ciafounding3.htm>.

[6] Max Boot and Michael Doran, Council on Foreign Relations Policy Innovation Memorandum No. 33, *Political Warfare* (Washington, DC: Council on Foreign Relations, June 7, 2013).

[7] USSOCOM, *Special Operations Forces Operating Concept*, May 2013, 1.

[8] Dan Madden et al., *Special Warfare: The Missing Middle in U.S. Coercive Options* (Santa Monica, CA: RAND, 2014), 1.

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[10] Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, November 8, 2010, as amended through October 15, 2015), defines *unconventional warfare* as "activities conducted to enable a resistance movement or insurgency to coerce, disrupt, or overthrow a government or occupying power by operating through or with an underground, auxiliary, and guerrilla force in a denied area."

[11] David Ronfeldt and Brian Jenkins, *The Nicaraguan Resistance and U.S. Policy* (Santa Monica, CA: RAND, 1989), 15.

[12] USSOCOM, *SOF Operating Concept*, 2.

[13] William Mackenzie, *The Secret History of S.O.E.: Special Operations Executive, 1940–1945* (London: St. Ermin's Press, 2000), xix.

[14] Will Irwin, *The Jedburghs: The Secret History of the Allied Special Forces, France 1944* (New York: PublicAffairs, 2005), 236, based on correspondence and interviews with more than 60 U.S., British, and French Jedburgh veterans from 1985 to 2005.

[15] General Dwight D. Eisenhower, letters to the executive director of SOE and to the director of the Office of Strategic Services London, May 31, 1945. See Irwin, xxii, 280.

[16] Central Intelligence Agency History Staff, *Official History of the Bay of Pigs Operation*, Vol. 2: *Participation in the Conduct of Foreign Policy*, October 1979 (declassified July 25, 2011), 57–98.

[17] JP 3-05.1, *Joint Special Operations Task Force Operations* (Washington, DC: The Joint Staff, April 26, 2007), defines *social movement* as "a collective challenge by people with common purposes and solidarity in sustained interactions with elites, opponents, and authorities."

[18] JP 3-05.1 defines *social revolution* as "a rapid transformation of a society's state and class structures, accompanied and in part accomplished through popular revolts."

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[21] U.S. Special Operations Command Europe (USSOCEUR) and Joint Special Operations University (JSOU), "Unconventional Warfare/Resistance Seminar Series After Action Report," November 2014, 3.

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[25] Boot and Doran.

Ticonderoga-class guided-missile cruiser USS *Chancellorsville* recently completed combat systems update with latest Aegis Baseline 9 combat system, June 18, 2015 (U.S. Navy/Peter Burghart)

The Aegis Warship

Joint Force Linchpin for IAMD and Access Control

By John F. Morton

Under defense strategic guidance, U.S. combatant commanders have been rebalancing joint forces along the Asia-Pacific Rim with recalibrated capabilities to shape the regional security environments in their areas of responsibility. The mission of what the 2012 guidance calls "Joint Force in 2020" is to project stabilizing force to support our allies and partners, and to help maintain the free flow of commerce along sea lines of communication in the globalized economic system.[1]

Forces postured forward for deterrence and conflict prevention are a substantial component to U.S. global engagement. The combatant commanders, joint community, and Services are working together to plan and resource this joint force with credible, effective, and affordable warfighting capabilities that assure friends and deter adversaries—should deterrence and conflict prevention fail.

Complicating the combatant commanders' calculus are the advancing antiaccess/area-denial (A2/AD) capabilities in the hands of potential adversaries and rogue states that pose a major challenge to the maritime domain. From the Arctic to the Arabian Gulf, Russia, North Korea, China, India, Pakistan, and Iran all have to varying degrees either deployed or are developing nuclear weapon and ballistic missile capabilities. Combined with other A2/AD capabilities that include sea-skimming and high-diving supersonic cruise missiles, these threats to the global maritime commons translate into powerful tools for diplomatic coercion.

The 2014 Quadrennial Defense Review put specific priority on increasing overall joint force capabilities to counter growing A2/AD challenges. In what

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the Pentagon characterizes as the A2/AD environment, defense officials are now conceptualizing the high-end level of the warfighting spectrum around the integrated air and missile defense (IAMD) mission. In December 2013, General Martin Dempsey, then Chairman of the Joint Chiefs of Staff, released his *Joint Integrated Air and Missile Defense: Vision 2020* that spoke of the need for IAMD to "be even more Joint—advancing interdependence and integrating new capabilities."[2]

Senior military officials conceive of high-end operations as IAMD-centric. They view IAMD as a joint capability to be employed at the tactical, operational, and strategic levels of war. Competitive IAMD strategies for today's A2/AD environments are comparable to those strategies formulated during the Cold War with reference to the Fulda Gap, such as the Follow-on Forces Attack subconcept. The strategies inform IAMD requirements generation and acquisition, as well as the Planning, Programming, Budgeting, and Execution process for systems and architectures.

Joint IAMD describes the IAMD environment as an expanding battlespace requiring plans and operations that range across global, regional, transregional, and homeland domains. "The regional and intercontinental reach of ballistic missiles," it continues, "alters the strategic and operational decision space."[3] IAMD forces in a specific theater can extend to regional, transregional, and homeland operations. As such, combatant commander plans must allow for coordination and handoff across combatant command areas of responsibility.

Since May 2013, the Missile Defense Agency (MDA) has had technical authority over the IAMD mission. MDA now leads all joint IAMD engineering and integration efforts, including defining and controlling the IAMD interfaces and the allocation of IAMD technical requirements. MDA's current director is Vice Admiral James Syring, the first Navy head of the agency. His arrival in 2012 coincided with a time when the Aegis ship-based combat system came to be seen as a core element of U.S. and partner nation efforts in ballistic missile defense (BMD) in line with the European Phased Adaptive Approach (EPAA), the administration's missile defense strategy for Europe.[4] Syring previously served as the program executive officer for integrated warfare systems (PEO IWS) in the Navy office that was responsible for modernization of Aegis cruisers and destroyers, new construction, and ongoing baseline upgrades to their combat systems.

Working with MDA in driving IAMD jointness is the Joint Staff's Force Structure, Resources, and Assessment Directorate (J8), specifically the Joint Integrated Air and Missile Defense Organization (JIAMDO). This group leads in developing and fielding a comprehensive, integrated joint and combined air and missile defense force in support of *Joint IAMD*. Since June 2014, JIAMDO directors have been two other Navy flag officers, Rear Admiral Jesse A. Wilson, Jr., and his recent successor, Rear Admiral Ed Cashman. They have led JIAMDO in planning, coordinating, and overseeing joint air and missile defense requirements, operational concepts, and operational architectures. They have also headed the U.S. delegation to the North Atlantic Treaty Organization (NATO) Air and Missile Defense Committee that develops and steers Alliance IAMD policy, all the more important in view of the current situation in the Eastern Mediterranean.

These Navy appointments to the joint community reflect the reality that the foundational maritime IAMD enablers for active defense will be the surface Navy's modernized fleet of Aegis-equipped warships. Mobile, forward-deployed Aegis cruisers and destroyers, variously upgraded, will serve as the combatant commanders' net-enabling nodes for globally integrated joint force operations for access control. (Augmenting the missile defense capability of at-sea Aegis platforms in the NATO area of responsibility will be the land-based Aegis Ashore variant. Under EPAA Phase II, Aegis Ashore is in Romania with a technical capability declaration that came at the end of 2015; the Office of the Secretary of Defense for Policy has planned for initial operational capability [IOC] in July 2016. Phase III Aegis Ashore is due in Poland in 2018.)

Modernized Aegis as the IAMD Game Changer

The linchpin of regional IAMD is surface warfare, then-Captain James Kilby wrote in April 2014.[5] The deputy for ballistic missile defense, Aegis combat systems, and destroyers in the Office of the Chief of Naval Operations (OPNAV) Surface Warfare Directorate (N96), Kilby explained that the surface Navy's fleet of 30 Aegis cruisers and destroyers is capable of conducting ballistic missile defense. His main points, however, addressed how a host of additional Aegis ships are undergoing modernization and will be equipped with a new combat system baseline that provides advanced IAMD capabilities. Now a rear admiral, Kilby became the first commander of the newly established Naval Surface and Mine Warfighting Development Center in San Diego in mid-2014. Prior to his OPNAV service, he commanded the cruiser USS *Monterey* (CG 61), the first Aegis BMD ship to deploy to the Mediterranean in March 2011 to support EPAA.

Kilby stated that the key feature of Aegis IAMD modernization is the Baseline 9 combat system upgrade that provides the ability to conduct integrated fires via a sensor net linking ships and aircraft. Four Baseline 9 ships—two cruisers and two destroyers—underwent certification in 2015. An additional BMD destroyer, the lead Baseline 9 destroyer USS *John Paul Jones* (DDG 53), is homeported in Hawaii. In August 2014, the *John Paul Jones* replaced the Aegis cruiser USS *Lake Erie* (CG 70) as the deployable BMD test ship assigned to the Barking Sands Pacific Missile Range Facility on Kauai to support MDA and Navy testing of IAMD capabilities. (The *John Paul Jones* Baseline 9 upgrade was co-funded by the Navy and MDA. Although the ship is an "integrated baseline ship" that is also deployable, it is not a combatant command asset.) *John Paul Jones* has to date successfully completed four flight

Crew of guided-missile destroyer USS *John Paul Jones* successfully engaged 6 targets with 5 Standard Missiles during live-fire test, June 19, 2014 (U.S. Navy)

test events intercepting both short-range ballistic missile and cruise missile targets using the Standard Missile (SM)-6 Dual I and SM-2 Block IV missiles.

The most complex variant of integrated fires, wrote Kilby, is the emerging Navy Integrated Fire Control–Counter Air (NIFC-CA) capability that dramatically extends the sensor net to allow for missile engagements beyond the radar horizon. NIFC-CA provides integrated fire control for theater air and antiship cruise missile defense in the tactical environment. The capability greatly expands the over-the-horizon air warfare battlespace for surface combatants to enable third-party targeting and use of smart missiles. "If properly employed with the right tactics," Kilby wrote, NIFC-CA, the SM-6 surface-to-air/space missile, the E-2D Hawkeye with the Cooperative Engagement Capability (CEC), and 5th-generation F-35 fighter aircraft will be "IAMD game changers."

OPNAV's Surface Warfare Directorate is working to enhance the utility of NIFC-CA. Among the concepts considered is making the Baseline 9 ships less reliant on assets of the carrier strike group by using an organic unmanned aerial vehicle with the necessary data links to provide the tracking and targeting information to the ship's system as a way forward for Aegis in its IAMD role.

In 2013, then–Chief of Naval Operations Admiral Jonathan W. Greenert directed the Service to accelerate NIFC-CA's fielding, achieving IOC of Increment 1 with the E-2D in 2014. The *Theodore Roosevelt* carrier strike group deployed with a squadron of E-2Ds and the *USS Normandy* (CG 60), a Baseline 9 cruiser. The lead Baseline 9 cruiser, USS *Chancellorsville* (CG 62), is now under operational control of U.S. 7th Fleet. The third Baseline 9 cruiser, USS *Princeton* (CG 59), underwent combat system ship qualification trials and integrated testing in July 2015. The initial NIFC-CA concept of operations, however, still requires additional testing and refinement as the Navy delivers the tactics, techniques, and procedures (TTPs) needed to exploit the new IAMD capabilities.

While the Baseline 9 cruisers go by the name "air defense cruisers," the Baseline 9 destroyers will be full-up IAMD Aegis ships with both NIFC-CA and BMD capabilities. The Baseline 9.C1 destroyers USS *John Paul Jones*, USS *Benfold* (DDG 65), and USS *Barry* (DDG 52) were slated to achieve Navy certification in 2015 with open

Guided-missile cruiser USS *Lake Erie* equipped with second-generation Aegis BMD weapon system used launch-on-remote doctrine to engage target from Pacific missile range facility, February 12, 2013 (U.S. Navy/Mathew J. Diendorf)

architecture BMD 5.0 combat system computer software. *Benfold* is now on station with the 7th Fleet's Forward Deployed Naval Forces in Yokosuka, Japan. *Barry* will follow by 2017.

Based on the tactical threat picture, Baseline 9 Aegis destroyers will be able to allocate their computer resources more dynamically in a single computing environment to maximize their BMD performance without degrading their air defense role. The principal enabler of this capability is the multi-mission signal processor (MMSP) for the Aegis SPY-1D radar. Earlier BMD computing suites for the radar used a separate signal processor, meaning a BMD-equipped surface warship could engage either a ballistic missile or an aircraft/cruise missile threat, but not both threats simultaneously. This situation resulted in difficult trade-offs that limited the system's anti-air warfare (AAW) capability to an unknown extent. The MMSP, however, effectively integrates signal-processing inputs from the BMD signal processor and the legacy Aegis in-service signal processor for the radar. This integration enables the SPY radar to go from single-beam to dual-beam capability to meet the power resource priorities for simultaneous anti-air warfare and BMD sector coverage. The MMSP's up-to-date commercial off-the-shelf hardware and software algorithms control radar waveform generation and allow for simultaneous processing of both AAW and BMD radar signals.

Critically, the MMSP improves Aegis SPY radar system performance in littoral environments, for example, against sea skimmers in a high-clutter environment. For BMD, the processor also enhances search and long-range surveillance and tracking and BMD signal processor range resolution, discrimination, and characterization, as well as real-time capability displays.

The Navy's PEO IWS strategic vision for Aegis modernization is simple. Smaller and more frequent upgrades to modular combat systems with open architecture and standard interfaces will best enable the surface Navy to maintain operational superiority in support of the joint force in the A2/AD environment.

Aegis baseline upgrades strive for commonality to reduce the combat system footprint onboard ships. Future baselines will bring additional IAMD capabilities, notably, integration of additional off-board sensors as the joint force "sensor-shooter" networks mature and A2/AD counters in the access

Ticonderoga-class Aegis guided-missile cruiser USS *Chosin* sails behind USS *Chafee*, USNS *Guadalupe*, and USS *Preble* for photo exercise at sea, February 13, 2015 (U.S. Navy/Andrew Albin)

environment. A key developmental focus is determining what other off-board elements can integrate into the fire control loop and federated network to increase overall affordability and lethality.

JIAMDO: An Ally for Driving Data-Sharing over the Sensor-Shooter Net

The good news is that the question of how to share data is no longer a "cultural issue." The Joint Integrated Air and Missile Defense Organization is helping to forge strong relationships across PEO IWS, MDA, combatant commands, and the Services. The bad news, however, is that going from interoperable to integrated systems that seamlessly share data will require investments in systems testing and evaluation among the Services. The era of declining defense budgets and increasing demand from combatant commanders for capacity as well as capability provides impetus to leverage efficiencies with joint and possibly Allied systems. "Importantly, IAMD will need to be even more Joint—advancing interdependence and integrating new capabilities," states the *Joint IAMD*.[6] Affordability is key to the joint IAMD vision for fielding more systems. The JIAMDO Vision and Roadmap describe the "to be" goals and desired states of IAMD in 2020 and 2020–2030, respectively. Not anticipating a quantum leap to interoperability, JIAMDO is working closely with MDA's IAMD technical asesssment to determine what interoperability is possible given Service budgets and willingness.

Modernized Aegis cruisers and destroyers will plug into the strategic-level network of national sensors for missile defense. This sensor-shooter net will ultimately provide them with a flexible, combined launch-on-remote/engage-on-remote capability along the area and regional missile defense continuum, potentially extending to select homeland defense missions in the future.

The potential for further IAMD sensor-shooter networks to counter A2/AD capabilities is leading both combatant commanders and JIAMDO to focus on track correlation and data links. From an Aegis-platform perspective, the farther out the sensor-shooter mix, the more crucial the resolution of track correlation issues. Tracks and data are provided, for example, by Link 16, CEC, and the Command and Control Battle Management and Communications network, the integrating element of the ballistic missile defense system.

JIAMDO has been pushing the Services to share common tracks for a shared-picture, integrated fire control (IFC) and operational-level joint engagement zones (JEZs). JIAMDO funds and runs exercises for combatant commands and the Services to test TTPs for joint IAMD missions. The annual Black Dart exercises, for example, test countermeasures against unmanned aerial systems. *Joint IAMD* challenges JIAMDO to leverage ongoing efforts to improve the air picture (the common operational picture [COP] for wide-area surveillance and battlespace awareness), combat identification (CID), discrimination (for ballistic missiles), and IFC and battle management, for example, via automated battle management aids (ABMA). Having embraced the joint IAMD vision, the Office of the Secretary of Defense and combatant commanders have accepted localized JEZ integrated air and missile defense. JIAMDO is thus active in developing its JEZ approaches and their COPs. Indeed, it regards COPs as one of the so-called pillars of IAMD, along with CID, IFC, and ABMA.

JIAMDO has the responsibility for developing the IAMD operational architecture—the broad-based description of how things work conceptually over the entire IAMD mission area. A fully functional joint IAMD architecture supports execution of current and future concepts with operationally representative positions for these systems. Applying a systems-agnostic approach, a JIAMDO technical committee takes that architecture and then defines IAMD system requirements in concert with the MDA Joint Service Systems Engineering Team (JSSET), now that MDA has the responsibility over IAMD technical assessment.

Having technical authority over IAMD missions, MDA approaches interoperability architecture first by building on legacy systems that will then inform ground-up design for future systems. To execute the joint IAMD architecture requirements for Aegis, MDA works with its Aegis BMD component and the Navy's PEO IWS 7.0 (Future Combat Systems). IAMD interoperability requirements also apply to the Army Terminal High Altitude Air Defense and Patriot missile systems, the Air Force Airborne Warning and Control System, F-15 and F-22 aircraft, the Navy E-2 and F/A-18 aircraft, and the Army Joint Land Attack Cruise Missile Defense Elevated Netted Sensor system, among others.

The JSSET is the specific MDA entity that coordinates the work on the architectures. This team serves as a joint acquisition effort to build the future framework for the near-term joint track management capability (JTMC) and long-term joint IAMD capabilities. JSSET now has a business structure for outreach as well as traction for the system architecture products that are releasable to NATO Allies and industry for the requirements definition process.

A priority product is the Army/Navy JTMC Bridge. JSSET is continuing development of the JTMC Bridge, which has been in the works for several years. Representing a successful translation of operational needs into joint requirements, the Bridge is in fact the only system architecture for an entire mission area. A hardware solution specific to connecting two systems—the Army Integrated Fire Control Network and the Navy CEC—the JTMC Bridge has the potential to enable additional kill chains. At this point, however, JIAMDO and the JSSET recognize the value of the Bridge. JIAMDO would like to see a broader, future-looking effort toward an IAMD-wide systems architecture based on the operational architecture. Studies are ongoing, including an operational benefits analysis and cost benefit analysis.

Looking Ahead

Joint Integrated Air and Missile Defense: Vision 2020 aspires to integrate policy, strategy, concepts, tactics, and training. The overarching imperative that supports integration must incorporate:

- Creating an awareness of the IAMD mission and the benefits of its proper utilization across the Department of Defense, to include the development of the enabling framework of concepts, doctrine, acquisition, and war plans that support full integration of IAMD into combat operations. Commanders must understand and embrace every weapon and tool available to them.
- Educating personnel at every level on the need to integrate our capabilities into an interdependent joint force, how to employ joint elements together, how to employ elements in a joint engagement zone, what combinations create which capability, and which are ineffective when employed on a stand-alone basis.[7]

In his April 2014 commentary, Rear Admiral Kilby wrote, "Efficient and effective command and control (C2) of IAMD forces ensures that we employ these new capabilities to their maximum effectiveness, which requires moving beyond the C2 approach under which we currently operate."[8] To exploit the Navy's revolutionary Aegis IAMD capabilities, the admiral observed that, "Surface Warriors must embrace the art and science of IAMD. . . . We require pioneering naval officers to master 21st-century warfighting technology, discard outdated ideas, and generate, sometimes from scratch, the tactics, techniques and procedures essential for effective employment of new weapons systems."

Kilby wants the Navy to assemble Strike Group Staffs, ship crews, and Air Wing personnel to do the significant, dedicated planning and integration essential for putting NIFC-CA, SM-6, Aegis Baseline 9, CEC, E-2D, and F-35 to sea. "This execution is operational rocket science," he concluded. "Those who master it will be identified as the best and brightest."

Under command of the best and brightest, modernized Aegis NIFC-CA and IAMD warships will enable the Navy to maintain its historical role as the Nation's provider of general purpose fleets operating away from American shores to maintain maritime access and the security of the maritime commons. JFQ

Notes

[1] *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, DC: Department of Defense, January 2012), 3, available at <www.defense.gov/news/defense_strategic_guidance.pdf>. Referencing U.S. engagement in the Asia-Pacific, the 2014 Quadrennial Defense Review speaks of "our commitment to free and open commerce, promotion of a just international order, and maintenance of open access to shared domains." *Quadrennial Defense Review 2014* (Washington, DC: Department of Defense, 2014), 4, available at <http://archive.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf>.

[2] *Joint Integrated Air and Missile Defense: Vision 2020* (Washington, DC: The Joint Staff, December 5, 2013), 1, available at <www.jcs.mil/Portals/36/Documents/Publications/JointIAMDVision2020.pdf>.

[3] Ibid., 1–2.

[4] Rachel Oswald, "Missile Defense Agency May Go in New Direction with New Chief, Advocate Says," *Global Security Newswire*, August 8, 2012, available at <www.nti.org/gsn/article/missile-defense-agency-may-go-new-direction-new-navy-leadership-advocate-says/>.

[5] James Kilby, "Surface Warfare: Lynchpin of Naval Integrated Air/Missile Defense," Center for International Maritime Security, April 4, 2014, available at <http://cimsec.org/surface-warfare-lynchpin-naval-integrated-airmissile-defense/10748>.

[6] *Joint Integrated Air and Missile Defense*, 1.

[7] Ibid., 5.

[8] Kilby.

Marines fire tube-launched, optically tracked, wire command-link guided-missile system from M-41 Saber weapon system during sustainment training at Udairi Range, Kuwait, July 10, 2012 (U.S. Marine Corps/Michael Petersheim)

Violent Nonstate Actors with Missile Technologies

Threats Beyond the Battlefield

By Mark E. Vinson and John Caldwell

During the summer of 2014, three overlapping crises involving violent nonstate actors (VNSAs) with missile technologies captured the world's attention.[1] First, for 50 days in July and August, Israel engaged in a major conflict with Hamas, Palestinian Islamic Jihad, and other VNSAs that fired more than 4,500 rockets and mortars from the Gaza Strip at Israel.[2]

The second crisis occurred on July 17, 2014, when Malaysian Airlines flight MH-17, a civilian airliner carrying 298 people, was shot down at cruising altitude by an advanced surface-to-air missile (SAM) while transiting territory controlled by Ukrainian separatist rebels.[3] U.S. intelligence officials believe the airliner was shot down by pro-Russian rebels using an advanced Russian SA-11 missile system.[4]

The third crisis seemed to erupt in the spring and summer of 2014, when the self-proclaimed Islamic State of Iraq and the Levant (ISIL) seized territory and captured advanced weapons as it attacked across large stretches of Iraq and Syria. Among the weapons ISIL

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reportedly captured and used were shoulder-launched SAMs, also known as man-portable air defense systems (MANPADS).[5] ISIL claims to have used MANPADS to shoot down an Iraqi military helicopter.[6] ISIL's possession of MANPADS threatens low-flying coalition aircraft as well as aircraft at Baghdad International Airport.[7]

As indicated by these crises, the availability of advanced missile technologies—particularly precision-guided missiles—to VNSAs can be a game changer in their warfighting capabilities against nation-states if they use the weapons to offset their air superiority disadvantages with stand-off attack capabilities. This may be attributed in part to a general absence of enforceable control of the proliferation of missile technologies to nonstate actors. Counterproliferation is a term most commonly associated with the international conventions for the control of weapons of mass destruction, specifically nuclear, chemical, and biological weapons. However, without the control of international laws or the legitimacy and accountability constraints of state governments, VNSAs have gained access to an array of missile technologies that grant state-like capabilities to threaten significant death and destruction.

Ominous View from Israel

Israel may be unique in terms of the magnitude of the rocket and missile threats from its VNSA adversaries, but these threats could be a leading indicator of emerging threats not only to the United States but to any nation-state. Despite substantial differences in their security requirements, the United States and Israel share many interests and military challenges. Both are threatened as a result of the proliferation of missile technologies to VNSAs, and both are in persistent conflicts with VNSAs. As such, the U.S. military should carefully consider Israel's threats and responses to these threats for implications to the future development of joint force capabilities to counter irregular threats.

Israel's 2014 Gaza conflict is the latest in a series of conflicts featuring VNSAs firing large numbers of rockets, mortars, and missiles into its territory. For decades, the country has been attacked by a hostile array of VNSAs using a growing assortment of such weapons.[8] According to the Israel Defense Forces (IDF) blog, prior to the start of the latest conflict, Gaza-based militants had fired more than 15,200 rockets at Israel since 2001.[9] Although Gaza VNSAs may be a more active threat, Hizballah, a VNSA operating from Lebanon, is a substantially greater one. In July 2006, Hizballah escalated its campaign against Israel with a cross-border ambush of an IDF patrol. With Israel's strong military response, the situation quickly intensified. Before a ceasefire was secured 33 days later, Hizballah had fired nearly 4,000 rockets and missiles into Israel.[10] Since 2006, there have been little more than threats exchanged, but Israeli intelligence estimates that Hizballah has used the lull in fighting to amass an estimated 100,000 rockets (although some estimates are as high as 150,000).[11] The quantity of missiles and rockets that Hizballah possesses prompted the IDF's chief of operations to declare that Hizballah's arsenal is "similar to any national army's."[12]

In response to these missile threats, Israel has worked closely with the United States to develop and evolve air and missile defense capabilities to help protect its homeland and strategic assets.[13] During the Gulf War in 1991, the United States supported Israel with Patriot missile defense batteries to help protect it from Iraqi Scud missiles.[14] Since then, Israel has partnered with the United States to develop a multitiered missile defense system that contains active defense systems, including the Iron Dome mobile air defense system, as well as early warning/passive defense and counterstrike capabilities.[15] While the U.S. homeland has not been attacked by VNSAs employing rockets or missiles, the United States anticipates that an enemy will use such capabilities to contest deployment of military forces to operational areas and their freedom to operate within those areas.[16] Furthermore, with the proliferation of portable and advanced missile technologies, the United States must anticipate and adapt its joint forces to be able to address the range of regional and global threats, including those to its homeland, strategic assets, and allies, as well as to its military bases, ports, lines of communication, choke points, and operational areas.

Although Israel may be unique in the magnitude of the threat of VNSAs with missile technologies, it also may provide the United States and its partners with a valuable glimpse into the future. This article first explores the threats and associated operational issues likely to emerge as missile technologies are proliferated to VNSAs. Second, it identifies the joint force capabilities that the U.S. military may require to address these threats.

An Expanding Threat

The U.S. National Intelligence Council's Global Trends 2030 noted that the proliferation of "standoff missiles will increase the capacity of nonstate actors" and that the availability of "precision-guided weapons would allow critical infrastructures to be put at risk by many more potential adversaries."[17] As evidenced by the military capabilities of Hizballah, Hamas, ISIL, Ukrainian separatist militias, and the many other VNSAs around the world, the increasing availability of advanced missile technologies, coupled with improvements in their capabilities, is significantly expanding the threat to Israel, the United States, and other partner states, both regionally and globally.

The global arms trade is big business. According to a 2012 Congressional Research Service report, more than $71.5 billion in arms transfer agreements were made in 2011 to developing countries alone.[18] Besides the direct transfer of missiles, proliferation can enable VNSAs to manufacture or modify missile capabilities by providing precursor, dual-use materials and the "know-how" to fabricate rockets. VNSAs can obtain the materials and the knowledge to make their own rockets or can forge alliances with state sponsors and transnational criminal elements to obtain and smuggle weapons. In March 2014, IDF special forces intercepted a ship in the Red Sea carrying an Iranian arms shipment headed for the Gaza

Soldier with 2nd Battalion, 263rd Air Defense Artillery, demonstrates FIM-92 Stinger man-portable air defense system at Bolling Air Force Base, April 14, 2010 (U.S. Army)

Strip and recovered several dozen Syrian M-302 medium-range rockets (surface-to-surface, 100-kilometer range) hidden in shipping containers.[19]

Inadequate Arms Control

The United Nations Arms Trade Treaty (ATT) entered into force on December 24, 2014, with the intention of reducing the illicit arms trade by promoting "accountability and transparency by state parties concerning transfers of conventional arms."[20] Although the ATT is a step toward preventing the proliferation of arms to bad actors, arms control regimes are currently inadequate to address the proliferation of missile technologies to VNSAs.[21] So far, 130 states have signed the treaty, and 61 have ratified it.[22] However, the power of the ATT relies on the compliance of signatories. More specific to missile technologies, the Missile Technology Control Regime (MTCR), established in 1987, now includes 34 countries. As with the ATT, the MTCR relies on signatory countries adhering to export control guidelines to preclude the proliferation of unmanned delivery systems capable of delivering weapons of mass destruction. The ATT and MTCR may help cooperative states control the legal arms trade, but they are unlikely to dissuade the illegal sale or transfer of arms to VNSAs.

When VNSAs Obtain Improved Missile Technologies

The availability of improved missile technologies allows VNSAs to develop missiles and rockets with greater range, lethality, and precision, and in increased quantities. Perhaps the most significant improvement so far is in range. Increased range extends the risks, and fear, to a greater proportion of the population. With each major conflict since 2008, Hamas has obtained longer-range rockets, extending the risk to Tel Aviv and Jerusalem in 2012 and to most of Israel in 2014.[23] Improved precision will be a game changer, enabling VNSAs to target specific high-value civilian or military facilities, and increasing requirements (and competition) for active defense systems such as Iron Dome for their dedicated protection. Greater VNSA missile capabilities will also increase the need for additional passive defense capabilities, such as shelters and early warning, and more effective integrated air and missile defense (IAMD) attack operations.

In conflict regions, VNSA missile capabilities could deny deploying forces access to ports and challenge their freedom of action in the area of operations. Perhaps most significantly, adversary VNSAs could use MANPADS, advanced SAMs, and cruise missiles to

contest U.S. and Israeli air and maritime superiority. Hizballah in Lebanon already possesses such capabilities. According to Major General Ya'acov Amidror, former national security advisor to the prime minister of Israel, in addition to an arsenal of "some 150,000 missiles and rockets, several thousand of which have a range that cover the entire State of Israel . . . Hizballah also has long-range anti-ship missiles, anti-aircraft missiles, unmanned aerial vehicles, and modern anti-tank missiles."[24] Degraded air support would seriously affect joint force operations that rely on air superiority for close air support, attack helicopter operations, air-mobility operations, IAMD attack operations, and surveillance by low-flying unmanned aircraft systems and other reconnaissance platforms.

Cruise missiles also significantly threaten maritime operations because their low trajectory challenges timely detection and effective defense. During the 2006 Second Lebanon War, Hizballah fired a Chinese-made, Iranian-supplied C-802 surface-to-sea antiship cruise missile at the INS *Hanit*, an Israeli Sa'ar 5-class corvette patrolling the Lebanese coast 16 kilometers from the shore.[25] The missile struck the corvette, killing four sailors and severely damaging the ship.[26] In the future, VNSAs might use cruise missiles in the global commons to contest U.S. power projection capabilities and joint force maritime access to forward areas of operations, affecting deployment and sustainment efforts. VNSAs such as Hizballah, Hamas, and ISIL are already using advanced antitank guided missiles (ATGMs) to challenge friendly force freedom of maneuver.[27] The convergence of cyber and electronic warfare capabilities in conjunction with VNSA missile attacks could further exacerbate challenges to joint force air and maritime superiority.

VNSAs can also obtain large numbers of rockets and missiles, creating a stand-off capability to attack friendly forces or other high-value targets as well as the capacity to sustain a high volume of attacks. During the 31 days of fighting between Hizballah and Israel in 2006, Hizballah fired an average of approximately 130 rockets per day.[28] Even without high accuracy, large quantities of low-cost rockets can challenge missile defense battle management capabilities, particularly when fired in barrages. Limited active defense capabilities could be stretched to protect military capabilities, critical infrastructure, and population centers, increasing one's reliance on passive defense, attack operations, and IAMD battle management capabilities. While Hizballah and Hamas rockets have increased in quantity and range, they have generally lacked a high degree of accuracy.[29] As a result, the IDF has not had to fire as many of its limited numbers of missile defense interceptors. When VNSAs improve on their accuracy or obtain guided missiles, the IAMD protection challenge will increase tremendously.

U.S. Soldiers with 3rd Battalion, 2nd Air Defense Artillery Regiment, talk after routine inspection of Patriot missile battery at Turkish military base in Gaziantep, Turkey, February 26, 2013 (DOD/Sean M. Worrell)

Israel is a small country surrounded by well-armed VNSAs that have repeatedly attacked it. With the notable exception of the September 11 attacks, the United States homeland historically has been protected from such threats by both oceans and friendly neighbors. However, with VNSAs having increased access to relatively small, portable missile systems (notably MANPADS and ATGMs), the risk that these organizations could develop expeditionary capabilities to expand the battlefield beyond the primary conflict region is growing. Individuals or small teams of terrorists with MANPADS and ATGMs could target airports and seaports in the homeland and at intermediate staging/transit facilities around the world, expanding and complicating IAMD resource allocation and protection considerations. The impact of these actions would not only affect friendly force power projection capabilities, but it could also have a major global economic effect if commercial shipping and air transport are affected.

Ultimately, the proliferation of missiles and related technologies expands the capability of VNSAs to attack vital U.S. interests and to contest U.S. freedom of action globally, thereby increasing the risk of missile attacks both on the battlefield and on the homeland.

Challenges and Capabilities

Although VNSAs have directly threatened Israel's homeland with rocket and missile attacks for decades, the United States, as a global power, faces a different set of challenges for countering these threats. Perhaps the greatest challenge for the United States is to adequately understand the nonstate actors around the world that might threaten U.S. vital interests. Traditional intelligence capabilities are challenged to understand the complex relationships of VNSAs and their networks. First, it is difficult to gain the necessary cultural understanding to appreciate

Iron Dome battery in Ashkelon, Israel, intercepted approximately 8 rockets and BM-21 "Grad" rockets launched from Gaza, April 10, 2011 (Courtesy Israel Defense Forces)

the dynamic connections between the many global, regional, and local VNSAs, proxy actors, state sponsors, and transnational criminal organizations. In Gaza, even when Hamas was the acknowledged governmental authority, other militant organizations opposed to Israel, such as the Palestinian Islamic Jihad (PIJ), the Popular Resistance Committees, the Army of Islam, Tawhid wal' Jihad, and Jund Ansar Allah, all pursued their own goals and in many cases acted independently of Hamas.[30] Second, many of these groups are organized around political, social, and military wings and operate in small cells dispersed among the population. Without a detailed mapping of the target population, it is difficult to gain intelligence on these organizations or to separate their true intent and capabilities from rhetoric.[31] VNSAs are not constrained by the laws or norms of states and will frequently use social media to obfuscate the facts. Ideology-based VNSAs may not have easily identifiable or targetable centers of gravity. Adding to the complexity of intelligence operations are the temporary alliances VNSAs form with other organizations and states to achieve complementary short-term objectives. When multiple extremist groups are operating in a confined battlespace, motives and attribution of VNSA missile attacks could be difficult to determine.

Rebalance Offensive and Defensive Capabilities

As the proliferation of missile technologies to VNSAs increases, the balance of offensive and defensive capabilities required to enable preventive and protective IAMD operations may need to shift. The availability of missile technologies to VNSAs and the development of American and Israeli IAMD capabilities might produce new operational and campaign-level requirements for both offensive and defensive IAMD capabilities. This challenge was revealed in November 2012 by the IDF's successful employment of the Iron Dome missile defense system during Operation *Pillar of Defense*. Although Hamas, PIJ, and other VNSAs fired more than 1,500 rockets and mortars at Israel from Gaza and the Sinai, Israeli officials reported that Iron Dome shot down almost 90 percent of the rockets it engaged.[32] Additionally, Israel's civil defense system of early warning and shelters passively protected its civilian population.[33] As a result, only three Israeli civilians were killed during the conflict.[34] Concurrently, the Israeli air force attacked more than 1,500 targets in Gaza.[35] Ultimately, the success of Israel's IAMD efforts

removed the need and justification for an IDF ground attack into Gaza.[36]

Successful missile defense operations buy valuable time both operationally and strategically. Operationally, they protect key assets while offensive military capabilities are mobilized, deployed, and employed. Strategically, they reduce public pressure on senior political and military decisionmakers. A successful missile defense effort may also reduce the need and justification for ground attacks. If IAMD capabilities prevent friendly casualties, then the option of conducting a ground attack, which carries with it both the greater likelihood of heavy damage to infrastructure and the potential for increased civilian and friendly military casualties, may not be justifiable domestically or internationally. Finally, effective IAMD may help deter missile attacks by changing the VNSA leader's cost-benefit decision calculus.[37]

Countering VNSAs in Urban Areas

VNSAs are also adapting defensively to U.S. and Israeli asymmetric advantages of air superiority, precision engagement, and surveillance/reconnaissance. They are concealing and protecting their missile and command and control capabilities underground among the civilian population in urban areas. VNSAs have used expendable launchers to reduce firing crew exposure and to complicate the friendly force's attack operations decision calculus. By embedding their missile capabilities in urban areas, they try to deter friendly attack operations.

A related issue is the use by VNSAs of civilians as human shields, which can have both a tactical defensive effect and a strategic offensive effect. Defensively, VNSAs can store missiles in schools, religious sites, and other sensitive facilities to prevent friendly attack. However, an offensive strategic effect is achieved if the VNSA can "bait" an attack on missile capabilities at sensitive locations and cause collateral civilian destruction and casualties. News and social media accounts of civilian casualties, whether accurate or not, could strategically influence domestic and international support and legitimacy.

Measuring Progress and Success

Finally, it is difficult to measure progress and success in missile warfare with VNSAs. At the operational and strategic levels, Israel has found that missile warfare with VNSAs lacks a decisive endstate. VNSAs must only show resistance (for example, by periodically firing rockets) and survive attacks to claim victory. Israel has largely measured its strategic success by the length of calm (that is, the period of deterrence) between major conflicts with VNSAs.

Although there are a number of useful tactical and technical metrics of performance for missile defense (for example, the number of rocket attacks per day or the number of civilian casualties), these metrics do not add up to indicate operational or strategic success. A higher level of success might be indicated by a change in the way VNSAs conduct their attacks. For example, Israel's enemies have evolved their primary concept of operations over the years from maneuver warfare (through 1973) to suicide attacks (Second Intifada) and then to missile attacks. If IAMD is successful, then VNSAs will need to adapt, either by seeking a different approach or perhaps by reinterpreting their strategic intent sufficiently to enable a peace agreement. Ultimately, strategic success may not be measured in terms of quantitative offensive or defensive metrics, but rather by the gain or loss of international influence and legitimacy achieved as a result of the holistic efforts of each combatant.

Strategic and Operational Implications for the United States

Broaden IAMD Strategy with "Left of Launch" Focus. The proliferation of missiles and related technologies to VNSAs has significantly extended the threat of attack on U.S. interests well beyond distant battlefields. In light of such ubiquitous VNSA-based threats, the U.S. military should broaden its IAMD strategy and expand its global IAMD coverage requirements to include its homeland bases and deployment infrastructure, worldwide deployment, and logistics lines of communication (including choke points, ports, and staging/logistic bases). Because missile proliferation cannot be prevented, the United States should pursue multinational IAMD cooperatives to share the costs of a regional capability and the value of collective security from a common threat. Such cooperatives should coordinate international and regionally tailored collective IAMD strategies with a main effort focused on preventing VNSAs from obtaining and using missile technologies. Such efforts, collectively known as "left of launch" efforts, should include strengthened counterproliferation, expanded international and regional IAMD security cooperation, more balanced and integrated air and missile defense capabilities, a wider scope of vulnerability assessments, and adaptation to VNSAs' use of human shields.

Strengthen Arms Control Regimes. As the global leader in the value of arms transfer agreements (77.7 percent of all such agreements in 2011), the United States should lead international efforts to strengthen arms control regimes to reduce or limit the proliferation of missiles and related technologies to VNSAs.[38] Such efforts will require greater international cooperation and enforcement mechanisms to reduce smuggling and dissuade violator nations.

Expand Security Cooperation Partnerships. Even with improved arms control, VNSAs will continue to obtain and use missile technologies to terrorize populations and to offset their conventional military disadvantages against states. Therefore, the United States should expand its efforts to develop international and regional security cooperation partnerships for IAMD against common VNSA threats. The Joint IAMD Vision 2020 identifies pursuing policies to leverage partner capabilities as one of its six IAMD imperatives.[39] Specifically, it seeks to build partnerships and establish multilateral agreements to develop "an integrated defensive network of interoperable IAMD systems" that can "leverage cost-sharing and help spread the burden among willing participants."[40] Such an approach should pursue the cooperation

Rockets fired from Gaza toward Israel during Operation *Protective Edge*, July 16, 2014 (Courtesy Israel Defense Forces)

of international stakeholders and regional states with common security interests to dissuade, deter, and, if necessary, preempt or respond to VNSA air and missile threats. Perhaps the most valuable cooperation among international stakeholders and regional partners would be sharing relevant intelligence. In regions where VNSAs have obtained ballistic and cruise missiles, cooperative states should ensure the interoperability and integration of their IAMD battle management systems (for example, command, control, communications, intelligence) and conduct multinational exercises to develop the tactics, techniques, and procedures for their integrated employment. Each nation's IAMD personnel should be trained and ready to plan and employ their capabilities in support of joint and multinational operations. Finally, the U.S. military should address the development and management of personnel capable of manning joint and multinational IAMD positions at all levels.

Increase Integration and Cooperation Among Government Organizations. Within the U.S. Government, there are overlapping authorities and responsibilities among military, law enforcement, and intelligence organizations that also require closer cooperation and better integration. For example, VNSAs use transnational criminal organizations to smuggle missile technologies. Detecting and preventing such smuggling operations at home and abroad could cross organizational boundaries and authorities of all three types of organizations. Therefore, these organizations should jointly examine this cross-functional issue to develop policies and authorities that close vulnerable seams and improve coordination. Further, the counterproliferation capabilities of these organizations should be interoperable and integrated.

Enable Balanced Capabilities to Counter VNSAs with Missile Technologies. Effective missile defense capabilities must be balanced and integrated with offensive capabilities to suppress or destroy VNSA attack capabilities, seize the initiative, and mitigate the operational risks of adaptive adversaries. Achieving the right balance may require trade-off analyses of joint force capabilities using the context of planning scenarios that include the extended VNSA missile threats. Beyond integrating specific IAMD capabilities, intelligence, surveillance, and reconnaissance (ISR), information operations, cyberspace, and electronic warfare capabilities should be integrated with IAMD planning and employment.

Conduct Wide-Ranging Vulnerability Assessments. Increased missile capabilities by violent groups that profess the intent and capability to attack the United States and its global interests will pose a more widespread threat. Such a threat will necessitate wide-ranging vulnerability assessments to ensure key infrastructure and deployment lines of communication are protected. Overseas

base security agreements should be reviewed and revised based on the global and unpredictable nature of some VNSA threats. Force protection postures should be reviewed for the continental United States, intermediate and forward staging areas, and vulnerable transit/choke points in between. War plans should not assume unopposed movement of forces to the conflict area of operations. IAMD protection must start at the homeland and extend to protect bases, ports, strategic choke points, and lines of communication to the area of operations.

Adapt Operations to Counter VNSAs Embedded in Urban Populations. Finally, the U.S. military must adapt its IAMD attack operations to address the VNSAs' evolving concept for protecting their missile technologies from preemptive attacks. With a global trend toward urbanization—50 percent of the world's population lived in cities as of 2008, with this number expected to rise to 75 percent by 2050—it seems more likely that urban warfare will increase.[41] Urban infrastructure, underground facilities, and dense populations could quickly overwhelm a U.S. joint force's capacity. To address the unique challenges in this environment, the joint force must increasingly emphasize the development of ISR, maneuver, and precision engagement capabilities. Increased human intelligence will also be essential. There may be a role for nonlethal weapons, as well as the development of smaller precision-guided munitions capable of being tailored to achieve the desired effects with minimal collateral damage. Finally, international law should be examined concerning VNSA accountability for using human shields.

The proliferation of missiles technologies to VNSAs has expanded the threat of their use well beyond military conflict zones. As a result, the U.S. military should mitigate the risks by broadening its IAMD strategy and extending its global IAMD coverage to protect the military's capability to deploy and sustain its forces in response to global crises. The focus of the IAMD strategy should be on "left of launch" efforts designed to prevent VNSAs' missile attacks and to better protect vital U.S. interests. **JFQ**

Notes

[1] For this article, missile technologies include short-, medium-, and long-range ballistic missiles; antiship and land-attack cruise missiles; rockets; antitank guided missiles; surface-to-air missiles (including man-portable air defense systems); unmanned aerial systems; and the precursor materials, software, and intellectual property for their manufacture.

[2] Alon Ben-David, "No Fatalities in Israel's *Iron Dome* Zone," *Aviation Week and Space Technology*, September 1, 2014.

[3] "MH17 Malaysia plane crash in Ukraine: What we know," *BBC*, September 9, 2014.

[4] Ibid.

[5] "ISIS fighters seen with advanced antiaircraft missiles," *Al-Arabiya News*, October 28, 2014.

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U.S. Paratroopers assigned to 91st Cavalry Regiment, 173rd Airborne Brigade, recover parachutes following jump during airborne exercise with German and Czech counterparts at 7th Army Joint Multinational Training Command's Grafenwoehr Training Area, Germany, October 1, 2014 (U.S. Army/Gertrud Zach)

The Criticality of Collaborative Planning

By Sarah Mussoni, Gert-Jan de Vreede, and Alfred Buckles

In both 2011 and 2012, the Barack Obama administration announced a pivot to the Asia-Pacific region. One of the factors necessitating this pivot was the strained relationship between China and Japan, as well as the U.S. bilateral agreement with Japan to provide security for it. Furthermore, recent disputes over the Senkaku Islands in the East China Sea have placed a premium on how the United States postures to meet its obligations politically and militarily. President Obama confirmed that the U.S.-Japan bilateral security pact applies to the islands. The asymmetric nature of this situation demands a dynamic and flexible planning capability—not one focused only on military operations, but one that also integrates diplomatic, information, military, and economic dimensions of power into a coherent strategy.

The complexity of planning these military operations is exacerbated by the need to quickly respond to new threats and challenges. As such, a 21st-century planning process must be a joint enabler that is flexible, dynamic, adaptable, and collaborative.

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This article focuses on the collaborative aspect of the planning process because collaboration is less about expensive tools that may or may not be or become available, and more about *approach* or even *mindset*. *Collaboration* can be defined as working together to execute a task to achieve an agreed-upon goal. When properly enabled, people can work together toward a goal and combine their expertise, insights, and resources while moving through some process to complete the task.[1] Yet military planning involves challenges due to working in a large, culturally diverse, hierarchical, globally distributed team with existing and emerging inter- and intra-organizational relationships and benefits. Operational benefits of working with such teams can be realized if the members are able to communicate in real time and maintain a shared understanding of commander's intent, strategic objectives, and resources. This shared situational awareness must be maintained in a highly dynamic setting.[2] The loss of shared understanding due to stovepiping or bottlenecking may result in decisions that are inconsistent with overall mission objectives.

We intend to discuss current challenges and proposed changes to the planning processes. Specifically, we present an overall planning framework and introduce the collaboration engineering approach as a way to design repeatable, collaborative planning activities.

Military Planning: Present and Future

Today's joint planning processes were designed during World War I and World War II to support operations of the day that involved sequential events, known (or at least expected) battle rhythms, and extended timelines (see figure 1). This method no longer seems appropriate or in line with changing world conditions that demand shorter decision cycles. The 24-month contingency planning cycle seems too sluggish to keep up with the faster-paced world in which we operate. Past missions and recent exercises demonstrate that off-the-shelf plans are often too static, too difficult to adapt, and too heavily based on assumptions, assessments, forces, and circumstances not encountered during actual crisis situations.[3]

Compounding this already challenging environment, joint planning is largely compartmentalized and authoritarian, perhaps understandably much like the military it supports. The result is often time-consuming adjustments, extended development timelines, and uninformed, less responsive decisionmaking.

In tomorrow's global environment (which could literally be *tomorrow*), there are a multitude of probable regions for serious U.S. national security concern. Any future military planning construct must understand the dynamic nature of the environment in which plans are created and executed as a sort of wiki, where planning artifacts are ever-evolving, the planning environment is inclusive, and the commander's objectives are met. In this future environment, participants can add fidelity and contribute to a common operating picture by continuously updating newly emerging knowledge from a data-rich environment. To achieve this, the collaborative planning process must be defined, accepted, and sold by leadership. These processes will then lead to an architecture that can be used as a blueprint for the development and production of future enabling tools.

The future planning model (see figure 2) is envisioned as a cyclical, collaborative exchange that emphasizes the planning process as being a real-time capability. To do this, multiple procedures must be performed simultaneously with current and relevant information derived from an extensive data-rich environment, in a real-time collaborative network of people and tools that drives the schedule that defines an agile virtual battle rhythm. The cyclical collaborative exchange allows for flexibility in battle rhythm—for instance, being proactive or rapidly responsive rather than waiting for a scheduled meeting. Five critical procedures in the future planning environment lead to relevant, desired outcomes:

- Achieve situational awareness: specific, focused, and inclusive knowledge of anything affecting the plan; continuous and collaborative flows of information for planning.
- Create directive: joint planning objectives, concept plans, operations plans, and concepts of operations derived from current and appropriate portions of the national and defense guidance.
- Assess: understanding the situation, scope, and involved community.
- Decide upon course of action: product resulting from the planning process that is presented to decisionmakers. It can be military, diplomatic, or a combination.
- Execute: carrying out the plan.

Figure 1. Current Military Planning: A Sequential Model

In the future planning environment, situational awareness and shared understanding become the most important inputs to the collaborative planning process. These originate not only from intelligence and diplomatic agencies, but also from across the planning processes and community of interest so that appropriate courses of action can be developed, adjusted, and presented to decisionmakers. The wiki planning process thus creates living and continuously evolving artifacts throughout all phases of the operation.

To realize the future planning process, appropriate collaboration processes

Figure 2. Future Military Planning: A Cyclical Model

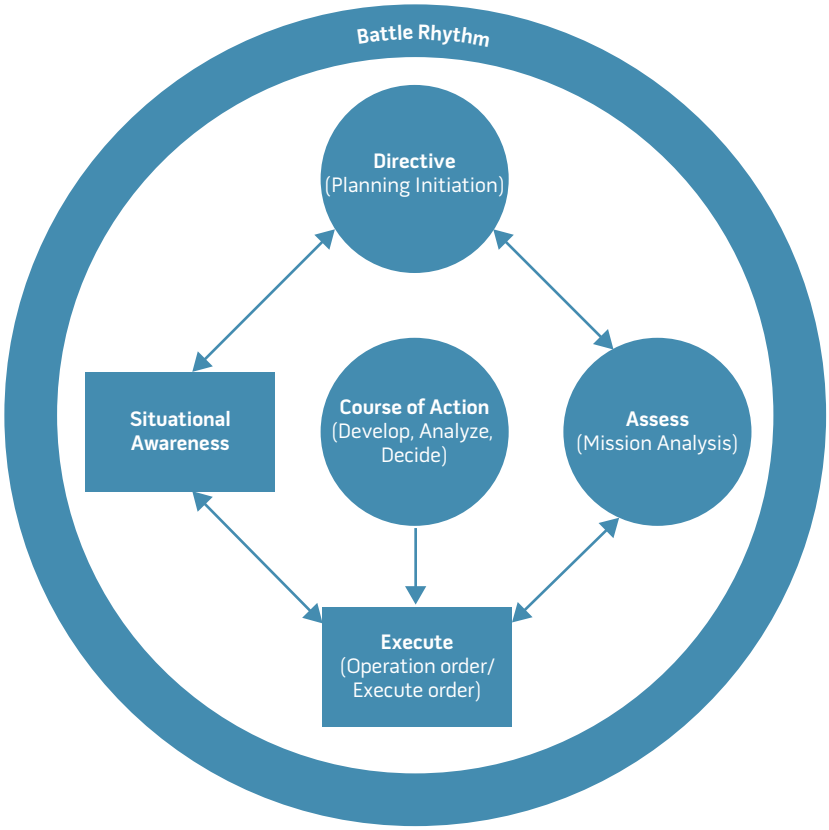


Table 1. Five Patterns of Collaboration

Pattern of Collaboration	Description
Diverge	To move from having.
Converge	To move from having many concepts to having a focus on, and understanding of, the few concepts deemed worthy of further attention.
Organize	To move from having less to more understanding of the relationships among concepts.
Evaluate	To move from less to more understanding of the possible consequences of concepts.
Build Consensus	To move from having less to having more agreement on courses of action.

must be defined and engineered; concepts developed, approved, and applied; and architectures developed for tools to be engineered. At present, there is no common model of how military planners should undertake collaboration. For the most part, collaboration happens by sheer force of will and actions by individual planners to meet a regularly scheduled battle rhythm. We propose that the "collaboration engineering approach" is one viable way to purposefully design operational planning such that it will expedite the quality and quantity of decisions and products and bring about unity of effort among disparate mission partners.

The Collaboration Engineering Approach

Collaboration engineering is an approach to design and deploy collaboration processes and technologies that are then transferred to practitioners to execute without the ongoing intervention of a professional facilitator. It specifically focuses on processes for mission-critical tasks that frequently recur. To design such processes, collaboration engineering recognizes different ways in which people work together toward goals and the best practices to guide them in these efforts. The five distinct forms in which people work together are called patterns of collaboration. Each collaboration process consists of a particular sequence of activities in which one or more patterns of collaboration among team members unfold. To purposefully create a pattern of collaboration during a process activity, a team leader can use facilitation best practices called "thinkLets" (see table 1).

ThinkLets. A central foundation for collaboration engineering is the use of design patterns to support the design and transition of collaborative work practices. Design patterns are composed of named and scripted procedures called thinkLets, which are a best practice for a collaborative task that creates one or more patterns of collaboration. The practitioner uses the thinkLet to evoke a certain pattern of team behavior by means of giving short and simple instructions to the team. For example, a LeafHopper thinkLet allows a team to brainstorm ideas for a collection of topics simultaneously. The LeafHopper thinkLet defines how the team should set up its workspace and what instructions members should receive. In this instance, the team can use a dedicated collaboration tool or a collection of papers on the wall labeled with titles. Instructions are to generate ideas for specific topics, start with the most familiar or interesting topic, and read what others generated and build on those ideas.

ThinkLets represent a menu of "collaboration Legos": they can be combined into best practice collaborative problem-solving processes. When appropriately combined, thinkLets guide team members through a reasoning process of collaboration patterns that allows them to focus all their attention on a single, more manageable reasoning task. During the brainstorming part of the course of action development, a variety of ideas can be generated by means of requiring team members to produce as much information as possible without evaluating. In

Participants of U.S. Army Africa Training Center Capabilities Seminar 2015 receive capability briefing at 7th Army Joint Multinational Training Command in Grafenwoehr, Germany, November 3, 2015 (U.S. Army/Gertrud Zach)

this case, the process of generating ideas is separate from the process of evaluating information, allowing team members to focus their attention on a single task that is uninterrupted by interpersonal discussions.

Each thinkLet has a catchy name to support recognition and memorization of the technique's essence and provide a common lexicon between the private and public sectors. The thinkLet is known only to the practitioner who uses its script as a sequence of things to say and do to evoke the desired pattern of collaboration within the team. Each thinkLet also defines the specific technology that the team must use to execute the script and the configuration of those tools—for example, the tool settings and pre-loaded data. ThinkLets can make use of simple pen and paper technologies or sophisticated technologies, such as a Group Support System (GSS).

Group Support Systems. A GSS is a suite of collaboration tools that support creative problem-solving and co-creation in collocated and distributed teams. It includes the software for electronic brainstorming and electronic voting as well as the methods to accompany the tools and the environment in which the tools are used. More than 2 million people worldwide, including members of the U.S. Army and Navy, have participated in GSS-supported meetings to encourage creative problem-solving toward a common goal or task. Extensive case studies have shown that a GSS can reduce project labor costs and calendar days required for completion by over 50 percent.[4]

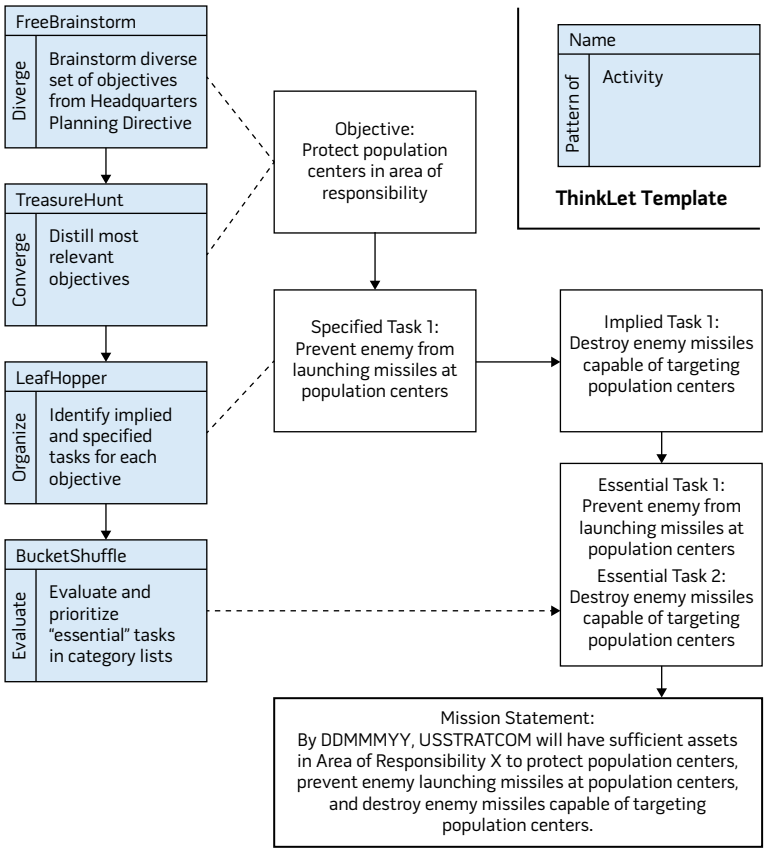
The GSS supports a team along four fundamental dimensions (communication, deliberation, information support, and goal congruence) to help address some common challenges that may affect team productivity. First, team members communicate ideas and preferences anonymously and in parallel, thus alleviating such challenges as dominance, evaluation apprehension, and ideation production-blocking. Second, teams use a meeting structure that keeps them focused and on time. For example, during a generation task, an electronic brainstorming tool provides each participant with a different electronic page where a single, short idea is entered. The system then randomly sends the page to another participant and brings a page containing someone else's idea. Third, the GSS creates complete records of the electronic discussions, enabling future review and analysis. Finally, features and functions in a GSS encourage the alignment of team and individual goals.

Personnel from the U.S. Army Research Laboratory did a case study on the use of a GSS software tool at the Command and General Staff Officer's

Table 2. Thinklets for Mission Statement Process

ThinkLet Name	Pattern of Collaboration	ThinkLet Purpose
FreeBrainstorm	Diverge	To generate a broad, diverse set of creative ideas in response to a single brainstorm question while being inspired by the contributions of other team members.
TreasureHunt	Converge	To have pairs of team members extract a list of key ideas on assigned topics from a raw set of brainstorming comments.
LeafHopper	Organize	To generate ideas in depth and detail on a set of topics of the team members' own choice.
BucketShuffle	Evaluate	To quickly evaluate prioritization of items within category lists.

Figure 3. Mission Statement Design Process with ThinkLets



Course, the Army's tactics and decision-making course for field grade officers. The software GroupSystems was applied to the 17-step mission analysis process in the Military Decision Making Process (MDMP). The MDMP is sequential, often cumbersome, and complex (and thus intimidating) when applied to today's modern mobile and dynamic battle space. The Army used a GSS for parallel planning to increase the speed and quality of plans through the GroupSystems brainstorming, organizing, and evaluation tools. Many students found that the GSS greatly reduced the time required to complete the mission analysis, improved staff coordination, and resulted in a better product. Students noted that synergism among individuals improved as the tool facilitated staff cross-talk and interaction, which helped students profit from others' ideas and input.[5]

The benefits of and successful experiences with the GSS cannot just be attributed to the tool itself. For a GSS-enabled collaboration effort to succeed, a precise collaboration process has to be carefully crafted. In the collaboration engineering approach, the potential of the GSS is blended with the thinkLets design library to enable such collaboration processes. A thinkLets-based approach to the collaborative creation of the deliverable mission statement is presented next.

Collaboration Engineering for Mission Statement Creation

A key activity of the planning process, whether it follows legacy planning processes or a future dynamic model, is to develop the commander's mission statement. It must be a clear, concise statement of the essential (specified and implied) tasks to be accomplished by the command and the purpose(s) of those tasks. Although several tasks may be identified during the mission analysis phase, the mission statement includes only those that are essential to the overall success of the mission. The tasks that are routine or inherent responsibilities of a commander are not included in the mission statement, which becomes the focus of the commander's and staff's estimates and is reviewed at each step of the process to ensure planning is staying on course. Because of the statement's importance to planning and the frequency with which it is accomplished, a thinkLets-based approach to developing essential tasks is presented below. In this case, the specific product is the mission statement. Since the mission statement is derived from the essential tasks, the thinkLets-based method also creates the objectives and specified and implied tasks that make up the essential tasks.

Process Design. A conceptual design using thinkLets has been created for the development of the mission statement. This process can also be applied to other defense activities such as idea generation during course of action development. Figure 3 shows the notional design and a thinkLets template. A summary of the thinkLets, patterns of collaboration, and purposes is presented in table 2. The

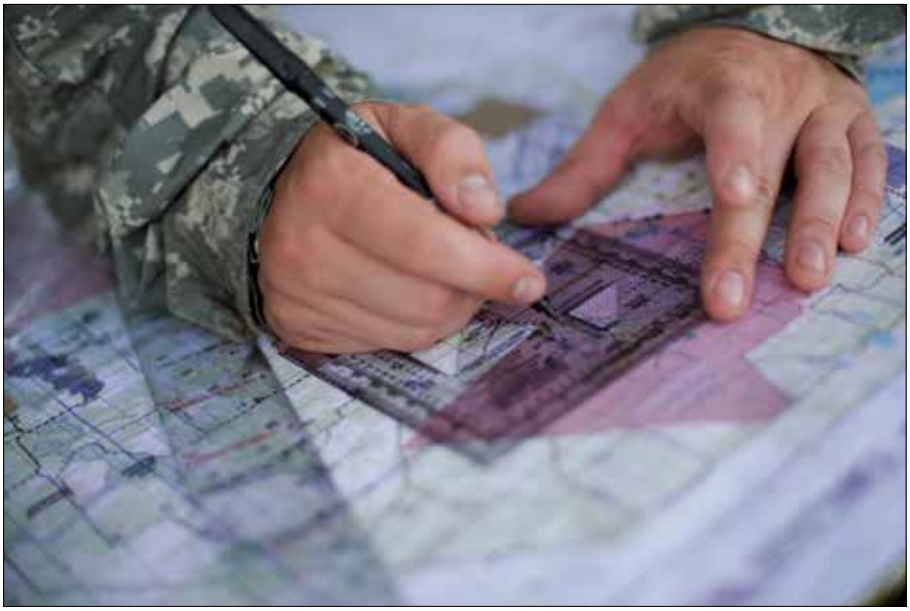
U.S. Marine participates in coordinated beach assault with Portuguese and British counterparts during Exercise Trident Juncture 15, November 4, 2015 (DOD/Chad McMeen)

collaborative process lets a team develop the event's two categories of artifacts: *objectives* prescribe friendly events, and *tasks* describe friendly actions to create desired effects or preclude undesired effects. The artifacts are related; a single objective may have multiple tasks. The design process allows a team to derive objectives and task information in parallel. Furthermore, each artifact can be continuously modified, based on deeper insights as other artifacts are developed.

The process starts with a FreeBrainstorm (diverge) and TreasureHunt (converge) thinkLets sequence to create a list of clearly defined objectives. The team first generates as many objectives as possible, including information concerning their constraints, restraints, assumptions, resources required, and timing considerations. To this end, the team makes contributions in parallel to a number of discussion categories, which display the objectives-related contributions for inspiration to add further detail. Next, using the TreasureHunt thinkLet, pairs of team members extract the most promising objectives from the separate buckets into a central list, rewording them where necessary. The team thus ensures that each objective in the list is clearly defined and unambiguous and that no overlap between objectives exists.

Next, the team uses the LeafHopper thinkLet (organize) to collect information regarding the effects and tasks for the objectives. During this thinkLet, each team member contributes relevant information to the objectives that he or she knows or cares most about so that the team collects a lot of raw information regarding the objectives' tasks. This raw information is processed, consolidated, and prioritized during the BucketShuffle thinkLet (evaluate). During this activity, the team is split into small subgroups of two or three members, and each subgroup becomes responsible for one or more objectives. The subgroups process the raw information by extracting clearly formulated tasks, and, if necessary, by rewording the objectives during this process as well. After each subgroup is done, it reviews the work of the other subgroups, leaves comments, and processes the feedback received on its own work. During this part of the process, it is also possible for directorates, divisions, or components to delineate how they can support the objective conceptually. As mission statement development includes geographically dispersed teams, electronic GSS tools should be applied to connect teams. As the process is conceptual, it should be tested and then compared to the old way of doing business in order to collect data and make improvements.

Metrics. Metrics should be designed and applied to measure the effectiveness



U.S. Soldier with 3-27th Field Artillery Regiment, 2nd Fires Platoon maps target areas during Exercise Dragon Strike at Avon Park Air Force Range, Florida, June 10, 2015 (U.S. Air Force/Dillian Bamman)

of all collaboration engineering efforts. Regarding the conceptual design of the mission statement product, data can be collected from senior leaders, users, developers, and practitioners from surveys, questionnaires, one-on-one interviews, focus groups, or direct observation.[6] Many metrics are also located in systems, records, or databases; hence, if a GSS is used, those metrics can be monitored to compare them to expectations or trends. The quality of the design object can be measured with the following indicators:[7]

- satisfaction of process owner and participants
- quantity of results of the collaboration process
- reusability of the collaboration process
- perceived ease of use of practitioner who leads the effort
- perceived gain in productivity of the collaboration process.

Mission statement development should be measured twice: first, using the current process, and then implementing the collaboration engineering process design in figure 3. Comparing the results will help with process analysis for total process improvement. Metrics help with process analysis in identifying the actual cause of the gap between the expected and actual result (for example, time was longer due to improved quality). As for process improvement, metrics are an important part of determining and ensuring operational success as they show what is working and not working and provide information to make adjustments.

Final Thoughts

Military planning processes are critical yet complex, partly because of the collaborative nature and requirements that they impose on the actors involved. While we do not present the collaboration engineering approach as the single solution for all planning challenges, we argue that it may well provide the concepts and design thinking approach that may improve an evolved planning process, resulting in higher quality deliverables in less time. In fact, both the U.S. Army and Navy have conducted case studies on the implementation of the GSS in their planning processes with successful results, such as increased speed and higher quality of plans. The current data-rich environment places a high demand on planning processes that support the battle rhythm of a collaboration-friendly community. Fresh thinking or a reinvigorated approach seems needed to reengineer legacy processes into adaptive, dynamic, and timely tools for the emerging national security playing field.

Today's complex national security environment requires accelerated decisionmaking by leadership and strong coordination of military operations to respond to emerging threats. The current planning process served its masters well despite being slow, static, and sequential. Now is the time for a paradigm shift to planning processes that are adaptive, dynamic, and timely, based on situational awareness and collaboration in support of everyday missions. **JFQ**

Notes

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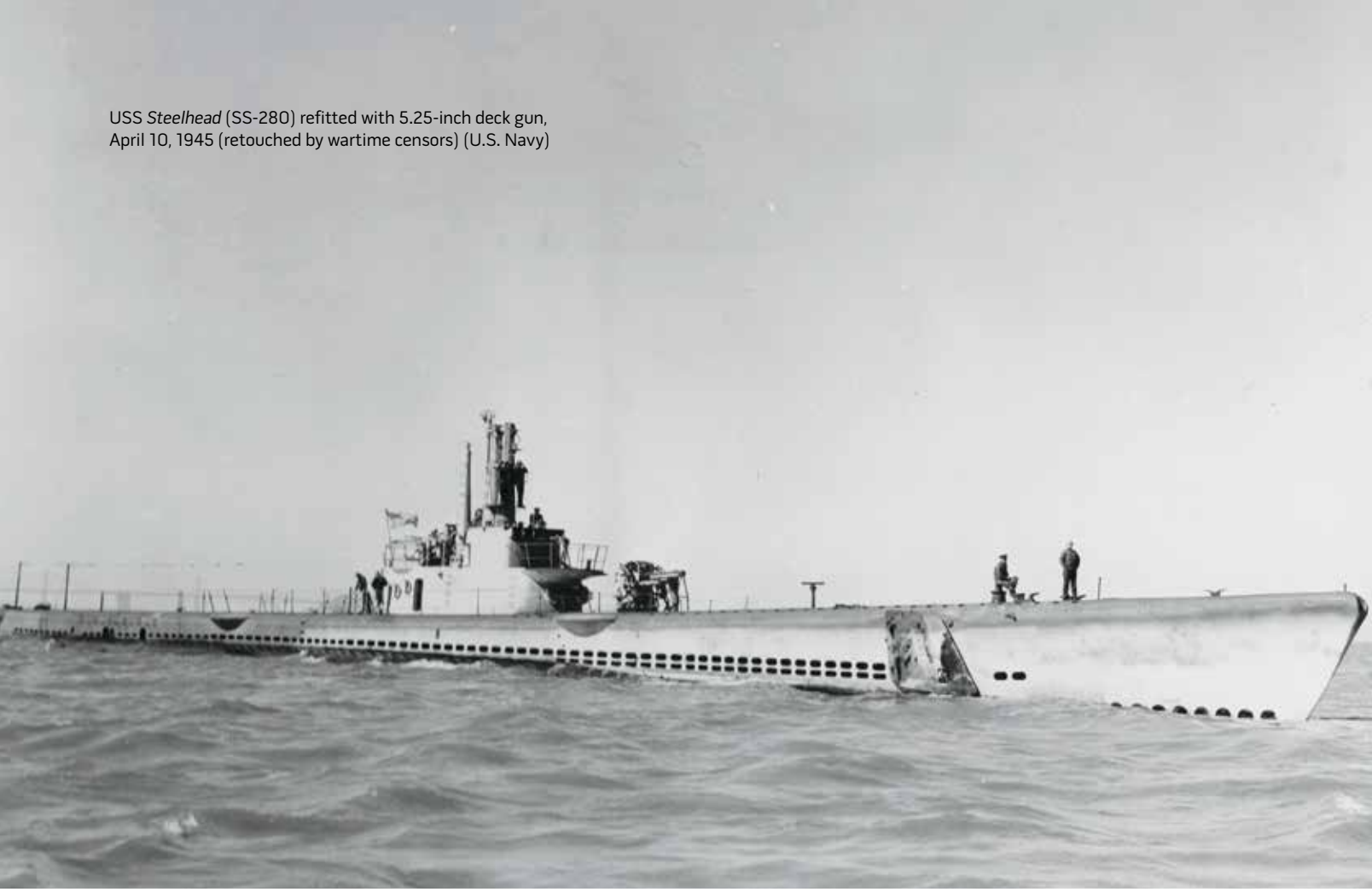

USS *Steelhead* (SS-280) refitted with 5.25-inch deck gun, April 10, 1945 (retouched by wartime censors) (U.S. Navy)

The American Wolf Packs

A Case Study in Wartime Adaptation

By F.G. Hoffman

To paraphrase an often ridiculed comment made by former Secretary of Defense Donald Rumsfeld, you go to war with the joint force you have, not necessarily the joint force you need. While some critics found the quip off base, this is actually a well-grounded historical reality. As one scholar has stressed, "War invariably throws up challenges that require states and their militaries to adapt. Indeed, it is virtually impossible for states and militaries to anticipate all of the problems they will face in war, however much they try to do so."[1] To succeed, most military organizations have to adapt in some way, whether in terms of doctrine, structure, weapons, or tasks.

The Joint Staff's assessment of the last decade of war recognizes this and suggests that U.S. forces can improve upon their capacity to adapt.[2] In particular, that assessment calls for a reinvigoration of lessons learned and shared best practices. But there is much more to truly learning lessons than documenting and sharing experiences immediately after a conflict. If we require an adaptive joint force for the next war, we need a common understanding of what generates rapid learning and adaptability.

The naval Services recently recognized the importance of adaptation. The latest maritime strategy, signed by the leadership of the U.S. Marine Corps, Navy, and

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Coast Guard, defines the need to create "a true learning competency," including "realistic simulation and live, virtual, and constructive scenarios before our people deploy."[3] History teaches that learning does not stop once the fleet deploys and that a true learning competency is based not only on games, drills, and simulations but also on a culture that accepts learning and adaptation as part of war.

This lesson is ably demonstrated by the Navy's refinement of wolf pack tactics during the Pacific campaign of World War II. The tragic story of defects in U.S. torpedoes is well known, but the Navy's reluctant adoption of the German U-boat tactics against convoys is not often studied.[4] There are lessons in this case study for our joint warfighting community.

The success of the U.S. submarine force in the Pacific is a familiar story. The Sailors of the submarine fleet comprised just 2 percent of the total of U.S. naval manpower, but their boats accounted for 55 percent of all Japanese shipping losses in the war. The 1,300 ships lost included 20 major naval combatants (8 carriers, 1 battleship, and 11 cruisers). Japanese shipping lost 5.5 million tons of cargo, with U.S. submarines accounting for almost 5 million tons.[5] This exceeded the total sunk by the Navy's surface vessels, its carriers, and the U.S. Army Air Corps bombers combined. By August 1944, the Japanese merchant marine was in tatters and unable to support the needs of the civilian economy.[6] The submarine campaign (aided by other joint means) thoroughly crippled the Japanese economy.[7]

This critical contribution was not foreseen during the vaunted war games held in the Naval War College's Sims Hall or during the annual fleet exercises in the decades preceding the war. Perhaps the Navy hoped to ambush some Japanese navy ships, but the damage to Japanese sea lines of communication was barely studied and never gamed, much less practiced. A blockade employing surface and submarine forces was supposed to be the culminating phase of War Plan Orange, the strategic plan for the Pacific, but it was never expected to be the opening component of U.S. strategy. Submarines were to be used as scouts to identify the enemy's battle fleet so the modern dreadnoughts and carrier task forces could attack. Alfred Thayer Mahan had eschewed war against commerce, or *guerre de course*, in his lectures, and his ghost haunted the Navy's plans for "decisive battles."[8]

The postwar assessment from inside the submarine community was telling: "Neither by training nor indoctrination was the U.S. Submarine Force readied for unrestricted warfare."[9] Rather than supporting a campaign of cataclysmic salvos by battleships or opposing battle lines of carrier groups, theirs was a war of attrition enabled by continuous learning and adaptation to create the competencies needed for ultimate success. This learning was not confined to material fixes and technical improvements. The story of the torpedo deficiencies that plagued the fleet in the first 18 months of the Pacific war has been told repeatedly, but the development of the Navy's own wolf pack tactics is not as familiar a tale. Yet this became one of the key adaptations that enabled the Silent Service to wreak such havoc upon the Japanese war effort. Ironically, a Navy that dismissed commerce raiding, and invested little intellectual effort in studying it, proved ruthlessly effective at pursuing it.[10]

Learning Culture

One of the Navy's secret weapons in the interwar era was its learning culture, part of which was Newport's rigorous education program coupled with war games and simulations. The interaction between the Naval War College and the fleet served to cycle innovative ideas among theorists, strategists, and operators. A tight process of research, strategic concepts, operational simulations, and exercises linked innovative ideas with the realities of naval warfare. The Navy's Fleet Exercises (FLEXs) were a combination of training and experimentation in innovative tactics and technologies.[11] Framed against a clear and explicit operational problem, these FLEXs were conducted under unscripted conditions with opposing sides. Rules were established for evaluating performance and effectiveness, and umpires were assigned to regulate the contest and gauge success at these once-a-year evolutions.

Conceptually framed by war games, these exercises became the "enforcers of strategic realism."[12] They provided the Navy's operational leaders with a realistic laboratory to test steel ships at sea instead of cardboard markers on the floor at Sims Hall. Unlike so many "live" exercises today, these were remarkably free-play, unscripted battle experiments. The fleet's performance was rigorously explored, critiqued, and ultimately refined by the men who would actually implement War Plan Orange.[13] Both the games and exercises "provided a medium that facilitated the transmission of lessons learned, nurtured organizational memory and reinforced the Navy's organizational ethos."[14] Brutally candid postexercise critiques occurred in open forums in which junior and senior officers examined moves and countermoves. These reflected the Navy's culture of tackling operational problems in an intellectual, honest, and transparent manner. The Navy benefited from the low-cost "failures" from these exercises.[15]

Limitations of Peacetime

The exercises, however, had peacetime artificialities that reduced realism and retarded the development of the submarine. These severely limited Navy submarine offensive operations in the early part of World War II.[16] With extensive naval aviation participation, the exercises convinced the fleet that submarines were easily found from the air. Thus, the importance of avoiding detection, either from the air or in approaches, became paramount. In the run-up to the war, the Asiatic Squadron commander threatened the relief of submarine commanders if their periscopes were even sighted in exercises or drills.[17] This belief in the need for extreme stealth led to the development of and reliance on submerged attack techniques that required commanders to identify and attack targets from under water based entirely on sound bearings. Given the quality of sound detection and sonar technologies of the time, this was a precariously limited tactic of dubious effectiveness.

Torpedoed Japanese destroyer IJN *Yamakaze* photographed through periscope of USS *Nautilus*, June 25, 1942 (U.S. Navy)

Technological limitations restricted the Navy's appreciation for what the submarine could do. The Navy's operational plans were dominated by high-speed carrier groups and battleships operating at no less than 17 to 20 knots for extended periods, but the Navy's interwar boats could not keep pace. They were capable of 12 knots on the surface and half that when submerged. They would be far in the wake of the fleet during extended operations. This inadvertently promoted plans to use submarines for more independent operations, which eventually became the mode employed against Japanese commercial shipping in the opening years of the war.

Though they were a highly valuable source of insights at the fleet and campaign levels, the FLEXs had not enforced operational or tactical realism for the submarine crews at the tactical/procedural level. In fact, a generation of crews never heard a live torpedo detonated, proving a perfect match for a generation of torpedoes that were never tested.[18] Nor did the Navy practice night attacks in peacetime, although it was quite evident well before Pearl Harbor that German night surface attacks were effective.[19] Worse, operating at night was deemed unsafe, and thus night training was overlooked before the war.[20] The submarine community's official history found that the "lack of night experience saddled the American submariners entering the war with a heavy cargo of unsolved combat problems."[21] Once the war began, however, the old tactics had to be quickly discarded, and new attack techniques had to be learned in contact.

Overall, while invaluable for exploring naval aviation's growing capability, the exercises induced conservative tactics and risk avoidance in the submarine world that were at odds with what the Navy would eventually need in the Pacific. As one Sailor-scholar observed:

> *Submarines were to be confined to service as scouts and "ambushers." They were placed under restrictive operating conditions when exercising with surface ships. Years of neglect led to the erosion of tactical expertise and the "calculated recklessness" needed in a successful submarine commander. In its place emerged a pandemic of excessive cautiousness, which spread from the operational realm into the psychology of the submarine community.*[22]

Unrestricted Warfare

Ultimately, as conflict began to look likely, with a correlation of forces not in America's favor, students and strategists at Newport began to study the use of the submarine's offensive striking power by attacking Japan's merchant marine.[23] During the spring semester of 1939, strategists argued for the establishment of "war zones" around the fleet upon commencement of hostilities. These

Chief Torpedoman Donald E. Walters receives Bronze Star for service aboard USS *Parche* (SS-384) (U.S. Navy/Darryl L. Baker)

areas would be a type of diplomatic exclusion zone, ostensibly to support fleet defense during war. However, the proponents' intent was to conduct unrestricted warfare aimed at Japan's long and vulnerable shipping lines.[24]

Yet there was a gap between what submarines could do and what the emergent plans to conduct unrestricted warfare were calling for. Well before Pearl Harbor, the Navy's senior leaders understood that unrestricted warfare was a strategic necessity. However, the implications of this change were not acted upon at lower levels in the Navy in the brief era before Pearl Harbor. Doctrine, training, and ample working torpedoes were all lacking. This created the conditions for operational adaptation under fire later.

The Campaign

Due to an insufficient number of boats, limited doctrine, and faulty torpedoes, the submarine force could not claim great success. By the end of 1942, the Pacific Fleet had sent out 350 patrols. Postwar analyses credit these patrols with 180 ships sunk, with a total of 725,000 tons of cargo.[25] Although this sounds impressive, over the course of the year, the Navy had sunk the same amount as the German U-boats had in just 2 months in the North Atlantic. This level of achievement was against a Japanese navy that had limited anti-submarine warfare (ASW) expertise and little in the way of radar. The damage inflicted had no impact on Japan's import of critical resources and commodities, and the campaign could not be seen as a success. The war's senior submariner, Vice Admiral Charles Lockwood, admitted that the submarine force was operating below its potential contribution.[26]

Tasked with the ruthless elimination of Japanese shipping, the Pacific Fleet was not producing results fast enough. Some of this shortfall was the result of faulty weapons, and some was attributed to the cautious doctrine of the interwar era. Chief of Naval Operations Admiral Ernest King directed a new approach. He wrote to Admiral Chester Nimitz at Pearl Harbor on April 1, 1943, noting that "effectiveness of operations and availability of submarines indicate desirability, even necessity, to form a tactical group of 4 to

6 submarines trained and indoctrinated in coordinated action for operations such as now set up in Solomons, to be stationed singly or in groups in enemy ship approaches to critical areas."[27] Nimitz immediately directed the implementation of King's suggestion.[28] Interestingly, despite his experience combating U-boats in the Atlantic and protecting the vital sea lines of communication to Europe, King was still oriented toward the employment of submarines against Japanese naval combatants. But in line with the pre–Pearl Harbor vision of unrestricted warfare, the U.S. submarine force was following a strategy of attrition against Tokyo's *merchant* shipping, and the Navy submarine force continued to emphasize individual patrols and independent command. They had not been successful in dealing with Japanese warships in critical battles such as Midway. King apparently believed that if they could be properly "trained and indoctrinated in coordinated action," this shortcoming might be rectified.

At the same time, King was fully engaged with responding to German *Kriegsmarine* wolf pack tactics, or *Rudeltaktik*. He was painfully aware how effective they were and was being strongly encouraged by both President Franklin D. Roosevelt and Prime Minister Winston Churchill to adopt defensive measures since the U-boats critically impaired Great Britain's war effort.[29] Moreover, King was aware that the U.S. Navy was not generating the same aggregate tonnage results as the German navy, and he may have concluded that emulating the Germans could produce better results.[30] Lockwood, the commander of Submarine Force Pacific (COMSUBPAC), was certainly well aware of the comparisons; in mid-1942, he wrote that "Germans getting 3 ships a day, Pac not getting one ship."[31] Furthermore, his predecessor as COMSUBPAC issued a five-page summary of German wolf pack tactics via a widely distributed bulletin in January 1943.[32]

Comparisons between theaters may have driven King to propose the shift, but he may have also detected trends in Japanese ASW that would eventually weaken U.S. submarine effectiveness if changes were not put in place. The operational and tactical context facing the submarine force was increasing in complexity. By 1943, Japanese convoys were becoming larger, more organized, and better protected. The escort command was employing more airplanes and newer techniques for detection and attack.

As Lockwood noted in his memoir, collective action was not unknown to the submarine force. Before the war, experiments had attempted simultaneous attacks by several submarines, but communications between boats were not good enough to ensure safety in peacetime operations. These tactics were cursorily explored late in 1941 but were abandoned due to fears of blue-on-blue incidents and limited communications capabilities.[33]

Now, however, conditions were different, radar had been perfected, high-frequency radio phones were installed, and communications were vastly improved.[34] Coordination could be achieved, but the American submariners had little practice at it. The submarine force would have to investigate new tactics on the fly in the midst of the war. (Somewhat ironically, King called for emulating German submarine tactics just as that force was passing the apex of its operational effectiveness. May 1943 was considered the blackest month for the U-boats in the cruel Battle of the Atlantic.[35])

King's message eliminated debate, but the Pacific submarine fleet took its time to interpret fully the doctrinal and tactical implications of the new approach. As a result, the U.S. Navy did not employ the same approach as the Germans. U-boat wolf packs in the Kriegsmarine were ad hoc and fluid. When Admiral Karl Dönitz received intelligence about the location and character of a convoy, he would direct a number of boats to converge on an area where he expected the convoy to be. He would thus direct the assembly of the wolf pack and coordinate its attack from long distance. There was no on-scene commander or collective attack.[36] The U-boats were simply sharks, swarming and attacking at will, or swarming to designated areas when directed. The Atlantic convoys were rather large (30 or more ships), encompassing a relatively wide area. A convergence could bring together as many as a dozen boats swarming around a big convoy but without any on-scene battle management.[37] A single U-boat would be easily driven off, but a pack would not be. They would stalk the merchant shipping and pick off the slowest quarry every time.

King's intervention about collective action proved timely. The Japanese navy did eventually enhance its ASW efforts, employing land-based surveillance, better radars, and more coordination. As the U.S. boats were drawing closer to Japan's home islands, their targets were hugging closer to shallow waters and staying within air coverage. This raised the risk that American submarines would be identified and attacked.

Concerted action by the submarines could offset these changes in the operating context. Singular attacks would draw all the attention of an escort, ensuring that the U.S. boats were driven deep and away from their wounded targets. Coordination by multiple boats would allow continuous pressure on a Japanese shipping convoy and increase the strangulation that Lockwood was aiming to achieve. Multiple threats would distract the convoy's protective screen and generate more opportunities out of each convoy that was found.

The U.S. Navy did not embrace German wolf pack doctrine or terminology; the accepted term for the tactic was *coordinated attack group* (CAG). An innovative submariner, Captain Charles "Swede" Momsen, developed the tactics and commanded the initial U.S. wolf pack in the early fall of 1943.[38] American CAGs would initially have a senior commander on scene, but it would not be one of the boat's skippers, as Lockwood desired to have his older division commanders get wartime experience on boats.[39]

The investigative phase was exhaustive and deliberate over several months. Experienced submarine commanders, not staff officers, developed the required tactics and communication techniques. In an echo of prewar Newport, discussions evolved into small war games on the floor of a converted hotel, which conveniently

had a chessboard floor of black and white tiles. The officers who would conduct these patrols developed their own doctrine and tactics.[40] The staff and prospective boat captains tested various ways both to scout for targets and then to assemble into a fighting force once a convoy was detected. War games, drills, and ultimately at-sea trials were conducted to refine a formal doctrine. Momsen drilled his captains in tactics, planning to have three boats attack successively—one boat making the first attack on a convoy, then acting as a trailer while the other two attacked alternately on either flank. He also developed a simple code for use on the new "Talk Between Ships" system so that boats could communicate with each other without being detected or intercepted by the Japanese.

The American approach rejected the rigid, centralized theater command and ad hoc tactical structure of the Germans.[41] Consistent with its culture, the U.S. Navy took the opposite approach. CAGs comprised three to four boats under a common tactical commander who was present on scene. Unlike the Germans, these attack groups trained and deployed together as a distinctive element. They patrolled in a designated area under a senior commander and followed a generic attack plan. Other than intelligence regarding potential target convoys, orders came from the senior tactical commander on scene and not from the fleet commander. This tactical doctrine called for successive rather than swarming attacks.[42] Subsequently scholars have been critical of these deliberate and sequential attack tactics, which negated surprise and simplified the job of Japanese escorts.[43]

Strangely, there seems to have been little urgency behind COMSUBPAC's doctrinal and organizational adaptation. This top-down direction from afar (from Admiral King) appears to have been resisted until met with bottom-up evidence derived from experienced skippers. In the records of this period, Lockwood appears to be guilty of delaying tactics, but captains John "Babe" Brown and Swede Momsen convinced him to have "a change of heart."[44]

Lockwood and his team at Submarine Force Pacific did not merely take King's directive and implement it. He and the commander of U.S. submarines based in Australia, Rear Admiral Ralph Christie, were not in favor of the change in tactics. In his memoirs, Lockwood noted in a single sentence that he was directed to conduct wolf pack tactics by King. He did apply groups of four to six boats in his packs. And while he did develop the doctrine King tasked them to create, he did not apply it as King desired, against military shipping or approaches to critical operational areas. Instead, Lockwood deployed the CAGs to his ruthless campaign of attrition against Japanese commerce. The developmental process was entirely consistent with bottom-up adaptation. Lockwood was permitted to develop the command and control process, tactics, and training program on his own. Centralized command from Pearl Harbor was rejected, which reflected both the traditional Navy culture of command responsibility and autonomy and Lockwood's appreciation for how Allied direction finding and signals intelligence in the Atlantic were fed by Dönitz's centralized control and extensive communications.

Even after his change of heart, Lockwood and the submarine force took their time to work out the required doctrine and tactics in an intensive investigatory phase. The first attack group, comprised of the *Cero* (SS-225), *Shad* (SS-235), and *Grayback* (SS-208), was not formed until the summer of 1943. Momsen, who had never been on a combat patrol, was the commodore and rode in *Cero*. The pack finished its preparations and deployed from Pearl Harbor in late September on its combat patrol from Midway on October 1, 1943, exactly 6 months to the day from King's message. This was hardly rapid adaptation, given the lessons from both the German success story in the Atlantic and the lack of success in the Pacific.

The initial cruise was deemed a success. Momsen's CAG arrived in the East China Sea on October 6, 1943. It made a single collective attack on a convoy and was credited with sinking five Japanese ships for 88,000 tons and damaging eight more with a gross tonnage of 63,000 tons. While this met the measures of success that Lockwood wanted, the commanders involved were less than enthusiastic. The comments from the participating captains were generally mixed, with many indicating they would prefer to hunt alone rather than as a member of a group. They believed that the problems of communication were technologically unsolvable and that the risk of fratricide was unavoidable. Moreover, commanders preferred operating and attacking alone—consistent with the Navy's traditional culture and the community's enduring preference for independent action (and the rewards that came with it). Momsen, perhaps reflecting an appreciation of the complementing role high-level intelligence could play, recommended centralized command from Pearl Harbor rather than an on-the-scene commander, something Lockwood immediately overruled.[45] But various packs were planned and began training. Ingrained conservatism and fear of firing on a friendly vessel framed the emerging tactics. These in practice emphasized "cooperative search" over collective attack.[46]

The need to explore innovative tactics was directed from the top, but the Navy leadership was patient in letting local leaders figure out the "how." The validity of coordinated action grew on commanders such as Lockwood. Whatever reservations they might have held, the American wolf packs continued during the remainder of the year and were a common tactic during 1944. Unlike Dönitz's Operation *Paukenschlag* (Drumbeat) in the Atlantic in early 1943, Lockwood's force began to win the war of attrition in the Pacific. The success was likely due to the combination of finally having defect-free torpedoes and employing new search tactics. But as Lockwood noted in a tactical bulletin, for the first time, tonnage totals between the German effort and that of the American submarine force "now compare favorably."[47]

One dramatic case gives an example of how effective CAGs could be. In late July 1944, Commander Lawson "Red" Ramage commanded the USS *Parche*, part of a wolf pack labeled

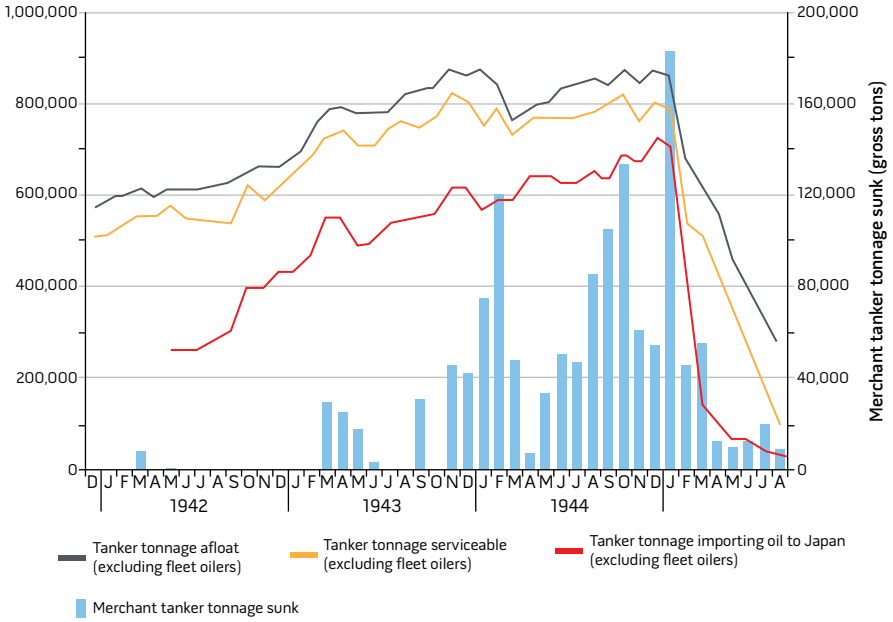
"Park's Pirates" after Captain Lew Parks, also aboard the *Parche*. The Pirates included the USS *Steelhead*, skippered by Lieutenant Commander Dave Whechel, and the USS *Hammerhead*, whose skipper was Commander Jack Martin. After a patch of bad weather and poor radio reporting, the Pirates found their quarry. Although frustrated by miscommunications, Martin identified a large Japanese convoy on the evening of July 30. Although it was a long shot, Parks ordered Ramage to give chase, and for 8 hours the *Parche* chased down the fleeing convoy.

What happened next was a maritime melee. Ramage surfaced inside the convoy in the dark and began a methodical attack, slicing in and around the larger tankers and setting up shots that ranged from only 500 to 800 yards. Ramage's boat passed within 50 feet of one Japanese corvette on an opposite tack that could not depress its guns enough to strike it.[48] The *Parche* was almost rammed once and was subjected to fire from numerous vessels as it raised havoc with the 17 merchant ships and 6 escorts of Convoy MI-11.

Within 34 minutes, Ramage fired 19 torpedoes and got at least 14 hits. Lockwood credited *Parche* with 4 ships sunk and 34,000 tons, while the *Steelhead* got credit for 2 ships of 14,000 tons. Ramage's epic night surface attack earned him the Medal of Honor.[49] His daring rampage was a perfect example of a loosely coordinated attack relying on individual initiative (not unlike a classic U-boat commander's approach in its execution) rather than formal tactics or a set piece approach that failed to overwhelm the escorts.[50]

After mid-1944, there were no major adaptations in submarine warfare during the remainder of the Pacific campaign. Ships, doctrine, training, and weapons were highly effective. In a sense, the U.S. submarine war did not truly begin until the CAGs went to sea in late 1943. Until then, it "had been a learning period, a time of testing, of weeding out, of fixing defects in weapons, strategy, and tactics, of waiting for sufficient numbers of submarines and workable torpedoes."[51] Yet

Figure.



Source: Mick Ryan, "Submarine Operations In The Pacific," *Australian Defence Journal*, 2013, 67.

within a few months, Japan's economic lifeline was in tatters.

Exploiting an increased number of boats and the shorter patrol distances afforded by advanced bases in Guam and Saipan, U.S. patrol numbers increased by 50 percent to 520 patrols in 1944. These patrols fired over 6,000 torpedoes, which had become both functional and plentiful. They sank over 600 ships for nearly 3 million tons of shipping. They reduced Japan's critical imports by 36 percent and cut the merchant fleet in half (from 4.1 million to 2 million tons). While Japanese oil tanker production increased, oil imports dropped severely (see figure).[52]

Lockwood took wolf packs to a new level in 1945. Now a firmly convinced advocate, he carefully planned an operation with nine boats, operating in three wolf packs, that would traverse the heavily mined entrances of the Sea of Japan.[53] The development of an early version of mine-detecting FM sonar allowed boats to detect mines at 700 yards and bypass them. Submarines could now enter mined waters such as the Straits of Tsushima surreptitiously and operate in areas the Japanese mistakenly believed were secure, cutting off the crucial foodstuffs and coal shipments transiting from Korea to Japan. Lockwood's staff meticulously planned this operation, partially motivated by his desire to avenge the loss of the heroic Commander Dudley Morton and the USS *Wahoo* in the northern Sea of Japan in fall 1943. Each of the U.S. boats was fitted with FM sonar, and the crews received detailed training in its use. Once they had made the passage and were at their assigned stations in the Sea of Japan, the submarines, working in groups of three, were scheduled to begin a timed attack throughout the area of operations at sunset on June 9. This collective action group was unique in that, instead of gaining an advantage by concentrating their combat power on a single target or convoy, the Hellcats concentrated as a group for their entrance through the narrow Tsushima and then disaggregated. Their simultaneous but distributed attack was designed to shock the Japanese and overwhelm their ability to respond.

In Operation *Barney*, nine boats led by Captain Earl Hydeman successfully surprised the Japanese and sank 27 vessels in their backyard.[54] But it cost Lockwood one of his own boats, as the USS *Bonefish* under Lieutenant Commander Lawrence Edge was lost with all hands.[55]

Without King's top-down intervention, the adaptation to the use of CAGs may not have been initiated. The success of its adoption, however, was a function of letting local commanders develop their own doctrine. By the end of the war, Lockwood was more enthusiastic about the prospects of the American wolf packs. A total of 65 different wolf packs deployed from Hawaii, and additional groups patrolled out of Australia as well.[56] Ironically, they never focused on King's original intent of serving as ambushers against naval combatants. Instead, the packs remained true to Lockwood's *guerre de course* against Japan's economy.

Cross-Domain Synergies

The historical requirement to adapt in the future may be complicated by the evolving character of modern conflict and the expectation that the joint force will need to gain and exploit cross-domain synergies. The Chairman of the Joint Chiefs of Staff Capstone Concept for Joint Operations (CCJO) is predicated upon creating cross-domain synergies to overcome operational challenges. Another element is to seize, retain, and exploit the initiative in time and across domains.[57] Some of this synergy will no doubt be gained in peacetime through concerted efforts to improve interoperability. But if cross-domain synergy is to "become a core operating concept," as suggested by former Chairman General Martin Dempsey (Ret.) in the CCJO, then we need to also expect to seek out new synergies in wartime.[58] Here again, the submarine case study—with its numerous technological adaptations (surface and air search radars, sonars, and improved torpedoes) and cooperation with signals intelligence and the Army Air Corps—is evidence that trans-domain learning is both necessary and feasible, even in combat conditions.

This raises a set of critical questions about joint adaptation in tomorrow's wars. In future conflicts, how prepared will the joint community be to establish test units and create synergistic combinations on the fly? How prepared are we to actively adapt "under fire" as a joint warfighting community? Do we have the right learning mechanisms to create, harvest, and exploit lessons horizontally across the joint force during combat operations? Such horizontal learning has been crucial in successful examples of adaptation in the past.[59] Based on this case study, and several others conducted in a formal case study of U.S. military operations, the following recommendations are offered.

Leadership Development. Senior officers should understand how enhanced operational performance is tied to collaborative and open command climates in which junior commanders can be creative, and plans and tactics can be challenged or altered. The importance of mission command should not excuse commanders from oversight or learning, from providing support, or from recognizing good or bad practices for absorption into praxis by other units. Professional military education (PME) programs should develop and promote leaders who remain flexible, question existing paradigms, and can work within teams of diverse backgrounds to generate collaboration and greater creativity. Case studies in military adaptation should be part of PME strategic leadership syllabi.

Cultural Flexibility over Doctrinal Compliance. Joint force commanders should instill cultures and command climates that embrace collaborative and creative problem-solving and display a tolerance for free or critical thinking. Cultures that are controlling or doctrinally dogmatic or that reinforce conformity should not be expected to be adaptive. Commanders should learn how to create climates in which ideas and the advocates of new ideas are stimulated rather than simply tolerated. If institutions are to be successful over the long haul or adaptive in adverse circumstances, promoting imaginative thinking and adaptation is a must.

Learning Mechanisms. Commanders should be prepared to use operations assessments to allow themselves to interpret the many signals and forms of feedback that occur in combat situations. If needed, they may elect to create special action teams or exploit formalized learning teams to identify, capture, and harvest examples of successful adaptation. These teams or units might have to be created to experiment with new tactics or technologies. Commanders should codify a standard process to collect lessons from current operations for rapid horizontal sharing. They have to be prepared to translate insights laterally into modified praxis to operational forces and not just institutionalize these lessons for future campaigns via postconflict changes in doctrine, organization, or education.

Dissemination. Commanders should invest time in ensuring that lessons and best practices are shared widely and horizontally in real time to enhance performance and are not just loaded into formal information systems. The Israel Defense Forces are exploring practices that make commanders more conscious about recognizing changes in the operating environment from either their own forces or the opponent.[60] There may be something to practicing learning in this way and making it the responsibility of a commander instead of a special staff officer.

Conclusion

As Ovid suggested long ago, one can learn from one's enemies. The U.S. Navy certainly did. The Service did not just emulate the Kriegsmarine; it improved upon its doctrine with tailored tactics and better command and control capabilities. To do so, Navy submarine leaders had to hold some of their own mental models in suspended animation and experiment in theater with alternative concepts. Lessons were not simply harvested from existing patrols and combat experience and plugged into a Joint Universal Lessons Learned System, as is done today. The submarine force had to carve out the resources, staff, and time to investigate new methods in a holistic way from concept to war games to training against live ships.

Because the eventual role of the Silent Service was not anticipated with great foresight, the Americans had to learn while fighting. They accomplished this with great effectiveness, learning and adapting their tactics, training, and techniques. But the ultimate victory was not due entirely to the strategic planning of

War Plan Orange. Some success must be credited to the adaptation of the intrepid submarine community.

Ultimately, the U.S. Navy's superior organizational learning capacity, while at times painfully slow, was brought to bear. The Navy dominated the seas by the end of World War II, and there is much credit to assign to the strategies developed and tested at the Naval War College and the Fleet Exercises of the interwar era. However, a nod must also be given to the Navy's learning culture of the submarine force during the war. The Service's wartime "organizational learning dominance" was as critical as the foresight in the interwar period.[61] To meet future demands successfully, the ability of our joint force to rapidly create new knowledge and disseminate changes in tactics, doctrine, and hardware will face the same test. JFQ

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[48] Stephen L. Moore, *Battle Surface: Lawson "Red" Ramage and the War Patrols of the USS* Parche (Annapolis, MD: Naval Institute Press, 2011), 116.

[49] Ibid., 110–116.

[50] Padfield, 433. On the engagement, see Moore, 101–118. See also War Patrol Report #2, August 1944, available at <http://issuu.com/hnsa/docs/ss-384_parche>.

[51] Blair, *Silent Victory,* 524.

[52] Ibid., 791–793; Roscoe, 432–433.

[53] The operation is covered in detail in Peter Sasgen, *Hellcats: The Epic Story of World War II's Most Daring Submarine Raid* (New York: Caliber, 2010).

[54] Holmes, 459–461.

[55] NARA, RG 38, Naval Command Files, box 358, "Operation Barney" in *Submarine Bulletin* II, no. 3 (September 1945), 10–16.

[56] See the list at <www.valoratsea.com/wolfpacks.htm>.

[57] "Chairman Releases Plan to Build Joint Force 2020," new release, September 28, 2012, available at <www.defense.gov/news/newsarticle.aspx?id=118043>.

[58] Cross-domain synergy is a key concept in joint concepts such as the Joint Operational Access Concept and the Chairman's Concept for Joint Operations. See *Capstone Concept for Joint Operations, Joint Force 2020* (Washington, DC: The Joint Staff, September 10, 2012), 13.

[59] Robert T. Foley, "A Case Study in Horizontal Military Innovation: The German Army, 1916–1918," *Journal of Strategic Studies* 35, no. 6 (December 2012), 799–827.

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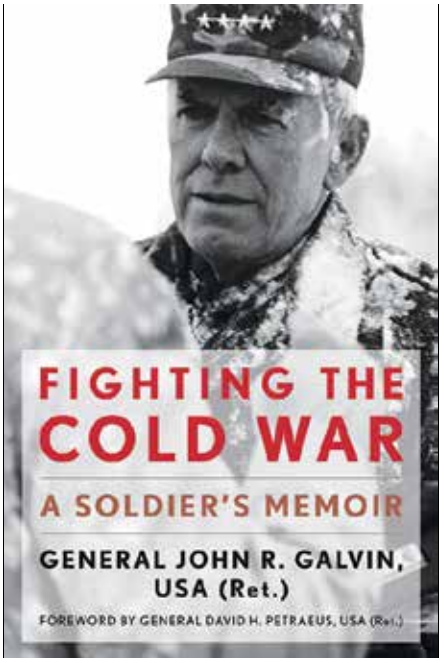

Fighting the Cold War: A Soldier's Memoir

By John R. Galvin
University Press of Kentucky, 2015
532 pp. $39.95
ISBN 978-0813161013

Reviewed by Joseph J. Collins

As the Cold War fades from memory, it is essential that we study its course and absorb its lessons. In that spirit, General John "Jack" Galvin, USA (Ret.), who commanded U.S. Southern Command (USSOUTHCOM) and U.S. European Command (USEUCOM), wrote a memoir, published several months before his death in September 2015, that is both an important lesson in history and a tutorial in strategic leadership. Written by a general who was also a prize-winning author and scholar, it is a delight to read. The real Galvin—son of Boston, family man, soldier-scholar, *mensch*—comes through on every page.

Galvin, who came from a working-class family in Boston, joined the Massachusetts Army National Guard in 1947 and was pushed by his superiors to apply to West Point. He graduated in 1954 with a bachelor of science degree, as well as a fondness for history and literature and a taste for adventure. Not one to follow the crowd, Galvin spent his early assignments in Puerto Rico and teaching at Colombia's *Lancero* School, a Ranger school–type course. Duty in the 101st Airborne Division and the Armor Officer Advanced Course subsequently followed, as did graduate school at Columbia University and a teaching tour at West Point.

Galvin later did two tough combat tours in Vietnam. Remarkably, in his first tour, he was relieved of his duties in combat as a brigade operations officer. Although the relief came at the behest of two powerful figures, Galvin was able to fight his way back and later commanded a battalion in the storied 1st Cavalry Division. Galvin does not mention in the book that he was awarded the Silver Star for gallantry. Most of his other high honors also go unmentioned.

Brigade-level command in Europe and command of a mechanized infantry division followed. In the latter assignment, General Galvin latched on to then-Captain David Petraeus, who appears time and again in the narrative as both a Galvin mentee and an intellectual alter ego. Galvin's closest comrades are a key part of the book, and each of them, like Petraeus, is described in careful detail by the author.

Galvin's senior assignments came as the four-star combatant commander in USSOUTHCOM and later as the Supreme Allied Commander, Europe. His professional contacts in Germany, Latin America, and Spain also grew in rank, and they became a great network. His contacts, education, and empathy made him the ideal general for maneuvering on the political-military terrain. Whether it was Russian generals, German statesmen, Margaret Thatcher, or characters such as Panama's Manuel Noriega, Galvin reveals the people and personalities behind the policy. For example, in detailing his first meeting with Ronald Reagan:

Tall and wide-shouldered, he seemed to take pains not to be overwhelming; he had the gift of being both impressive and unassuming. His hearty handshake and down-home smile made you feel good, and his corny jokes conveyed an assurance that he liked you right away and was truly happy to be talking to you at that moment. His ease cured your un*ease; his ordinariness allowed you room to be* your *ordinary self, too* (p. 296, emphasis in the original).

Nearly one-fourth of Galvin's memoir covers the end of the Cold War during the Reagan years. He artfully showed how the general-statesman navigated political-military issues, lined up the allies, openly consorted with ambassadors, and coordinated with multiple bosses, all while simultaneously developing new warfighting concepts and arms-control proposals. The Cold War was followed not by peace but by the First Gulf War. Again, Galvin's persona and skills shine through as he opened the military coffers of USEUCOM to support General Norman Schwarzkopf's juggernaut, all with the expert help of the North Atlantic Treaty Organization (NATO) nations that turned Europe into U.S. Central Command's rear area. USEUCOM's trained and ready forces played a starring role in the desert war.

After the Gulf War ended, Saddam Hussein began attacking the Kurds. In the spring of 1991, USEUCOM under Galvin came to their rescue and, with the aid of Turkey and many nongovernmental organizations, launched a military rescue mission into northern Iraq. USEUCOM's rescue of the Kurds was a brilliantly executed pick-up game, led by a then-obscure Army Lieutenant General John Shalikashvili. Later, with General Colin Powell's blessing, Shalikashvili became Galvin's successor as NATO Supreme Allied Commander, Europe.

Galvin ended his career by spending nearly a decade in academia, teaching and mentoring at West Point, The Ohio State University, and Tufts University's Fletcher School, where he became the dean. Galvin's military career and educational pursuits are testament to his call for us "to see the workings of our daily lives on a larger scale than our backyards. . . . Our survival in the long run will depend on our recognition of this simple but

powerful understanding: that we need a global perspective" (p. 491).

What accounts for Galvin's success as a strategic leader? Having known him for some years, I am tempted to say that his most astounding trait was that he was a wonderful, thoughtful man, but there must be more. First, Galvin had that global perspective that he preached about. He saw local culture and individuals as very important. He found time to learn German and Spanish well, but with a hint of a Boston accent.

Second, he was a consummate military professional. He could talk tactics with the captains and discuss arms-control proposals with the experts and the eggheads. The details of operational art and the peculiarities of low-intensity conflict were subjects that he mastered. He knew when to stay at a high altitude and when to dive into the details, many of which were recorded on his omnipresent note cards.

Third, like the American eagle, Galvin did not flock. He was his own man. He understood and wrote about the requirements for low-intensity conflict when few in the Army cared about it. Galvin also wrote three books: two on the Revolutionary War and one on modern airmobile operations. Most generals do not have time to do this kind of in-depth intellectual work, but he did. Galvin studied the past for clues to the future, but he could also spot trends that were new factors for analysis. NATO was fortunate to have his leadership during the Mikhail Gorbachev years. Steeped in the Cold War for 40 years, Galvin also knew that change was a constant, even with the Soviet Union. Finally, Galvin saw his mission as including the need to learn from and to teach others, sometimes directly and other times so subtly that they did not notice that it was taking place.

Fighting the Cold War is a big book, but it is worth every minute that you invest in it, whether you are a historian, a student of leadership, a NATO-phile, a USSOUTHCOM staffer, or just interested in the Cold War as seen through the eyes of a general raised in Boston's working class. **JFQ**

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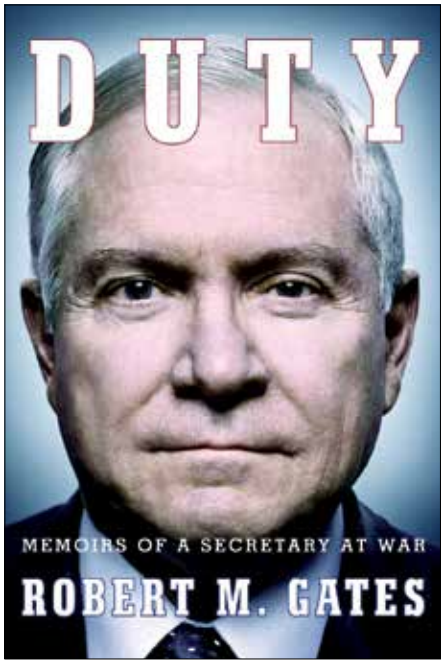

Duty: Memoirs of a Secretary at War

By Robert M. Gates
Borzoi Books and Alfred A. Knopf, 2014
640 pp. $34.95
ISBN 978-0307959478

Reviewed by Thomas F. Lynch III

Duty: Memoirs of a Secretary at War is a valuable work by a unique public figure. Former Secretary Robert M. Gates recounts his 4½ years at the helm of the Department of Defense overseeing two separate wars for first a Republican and then a Democratic President. In this regard, Bob Gates has no peer; he is the only Defense Secretary to serve for consecutive Presidents from opposing political parties.

Gates is no stranger to the business of scribing memoirs. He previously published *From the Shadows: The Ultimate Insider's Story of Five Presidents and How They Won the Cold War* (Simon and Schuster, 2007), recounting his years from 1969 to 1991 in the Central Intelligence Agency (CIA) and on the National Security Council (NSC). While the chronological approach to storytelling is similar to that found in *Shadows*, *Duty* sustains an intense and passionate narrative unrivaled in Gates's 1996 work. *Duty* is a conspicuously rich tome.

It came as little surprise that political passions were aroused by *Duty*'s early-2014 publication. With President Barack Obama still in office, Gates's commentary on the inner workings of security decisionmaking in the final 2 years of the George H. Bush Presidency and the first 2½ years of the Obama administration was bound to generate a noisy and partisan clash. Even before *Duty* hit stores, some labeled it as harsh and highly critical of President Obama and claimed that it painted an antagonistic portrait of a sitting President while failing to note that Gates mainly chided White House counselors while applauding Obama's decisionmaking style. A Republican former defense policy advisor and university scholar wrote that it was less Gates's criticisms that were wrong than his timing.

The politically inspired reviews of *Duty* focused on the superficial and missed the substance. This included the deeply etched lessons of executive-level strategic leadership when engaged in a complex and costly undertaking such as counterinsurgency and counterterrorism operations in two disparate countries with a domestic political dynamic that is anything but collaborative. As the lead agent for the conduct of that undertaking, Gates's assessments tell us a great deal about how difficult an endeavor war is in general and how demanding counterinsurgency operations are in particular.

From the beginning of *Duty*, Gates reminds his reader that he was happily retired from government and ensconced as the president of Texas A&M University before coming to the Pentagon. He had declined an administration feeler about a return to Washington in 2005 to become the first Director of National Intelligence. He had grudgingly accepted a temporary appointment to serve on the Iraq Study Group (ISG) and was often surprised and irritated by what he saw

in Iraq, Kuwait, and elsewhere in that late-2006 venture. Thus, when called on by President Bush to succeed Secretary Donald Rumsfeld after the November 2006 elections, Gates tells us that he took the job largely to show faith with the young men and women in uniform he had met during his ISG travels. He also took the job under the conditions that he would have Presidential support to oversee a temporary troop surge in Iraq, to turn renewed attention to Afghanistan, to support an expanded Army and Marine Corps to properly resource these fights, and to push big-ticket procurement programs into the future to win the wars we were in.

True to Bob Komer's Vietnam narrative of bureaucratic resistance and inertia, the newly minted Gates confronted the challenges of a Pentagon largely running in place, constrained by outside forces and those deep within. Outside the building, he found personal working relationships among the Department of State, National Intelligence Directorate, CIA, and NSC severely strained and in need of serious repair. Gates tackled this challenge on instinct, working with Cabinet-level colleagues suffering from "Rumsfeld fatigue" in a manner that made it clear that the Defense Department would be part of an interagency team pulling together for success in the "wars we are in." Gates supported a full range of authorities for the new U.S. commander in Iraq, General David Petraeus, and encouraged Petraeus's close partnership with the new U.S. Ambassador to Iraq, Ryan Crocker. The Secretary quickly saw the need for a point of fusion for Washington interagency support to a holistic counterinsurgency program in Iraq, offering then–Joint Staff Operations officer Lieutenant General Douglas Lute to the NSC as master coordinator for the Iraq surge in military and civilian efforts. In these and other efforts, Gates was a galvanizing agent with Bush's strategic-level leaders, generating a spirit of collaboration never realized during Vietnam and not before seen during the wars in Iraq or Afghanistan.

Inside the Pentagon, Gates confronted a badly bifurcated culture. In his eyes, too many Air Force and Navy leaders saw the challenge of Iraq as an Army and Marine Corps issue and were satisfied to continue with business as usual. He also saw a labyrinth of procurement and operational bureaucracy lumbering along with historic programmatic concerns and largely unengaged with, if not downright ignorant of, the wars so many young Americans were busy fighting. Here the new Secretary was in for an even harder slog. So he resolved to use every tool at his disposal to change the Pentagon culture.

Gates tells us that he paddle-shocked the Pentagon toward inter-Service teamwork and counterinsurgency focus. Within 3 months, he fired Army Secretary Francis Harvey over a festering scandal over the treatment of wounded soldiers at Walter Reed Army Medical Center. He hired Navy Admiral Michael Mullen as the Chairman of the Joint Chiefs of Staff in late 2007. It was Mullen, then the Chief of Naval Operations, who expressed his greatest leadership concern in early 2007 to be an astoundingly anti-parochial one: the health of the Army. The Secretary then lost confidence in Air Force Secretary Michael Wynne and Chief of Staff General Michael Moseley, who appeared committed to the procurement of an expensive fighter aircraft and seemingly without interest in the ever-deepening counterinsurgency fight. The decline in confidence on these issues was compounded in 2008 when an independent review of Air Force stewardship of its nuclear weapons arsenal revealed serious deficiencies. Gates relieved both.

Finally, the new Secretary grappled with the intransigence of Pentagon bureaucracy. Frustrated with the plodding nature of resource acquisition and planning processes, Gates insisted that newer, sharper programs focus directly on the needs of the troops in the fight. He accelerated funding and attention to the Joint Improvised Explosive Device Defeat Organization, which had been created in February 2006. Programs to improve explosive protection on Soldiers' wheeled vehicles and to use persistent aerial observation platforms to identify threatening explosives caches followed. He also took aim at the most expensive and poorly performing procurement initiatives across the military Services, questioning their relevance and financial sense in public speeches. Gates reminds the reader that he was successful in a number of these procurement-busting endeavors, but success came at a cost to his relations with members of Congress. The Secretary grew increasingly weary of congressional parochialism and theatrics. It is in describing his dealings with Congress that Secretary Gates's memoir becomes most frustrated—if not disgusted—in tone.

In 2007–2008, Secretary Gates put into place the strategic and operational framework for fighting and winning Defense Department components of the counterinsurgency and counterterrorism fights we were in. That framework bore fruit in Iraq before the end of the Bush administration. But *Duty* reminds its reader that success is both relative and fleeting. The effort to extend progress from counterinsurgency in Iraq to the fight in Afghanistan began in 2008 but would await the arrival of a new senior leadership team in early 2009—an Obama administration team with its own personalities and coordination challenges.

Secretary Gates tells the reader that in this new White House, the debate over the way forward in what Presidential candidate Barack Obama had labeled "the good war in Afghanistan" would be unhelpfully bruising throughout 2009 despite its acceptable outcome late that year. While Gates commends President Obama's decisionmaking style in the high-level debate on Afghanistan-Pakistan policy and strategy that dominated 2009, he bridled at the manner in which he felt Vice President Joseph Biden and what he calls the White House "politicos" came to display a paranoid mistrust of the military. Gates recounts that this group of Obama political advisors consistently displayed aversion to any increase in military force growth in Afghanistan beyond that which had been authorized late in the Bush administration. They did not want Afghanistan to become Obama's war and doom the President's domestic agenda in the process. Thus they argued for a

revised American strategy in Afghanistan and Pakistan focused mainly on counterterrorism in Pakistan, an effort to be accomplished exclusively from offshore so that the issues of American ground forces and a more vigorous effort at counterinsurgency in Afghanistan would be moot.

Gates recounts that he was never himself all in for full-up counterinsurgency operations in Afghanistan, but he believed that some of it was necessary. The Secretary's comfort with Obama's late-2009 decision on Afghanistan-Pakistan strategy favoring the Gates approach—one that viewed limited counterinsurgency in Afghanistan as the means to the strategic end—ultimately proved unsatisfying, however. Gates uses *Duty* to call out Vice President Biden, NSC Afghan-Pakistan director Lieutenant General Douglas Lute, and other White House politicos for never accepting the President's decision and for working to sabotage it in the President's mind "before it even got off the ground." It is in this context that Gates writes that by early 2011, he was increasingly confronted with "[a] president [who] doesn't trust his commander, can't stand [Afghan President Hamid] Karzai, doesn't believe in his own strategy and doesn't consider the war to be his . . . a President who was expressing premature doubts about his own strategy."

Out of office for just over 2 years when he wrote it, Gates seems to have intended *Duty*, at least in part, as a vehicle of external caution to President Obama and his advisory team in early 2014. Gates's passion for American men and women in uniform and his belief that their role in Afghanistan deserved the President's continuous full attention—much as it had consumed Gates's attention as Defense Secretary—resonates strongly.

On another level, Gates offers a unique vantage point on the special challenges of executive leadership in both bureaucratic and counterinsurgency warfare. Far from dyspeptic, *Duty* delivers a tone of urgency and commitment that Secretary Gates rightly brought to a trying set of missions at a very trying time. He demonstrates to his reader that he "got it" when it came to achieving results in complex and messy military operations. He got it that the culture of Washington bureaucracy must be energized at the highest levels to get beyond business as usual, for a counterinsurgency fight requires exceptionally detailed coordination that can too easily become passé. He got it that Pentagon culture will snap back into one of a procurement-acquisition-budgeting miasma unless corralled and spurred. Bob Gates also got that change is a difficult but worthy endeavor. He implores both his readers—and those remaining on the Obama security team—to stay the course in Afghanistan and Pakistan and not prematurely pull the plug. In this exhortation, Gates correctly anticipates the unabating worries about U.S. force posture and strategy in Afghanistan that continued to consume the Obama administration throughout 2014 and 2015.

Duty is an excellent memoir of a free-speaking and self-critical former Secretary of Defense. It lays bare the emotional and bureaucratic grit involved with spearheading a complex contingency operation in hostile parallel environments: at home and in the field. *Duty* is an important work and a great read. **JFQ**

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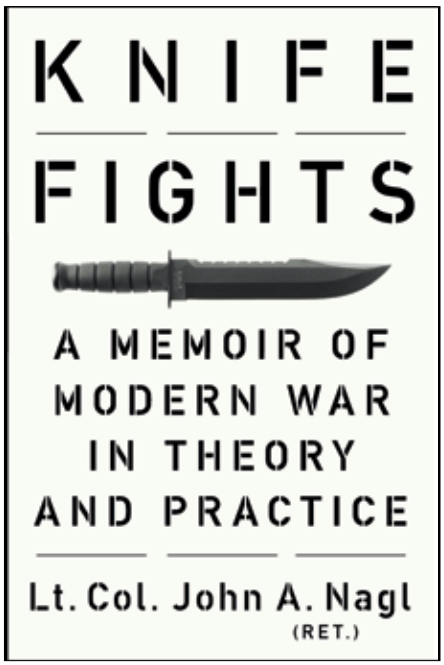

Knife Fights: A Memoir of Modern War in Theory and Practice

By John A. Nagl

Penguin Press, 2014
253 pp. $27.95
ISBN 978-1594204982

Reviewed by Richard McConnell

John Nagl, the author of *Learning to Eat Soup with a Knife*, offers an intimate portrait of the education, experience, and practice that contributed to his emergence as one of the premier advocates of counterinsurgency (COIN) doctrine during the past decade. In *Knife Fights* he provides an unvarnished description of what it is like to advocate doctrinal change to a nation at war.

Nagl begins his story by giving readers vivid and engaging accounts of his early formative experiences: undergraduate studies at West Point, his first combat action during Operation *Desert Storm*, and his graduate and doctoral studies at Oxford. These accounts depict a journey of experience combined with scholarship that laid the foundation for *Learning to Eat Soup with a Knife*. Although Nagl's

experience during *Desert Storm* was with classic conventional warfare, he ultimately became interested in the ambiguous pursuits of counterinsurgency operations. It was at Oxford where Nagl came to believe that U.S. military leaders had walked away from COIN doctrine after Vietnam. This resistance to counterinsurgency operations constituted a hole in U.S. military doctrine waiting to be exploited by our enemies.

Nagl describes what it was like to watch that exploitation happen during his second deployment to Iraq in 2004–2005. He found himself in the unenviable position of attempting to unify practice with the theories he had studied at Oxford and use them against the thinking and adaptive enemies in Anbar Province. This section of the book contains descriptions of the difficulties military leaders faced because of the lack of planning for post-invasion operations. The demobilization of the Iraqi army combined with senior leader refusal to recognize a developing insurgency created opportunities that insurgents exploited. These descriptions will be poignant for readers who may have experienced similar challenges and ambiguities while deployed in Iraq or Afghanistan.

The chapter entitled "COIN Revisited" is one of the most engaging portions of the book. Nagl provides detailed analysis of the last 14 years of COIN theory and practice. Readers interested in understanding the positions of COIN advocates will find this section illuminating as it presents some thoughtful reflections by Nagl. He also provides detailed discussions of the importance of combat advisors in counterinsurgency and the need to provide language and cultural training to succeed. Nagl asserts that because most opponents cannot compete with U.S. conventional capabilities, irregular operations represent the most likely way future opponents will fight our forces. U.S. leaders who do not prepare for such a possibility do so at their own peril.

Knife Fights is a window into the education, experiences, and leader development of a warrior-scholar through two different conflicts over two decades. Few senior U.S. leaders predicted the challenges that would result from the events that began on September 11, 2001. Nagl asserts that the need for ongoing doctrine, training, and leader development to deal with the challenges created by insurgents should have been anticipated. This was not the case, however, because leaders incorrectly assumed that after Vietnam, U.S. forces would never again engage in counterinsurgency operations. The consequences of this mistaken assumption would become all too apparent first in Afghanistan and then in Iraq. According to Nagl, U.S. leaders can ill afford repeating this mistake by discarding the lessons gained over the last 14 years at the cost of so much blood and treasure: "The final tragedy of Iraq and Afghanistan would occur if we again forget the many lessons we have learned about counterinsurgency over the past decade of war, and have to learn them yet again in some future war at the cost of many more American lives" (p. 234). **JFQ**

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Eye exam conducted as part of U.S. Southern Command–sponsored and U.S. Naval Forces Southern Command/U.S. 4th Fleet-conducted Continuing Promise 2015, August 4, 2015 (U.S. Navy/Kameren Guy Hodnett)

Interorganizational Cooperation II of III

The Humanitarian Perspective

By James C. McArthur, Andrew J. Carswell, Jason Cone, Faith M. Chamberlain, John Dyer, Dale Erickson, George E. Katsos, Michael Marx, James Ruf, Lisa Schirch, and Patrick O. Shea

Recent observations from U.S. military involvement in major combat operations in Iraq, counterinsurgency in Afghanistan, and humanitarian assistance in the United States, Haiti, and West Africa provide critical lessons for the Chairman of the Joint Chiefs of Staff to consider for future joint force development.[1] This article is the second in a three-part series on interorganizational cooperation and focuses on the humanitarian perspective. In it, we demonstrate how one particular challenge can adversely impact people, the commonality of

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Table. Comparison of Humanitarian and U.S. Joint Military Principles

Humanitarian Principles	U.S. Joint Military Principles
Humanity: human suffering must be addressed wherever it is found; the purpose of humanitarian action is to protect life and health and ensure respect for human beings	Objective: direct every military operation toward a clearly defined, decisive, and achievable goal
Neutrality: humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious, or ideological nature	Maneuver: place the enemy in a position of disadvantage through the flexible application of combat power
Impartiality: humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress, making no distinction on the basis of nationality, race, gender, religious belief, class, or political opinions	Economy of force: expend minimum essential combat power on secondary efforts to allocate the maximum possible combat power on primary efforts
Independence: humanitarian action must be autonomous from political, economic, military, or other objectives that any actor may hold regarding areas where humanitarian action is being implemented (also known as Operational Independence during activities coordinated by and with the United Nations Office for the Coordination of Humanitarian Affairs)	Unity of command: ensure unity of effort under one responsible commander for every objective
	Security: prevent the enemy from acquiring unexpected advantage
	Surprise: strike at a time or place or in a manner for which the enemy is unprepared
	Simplicity: increase the probability that plans and operations will be executed as intended by preparing clear, uncomplicated plans and concise orders
	Restraint: limit collateral damage and prevent the unnecessary use of force
	Perseverance: ensure the commitment necessary to attain the national strategic endstate
	Legitimacy: maintain legal and moral authority in the conduct of operations

purpose, and organizational processes, namely, the difficulty in achieving a reciprocal mutual understanding of other organizations when seeking cooperation.[2] The following comments from a humanitarian organization executive, made primarily to a military audience at a conference organized by the North Atlantic Treaty Organization (NATO), summarizes the challenge:

I'd like to read you a paragraph from Joint Publication [JP] *3-57 explaining civil-military operations: "The activities of a commander that establish, maintain, influence, or exploit relations between military forces, governmental and* [civilian nongovernmental organizations (NGOs)] . . . *and the neutral or hostile operational area in order to facilitate military operations, to consolidate and achieve U.S. objectives." . . . Such words leave me nervous. They leave all of us . . . nervous. This mutual understanding is important to us. While . . . we may not believe in a unity of purpose, we think that the . . . unity of understanding would be closer to the reality.*[3]

While this issue eventually was addressed in the 2013 revision of JP 3-57, *Civil-Military Operations*, the comments articulate the concerns that humanitarian organizations have with being exploited by military forces and losing the ability to operate safely, as well as the importance of having their equities correctly reflected in U.S. military joint doctrine.[4]

This article features external viewpoints of engagement with the U.S. military from international organizations (IO) with regional influence, such as the United Nations (UN) and NATO, state-aligned intergovernmental organizations (IGOs), NGOs with single or multiple mandates, and treaty-based organizations such as the components of the Red Cross and Red Crescent Movement,[5] all hereafter referred to as "humanitarian organizations." The first article identified interagency challenges in working with the U.S. military.[6] Here, we argue that the inclusion of humanitarian perspectives in joint doctrine would inspire increased candor and cooperation by humanitarian organizations. The final installment of this series will examine existing joint doctrine solutions that could be used to mitigate issues raised by interagency and humanitarian perspectives. The following sections resume the use of the first article's themes and integrate lessons learned to demonstrate the value that humanitarian organizations place on trustworthy relationships cultivated between "people" when building an effective "process" in pursuit of a shared and meaningful "purpose."

People: Understanding Those Who Get Things Done

Mindful communication among people opens doors. In operational spaces, communication could be hampered if there is a lack of respect sensed by either humanitarian or military personnel during an engagement. When U.S. military personnel interact with civilian humanitarian volunteers, aid workers, and staff (hereafter referred to as "humanitarian workers"), an appreciation of the four humanitarian principles—humanity, neutrality, impartiality, and independence (table)—will help facilitate a respectful environment.[7] These principles were formally preserved in two UN General Assembly resolutions and adopted by humanitarian organizations.[8] For reference, the U.S. military also follows its own set of time-tested principles of joint operations (table) captured in joint doctrine (objective, offensive, mass, maneuver, economy of force, unity of command, security, surprise, simplicity, restraint, perseverance, and legitimacy).[9]

These 12 principles were formed around the 9 traditional principles of war, with 3 additional U.S. military principles (restraint, perseverance, and legitimacy) relevant to how the U.S. military uses combat power across the conflict continuum, from peace to war.[10] These two sets of principles arguably guide two vastly different purposes, with the former intended for impartial relief of

human suffering and the latter intended to inform development of a military force for socially sanctioned violence. Understanding differences in each can help set realistic expectations when interaction between the two does occur.

Despite a fundamental incongruity of principles, humanitarian workers and military personnel do in fact have many characteristics in common: willingness to take risks to serve a higher purpose, a culture of doing, the desire to be part of a team, pride in accomplishment, and strong moral commitment. Regardless of these traits, however, the benefit for mutual understanding of the other's approach is derived from a desire for positive outcomes on the affected population and the achievement of organizational goals. The success of communication between armed forces and humanitarian organizations, therefore, is dependent upon mutual respect, awareness of the perceptions created by interaction, an understanding of the parameters of information-sharing, and a reconciliation of terminology.

Mutual Respect. While introductions are important, the first step in cooperation is to call people what they call themselves. For U.S. military personnel, failure to accurately identify humanitarian organizations may create unnecessary barriers in shared operations spaces. Like the U.S. military, humanitarian organizations insist upon distinctions among themselves. For example, U.S. military personnel are taught to refer to the International Committee of the Red Cross (ICRC), International Federation of Red Cross and Red Crescent Societies (IFRC), and national Red Cross societies, such as the American Red Cross (ARC), as either NGOs or IGOs. Although captured in joint doctrine as such, these organizations do not fall under either of these titles. Rather, they are well-recognized, treaty-based organizations founded in international law; the ICRC originated more than 150 years ago, and the IFRC, supported by 189 national societies, including the ARC, was founded nearly 100 years ago.[11]

Perceptions. For humanitarian workers, access to populations in need—and the ability of those populations to obtain life-saving humanitarian assistance—is the highest priority. The unintended consequence of military involvement in civilian tasks or in working with the civilian population may be an erosion of the perceived distinction between humanitarian workers and military personnel. This in turn may result in threats to civilian beneficiaries and humanitarian workers, and may reduce local civilians' trust in relief organizations. With the exception of the ICRC and other specified organizations mandated to work with armed forces and nonstate armed groups throughout an armed conflict, visible interaction between humanitarian organizations and the U.S. military ideally occurs only under exceptional circumstances of insecurity or inaccessibility.[12] A former head of a humanitarian organization provided his experience in a speech about Afghanistan: "Our claim to act independently from our countries of origin, who are so politically and militarily-engaged, is naturally met with strong skepticism by local actors, especially by those hostile to the international intervention."[13]

Humanitarian organizations in Afghanistan expressed concern that coalition forces were occasionally failing to distinguish themselves from the civilian population by driving white civilian vehicles that appeared similar to those used by humanitarian organizations, as well as by wearing civilian clothing. They were also alarmed by the fact that Provincial Reconstruction Teams sometimes placed themselves in civilian concentrations, despite the fact that they may consequently endanger the surrounding population.

Based on global information flow, humanitarian assistance in one part of the world may impact perceptions in another. For example, a humanitarian organization seen as working closely with U.S. forces in a natural disaster response in one country may impact perceptions of the humanitarian neutrality of that organization's activity in a different country affected by armed conflict. U.S. military personnel who are not aware of these perception issues may unknowingly impede the mission of humanitarian organizations.

Information-Sharing. Information-sharing and real dialogue are the foundation of effective civil-military cooperation. Neutral humanitarian organizations are willing to share select information focused on achieving humanitarian goals such as protection of civilians, but not information that might provide a military advantage to any party to an armed conflict. In certain environments, humanitarian organizations share information to deconflict civil and military efforts and to address the security of the local population. However, they will never share sensitive information that endangers human lives or compromises their own impartiality and neutrality.

In many cases, humanitarian organizations will have been operational on the ground prior to the introduction of the U.S. military and can thus provide important information that is normally not available through military channels. This includes historical perspectives on the situation at hand, local cultural practices and political structures, the security situation as it pertains to the protection of civilians, and the role and capabilities of the host nation government. Nevertheless, it is important to respect the neutrality of humanitarian organizations and to avoid creating the perception that they are part of an intelligence-gathering mechanism.[14]

Reconciling Terminology. The use of certain sensitive terms may complicate discourse or cause unnecessary tension within professional relationships, resulting in discord. For example, U.S. military use of the terms *partnership* and *force multiplier* when categorizing humanitarian organizations may undermine neutrality. Where *partnership* is used to describe cooperation with humanitarian organizations, it implies collusion with a political instrument of the state. Humanitarian organizations also strongly object to being called a *force multiplier* by the military, as the term implies a loss of organizational identity, neutrality, and independence through incorporation into a greater military body.[15] One comment by then–Secretary of State Colin Powell is illustrative of this problem and generated the following response from a humanitarian organization:[16]

MH-60S Seahawk from "Golden Falcons" of Helicopter Sea Combat Squadron 12 delivers relief supplies in support of Operation *Damayan* in response to aftermath of Super Typhoon Haiyan/Yolanda, Republic of the Philippines, November 17, 2013 (U.S. Navy/Peter Burghart)

In 2001, no less than Colin Powell proclaimed "NGOs are such a force multiplier for us, such an important part of our combat team." Even more unhelpful, humanitarians have been labeled as sources of information. It should be obvious to you in the military that if we are part of your team, if we are on your side, if we are providing you with information, if we are advancing towards the same goals as you, then we fall directly into the crosshairs of the other side. It's nothing personal, but we can't afford this sort of unity.[17]

The term *humanitarian assistance* may also be problematic. The UN defines *humanitarian assistance* as material or logistical assistance provided for humanitarian purposes, typically in response to humanitarian crises, with the primary objective of saving lives, alleviating suffering, and maintaining human dignity.[18] The U.S. Government recognizes humanitarian assistance in Federal law as assistance "meeting humanitarian needs."[19] Joint doctrine, however, separates that term into *foreign humanitarian assistance*[20] to define a broad set of activities outside the United States and *defense support of civil authorities* for domestic activities.[21] Reconciling terminology is therefore a key element of positive civil-military cooperation.

U.S. military personnel should expect to encounter communication challenges during their interactions with humanitarian workers. Adopting common terms of reference for outreach to humanitarian organizations is therefore essential. Joint military personnel and humanitarian worker participation in training and exercises is a proven method for heightening awareness, building trust, and increasing the effectiveness of coordination in actual emergencies. Through mutual promotion of better understanding of their respective mandates, roles, and responsibilities, both communities can appreciate each other's strengths and communicate more effectively, thereby lessening the need for their respective leaders to direct collaboration.[22]

Purpose: Understanding Goals and Agendas

Humanitarian organizations and the U.S. military ultimately share one overarching goal—that of changing a current condition. When effective coordination takes place, the vital needs of affected populations can be addressed more swiftly and comprehensively. The most critical aspect of effective coordination between these two bodies is context. Relationships and coordination mechanisms vary depend-

ing on the type of crisis, ranging from natural disaster response to other needs created by armed conflict and situations of violence. While the U.S. military is deployed as an arm of American foreign policy and seeks a political outcome, most humanitarian organizations are devoted solely to ameliorating the conditions of vulnerable populations.[23] The core of the humanitarian mandate is to save lives and reduce human suffering, without regard to external political, economic, or military objectives.

Core Principles. As stated, humanitarian organizations are bound by the principles of humanity, neutrality, impartiality, and independence. These principles are derived from international law and are the best defense against claims of favoritism by the parties to armed conflict and other situations of violence.

Humanity is the umbrella term for the imperative to prevent and alleviate suffering wherever it may be found.[24] *Neutrality* means that humanitarian organizations must not take sides. They are more likely to call for and make use of military assets in nonconflict humanitarian environments because the operational implications of such cooperation are less acute. A strict notion of neutrality that fosters and maintains universal trust also requires humanitarian organizations such as the ICRC to interact in good faith with all parties to a conflict, including armed nonstate actors where relevant.[25] *Impartiality* requires humanitarian organizations to protect and assist the victims of armed conflict and other situations of violence without discrimination as to nationality, race, religious beliefs, class, or political opinions. They must endeavor only to relieve suffering, giving priority to the most urgent cases of distress. Impartiality is also rooted in the practical need to engender the acceptance of all communities and warring parties, including criminal gangs, rebel militias, and so-called terrorist groups. As stated by a humanitarian organization executive:

It may surprise you . . . that we have no principled objection to military units delivering aid as part of the war effort. We don't have any principled objection to aid being part of hearts and minds campaigns . . . [but] such aid should not be attached to the term humanitarian.[26]

In addition, humanitarian workers and their actions should be operationally independent from political and military personnel and actions. By virtue of its specific mandate, the ICRC maintains independence in decisionmaking and action while at the same time consulting bilaterally and confidentially with all parties to an armed conflict regarding their obligations under the Law of Armed Conflict and other relevant international laws.[27] One of the many painful lessons from the conflict in Iraq was that violent fringe elements of a local population do not necessarily make such a distinction. This led to the targeting by insurgent groups of foreign nationals working for humanitarian organizations.[28]

Humanitarian Mandates and National Interests. During armed conflict, humanitarian organizations and the military often struggle to coordinate with each other due to different mandates and goals. In Iraq, many humanitarian organizations refused to collaborate with U.S. or coalition forces. They passionately debated the moral and ethical dilemmas of following U.S. troops into a war zone when the conflicts were considered "wars of choice" based on national interests. Some were willing to deploy based on objective humanitarian interests; others were deterred by the political overtones of the conflict.

Tsunami relief in late 2004 around the Indian Ocean rim was largely a positive story. The U.S. military responded to requests from humanitarian organizations for transportation and did not seek to take charge of activities on the ground. Humanitarian workers appreciated that the U.S. military provided such valuable support while permitting them to take the lead in the relief operation.

Time Horizons. Balancing relations in shared operational spaces with or without a shared purpose requires additional effort when different time horizons are involved. Humanitarian organizations provide a range of assistance, from short-term humanitarian aid to longer term development assistance to establish food security, education, health care, and agriculture systems. Single-mandate humanitarian organizations may undertake only short-term emergency humanitarian missions. In contrast, multimandate humanitarian organizations may respond to emergency humanitarian crises as well as to longer term issues of poverty, human development and social justice (also known as development assistance).[29] In contrast to long-term development activities, U.S. military deployment is understood to be short term, goal oriented, and task identified, and will transition based on an exit strategy informed by political objectives. Humanitarian organizations are generally of the view that the U.S. military should not take part in the business of long-term development. When short-term military goals are paired with frequent military staff turnover, cooperation with humanitarian organizations becomes even more challenging.

One major role expected of the U.S. military is to enable more permissive environments for humanitarian organization activities through the restoration of order and security. Among the many potential humanitarian tasks, U.S. military personnel can best contribute through infrastructure support and indirect assistance. Infrastructure support focuses on reestablishing critical humanitarian infrastructure, such as restoring or building bridges, clearing roads, and rehabilitating air and sea ports. Indirect assistance focuses on facilitating the delivery of relief supplies, including logistics, transportation, and the purification and provision of water. However, direct assistance, such as the handing out of food or nonfood items, is best provided by humanitarian organizations, preferably those that have established relationships within local communities.

When a natural disaster occurs within a lethal or uncertain environment (that is, when a military force can be deployed), understanding the context of the emergency is key to establishing and working within humanitarian coordination mechanisms. In 2014, for example, the NGO Doctors Without Borders (*Médecins*

Sans Frontières) publicly called on UN member states that possessed biological threat response capacity to assist in the response to Ebola-affected countries in West Africa.[30] This was an unusual public request from a humanitarian organization that deliberately keeps a distance from military and security agendas to protect its independence in nonpermissive environments. In this case, however, meeting urgent medical needs outweighed the requirements to maintain distance from military personnel.

Process: Understanding Mechanisms and Bureaucracies

Even in the absence of shared objectives between the U.S. military and humanitarian organizations, there is a need on both sides to navigate organizational cultures and bureaucracies to identify commonalities to meet their own internal organizational goals. Adequate logistics support and tactical airlift requirements, such as helicopters and short-takeoff and -landing aircraft, are two areas that challenge humanitarian organizations. Some larger organizations such as the UN and ICRC do maintain an independent logistical capacity both to maintain their self-sufficiency and to preserve the public perception of their independence. The IFRC accepted an offer to use national military assets such as helicopters to evacuate the victims of a major earthquake in Pakistan, as well as an offer to use military ground escorts in West Africa to support the emergency medical evacuation of a suspected Ebola-infected staff member. However, these activities were conducted as a last resort, when no other means were available.[31] Reconciling the bureaucratic systems of military and humanitarian organizations requires an understanding of institutional funding, decisionmaking, and work methodologies.

Funding. The U.S. military is funded by the U.S. Government with taxpayer money. Preplanned budgets or emergency contingency funds with congressional limitations are dictated by the overall objectives of the U.S. Government. Fiscal constraints in times of sequestration or ramp-downs can be addressed through interorganizational cooperation on various levels of planning and execution. In contrast, humanitarian organizations have four basic funding sources: private donors, foundations, corporations, and governments, including that of the United States. Some of these organizations have more reliable revenue streams than others and can predict their funding levels further into the future.

Large well-established organizations that regularly receive money from foundations, corporations, or governments tend to have more reliable revenue streams than smaller ones. In particular, the latter group is more susceptible to economic downturns and donor fatigue.[32] Additionally, organizations that focus on providing humanitarian assistance as part of crisis response may have uneven funding streams because they receive most of their funding only when disaster strikes.[33] Regardless of donations received, humanitarian organizations will often be subject to donor pressures to comply with special requirements such as staff hiring and geographic location.[34] Because banking has transformed from a centralized institution-to-institution process to a decentralized and individually managed system, the ability to gain donations or transfer funds directly to projects around the world has increased exponentially.[35] Nevertheless, the increase of government funding channeled bilaterally, instead of through a multilateral coordination mechanism such as the UN, brings donors closer to operational decisionmaking and to coordination and negotiation with implementing organizations.[36]

Decisionmaking. The organizational structures of the U.S. military and humanitarian organizations such as NGOs are typically polar opposites. Command structures in the military are centralized and vertical, with clear and well-defined lines of authority flowing hierarchically from top to bottom. The chain of command is structured so that it can respond quickly and promote fast and efficient decisionmaking. In comparison, most NGO organizational structures are horizontal, fluid, and reliant upon a consensus-based approach, leaving considerable decision authority to field staff to adjust to sudden changes in humanitarian needs.[37]

Issues including a lack of transparency and an inability to access the U.S. military's decisionmaking and information-sharing processes can create tension between the U.S. military and humanitarian organizations. The broad mission set and needs of the U.S. military make it difficult for humanitarian organizations to identify key points of contact that can speak with authority. Some organizations, such as the ICRC, employ former military officers to bridge the communication gap. In situations where the U.S. military is a supporting organization, it must manage expectations on processes, procedures, and structures. Commanders cannot assume that humanitarian organizational decision cycles will coincide with their own, but they must understand a humanitarian organization's requirements well enough to anticipate when and how to best engage. Along with coordination centers, steering groups, and old-fashioned social interaction, the use and inclusion of qualified liaisons are important to facilitate interorganizational cooperation.[38]

Methods of Work. In the future, U.S. military participation in humanitarian activities is likely to involve support to humanitarian workers who are already in place. Upon deployment, there is a propensity by the U.S. military to design a separate system or structure to address an issue rather than identify what already exists and use that forum. As the U.S. military is generally eager to set up coordination mechanisms quickly, the functions of these structures are often duplicative, and their actual usefulness is questionable. Although there is recognition of the need for a more unified approach to crisis management, it appears that the various entities involved may hold different—indeed, opposing—viewpoints as to what form coordination should take.[39]

Humanitarian organizations such as local, regional, national, and international NGOs are loosely categorized into three different areas or mandates of purpose: humanitarian (providing food and medicine), development (building social

and economic institutions), and peacebuilding (stability activities rebuilding governmental infrastructure). Some are characterized by a mix of these mandates and do not consider humanitarian aid and development assistance as incompatible.[40] However, when humanitarian relief is delivered by the U.S. military as the first responder on the ground, it may not be perceived as productive, as captured in a 2010 report on the Haiti earthquake:

During the initial days of the response, the U.S. military provided humanitarian aid directly to communities in the absence of NGOs and the UN because of the overwhelming needs. . . . While this flexibility was important at that time, direction and required action need to be more specific as a response evolves. This type of humanitarian assistance is not a usual role for the military and requires specific humanitarian expertise such as registration systems, needs-based allocation of aid to avoid social and economic disruptions, and proper targeting of relief to at-risk populations. This led to missions such as food airdrops in urban settings, which can cause rioting, and the establishment of [internally displaced person] *camps without clear support of the local authorities and other partners.*[41]

While some humanitarian organizations raised concerns about the prioritization of flights allowed to land at the Port-au-Prince airport soon after the earthquake, most accepted U.S. military activities as critical to the overall response.

Understanding organizational structures, proactively coordinating, and looking for opportunities to share in the decisionmaking process are the cornerstones of successful interaction. In a natural disaster, the most efficient coordination may be realized through collocating military personnel and humanitarian workers in the same operational facility. This allows for real-time interaction and communication, effective task division based on identified needs and available assets, and joint planning that responds to both emergent needs and the transition of military assets away from the operational area. In an armed conflict or a complex emergency, where military personnel may be a party to the conflict or be perceived as siding with combatants, humanitarian workers may not want to be closely associated with the military and may prefer to have as little visible interaction as possible. While joint operations between humanitarian workers and military personnel will not normally be acceptable, some degree of information-sharing is required to ensure that military operations do not negatively impact access to populations in need and the effectiveness of humanitarian action.

The U.S. Government has also proposed coordination solutions in recent years. The Humanitarian Policy Working Group was initiated to build upon strong existing humanitarian assistance capabilities. Part of this initiative is the Good Humanitarian Donorship, an informal donor forum and network that every 2 years agrees on an agenda that will inform policy discussions. Additionally, the U.S. Civil-Military Working Group facilitated by the U.S. Institute of Peace brings together U.S. government civilian and military departments and international humanitarian organizations to coordinate and inform each other of relevant issues. Similarly, the United Kingdom's NGO-Military Contact Group is a platform for humanitarian organizations, the military, and the government to discuss issues and enhance mutual understanding.

At the global level, the UN Office for the Coordination of Humanitarian Affairs (UNOCHA) determines strategies for humanitarian response and serves as the secretariat for the Consultative Group for Humanitarian Civil-Military Coordination, which focuses on bringing together humanitarian organizations and militaries under the framework of the Asia-Pacific Conferences on Military Assistance to Disaster Relief Operations. Other such working groups and voluntary organizations exist across the IGO humanitarian landscape as well. The UN Inter-Agency Standing Committee, for example, is a unique strategic interagency forum for coordination, policy development, and decisionmaking.[42] Lastly, the UN cluster system provides operational and tactical coordination and decisionmaking structures to enhance humanitarian response capacity, predictability, accountability, and partnership.[43]

Conclusion

As U.S. military personnel engage in diverse humanitarian aid or relief operations, their efforts are more effective when coordination is grounded in trust-based relationships. When required, the U.S. military should operate only in support of humanitarian efforts. Additionally, it should serve in a lead role only as a last resort and in extremis. U.S. forces can best be used in logistical support when no humanitarian capability exists and where infrastructure is damaged or destroyed. Commonly required military assets may be identified by various planning tools such as the gap-fit analysis matrix developed by the Consultative Group for Humanitarian Civil-Military Coordination. When the U.S. military does participate in humanitarian activities, its leadership should enhance existing coordination mechanisms by assigning qualified liaisons to all relevant organizations, including Humanitarian Military Operations Coordination Centers in natural disaster responses coordinated by UNOCHA.

Both humanitarian workers and military personnel benefit from enhanced understanding of the respective roles and missions of each. Joint training, participation in exercises, and input into the doctrine and guidance of each assist in establishing mutual understanding, trust, and rapport. Although some situations may involve unavoidable friction with the military, humanitarian organizations can ultimately derive benefit to their own goals by becoming more involved in the development of U.S. military joint doctrine. As a matter of routine, deconfliction of roles and mutually efficient operations can be improved only when all parties have a clear institutional understanding of the mandates, objectives, and methods used by others who operate in the same space. It may be time to bridge humanitarian and U.S. military joint operations principles through a new principle reflected in policy and joint doctrine: unity of understanding.

The third and final installment of the Interorganizational Cooperation series will extract issues identified from previous articles. It will then review existing joint doctrine that can be used to address those issues as well as suggest new potential doctrinal solutions. JFQ

Notes

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[23] Lawry, 201.

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Explosive ordnance disposal technician, 11th Civil Engineer Squadron, prepares to dispose of IED as part of Operation *Llama Fury*, August 25, 2015 (U.S. Air Force/Brittain Crolley)

The Enduring IED Problem

Why We Need Doctrine

By Marc Tranchemontagne

I sometimes hear people express the hope that the IED threat will diminish as Western forces pull out of Afghanistan. Unfortunately, nothing could be further from the truth—the IED has now entered the standard repertoire of irregular forces in urban areas across the planet, and there are no signs this threat is shrinking; on the contrary, it seems to be growing.

—David Kilcullen, *Out of the Mountains*

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As the Services and joint force update their doctrine after nearly a decade and a half of counter–improvised explosive device (IED) operations in the Middle East, Africa, and Asia, now is a good time to consider what we have learned about operating in IED-rich environments. At the start of Operation *Enduring Freedom* in 2001, we lacked counter-IED doc-

trine—as well as counterinsurgency and counterterrorism doctrine—and had to figure things out on the fly. It was a steep learning curve with a high cost in lives lost and equipment destroyed, and the United States spent billions to counter a weapon that costs only a few dollars to make.

In addition to counter-IED doctrine and assorted handbooks, manuals, and lexicons, we created rapid acquisition authorities, notably the Joint IED Defeat Organization, now a combat support agency; new countermeasures such as counter-radio-controlled IED electronic warfare (CREW) systems; a new intelligence process (weapons technical intelligence [WTI]); counter-IED task forces and other ad hoc units such as the Joint CREW Composite Squadron, Task Force ODIN, weapons intelligence teams, and deployable counter-IED laboratories; law enforcement, interagency, and international partnerships; universal counter-IED training and specialized courses in homemade explosives (HME), post-blast investigation, and IED electronics; counter-IED working groups and other new staff elements; new families of armored vehicles; and many innovative tools to meet the IED threat.[1] Some initiatives have been incorporated into doctrine or have become programs of record, some have been shelved, and others remain ad hoc. As a joint force, it is important to institutionalize what we have learned from hard experience in IED-rich environments.

IEDs affect how we fight, that is, how we plan for and execute joint operations. Operating in an IED-rich environment creates additional challenges for U.S. forces, just as operating in a chemical warfare environment would. Operation *Iraqi Freedom* may represent the worst case for an IED-rich environment, with numerous experienced, technology-savvy, externally supported violent extremist organizations (VEO) with overlapping and competing sectarian, nationalist, and international agendas in a developed theater. Future operating environments, however, may match its complexity and lethality. Today's bomb makers will take their experience and expertise to other battlefields. Even in a conventional war, our adversaries are likely to turn to unconventional warfare tactics, using a mix of special forces, paramilitary units, militias, and surrogates to counter our military superiority. IEDs will figure in their order of battle.

Although IEDs are more closely associated with irregular warfare, they have been used in every modern conflict, often on a large scale as a matter of policy and doctrine. Explosive booby traps were used extensively in World War I by both sides, but that story is eclipsed by the overwhelming carnage caused by artillery, machine guns, and gas in that war. British, Australian, and New Zealand troops, for example, covered their withdrawal from Gallipoli by booby-trapping their trenches and abandoned stores to obstruct pursuit by Turkish forces.[2] During the Korean War, North Korean troops, following Chinese and Soviet doctrine of the era, saturated areas that they abandoned with mines and booby traps.[3] IEDs, mines, and booby traps were such problems in World War II, Korea, and Vietnam that the Services issued numerous field manuals and handbooks to prepare deploying forces to deal with them. One of the earliest counter-IED pamphlets, *German Ruses*, was published in 1917. Its warnings remain valid today.[4]

What Are IEDs?

The term *improvised explosive device*—a weapon that is fabricated or emplaced in an unconventional manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals designed to kill, destroy, incapacitate, harass, deny mobility, or distract—covers a wide range of explosive hazards, including roadside bombs and explosive booby traps.[5] At a minimum, an IED is made up of an explosive charge and a means of setting it off. Typically, however, IEDs have five components: a container, a main charge, an initiator, a switch, and a power source. Some include enhancements such as additional fragmentation or pyrophoric, chemical, biological, and radiological materials, which increase the bomb's lethality or its explosive, incendiary, or psychological effect. Explosively formed penetrators and shaped charges incorporate special liners that focus the explosive's energy, allowing it to penetrate armor. Many IEDs incorporate military munitions or commercial components.

The IED is frequently referred to as the *weapon of choice* of threat networks globally. However, this expression does not bear scrutiny. The *weapon of choice* construction has two implications: first, that the user has a choice of weapons and that among those choices the IED is preferred, and second, that the user can choose to use or not use IEDs, as in "Afghanistan is a *war of necessity* but Iraq is a *war of choice*." The first implication is simply untrue, and the second does little to further our understanding of the IED problem. Like *weapon of influence*, *weapon of concern*, *weapon of interest*, *war of necessity*, and dozens of other inelegant constructions using *of*, *weapon of choice* is an uninspired kluge whose meaning is too ambiguous to help us understand the IED problem. The term ought to be retired, especially in policy, doctrine, and other thoughtful writing. Not only is the syntax poor and the meaning imprecise, but it also has become a cliché and a poor substitute for critical thinking. The words we use matter because they frame how we think about and solve operational problems.

When terrorists have a choice of weapons, the IED is not always preferred. Conversely, when terrorists have limited alternatives, the IED is often merely the best choice available. Threat networks might choose other weapons for a variety of practical, social, or cultural reasons: al Qaeda used airplanes in the September 11 attacks, al Shabaab gunmen used small arms to attack the Westgate shopping mall in Nairobi, Kenya, in September 2013, and Hutu militants used mostly machetes to kill nearly 1 million Tutsis during the Rwandan genocide in 1994. In the United States, it is much easier to buy guns than it is to purchase explosives or many of the precursor chemicals needed for making them. Many groups would certainly choose other weapons—for example, man-portable anti-aircraft

missiles and anti-armor rockets, chemical and biological weapons, mortars and other indirect-fire weapons, or computer viruses—if they were available. Suicide IEDs were pioneered by the secular Tamil Tigers in Sri Lanka in the 1980s, and today are used by many radical Islamic groups. In spite of their effectiveness, however, their appeal is far from universal.[6] There are many reasons for threat networks to rely on IEDs, including avoiding the potential constraints imposed by a state sponsor, achieving rough parity with better-equipped government forces, inspiring fear, and attracting media attention. These factors, however, do not make IEDs *necessarily* the weapon of choice. In contemplating future contingencies, we ought to consider the circumstances in which using IEDs would be an attractive option for our adversaries.

The phrase *weapon of strategic influence* also should be scrapped. A weapon is a weapon, and it is how a weapon is used that gives it its strategic influence. Other weapons have just as much strategic utility. Shoulder-fired Stinger missiles helped hasten the Soviet withdrawal from Afghanistan during the Soviet-Afghan War from 1979–1989, and an assassin wielding a pistol murdered Archduke Franz Ferdinand of Austria in June 1914, triggering World War I. It is not the IED itself that is strategic but the terrorist act for which it is used. Terrorism is always a political act—usually aimed at coercing governments or populations—and therefore of a strategic nature. It is terror that is strategic; IEDs are merely another means of terrorizing.

Why IEDs?

Like any other weapon, IEDs can be used for various strategic, operational, and tactical purposes. IEDs are different from conventional weapons, however, in important ways that make them appealing to a range of adversaries. These differences include the following:

- ease and low cost of fabrication using commercially available materials, which makes them cost effective and allows nonstate actors to operate without state sponsorship
- lethality, which compensates for a lack of more powerful conventional weapons
- variability in design, which makes developing countermeasures and countervailing tactics difficult
- adaptability to the operating environment, which makes IEDs more versatile and difficult to detect
- scalability, which allows terrorists to modulate their level of violence
- deniability, which appeals to actors who wish to avoid attribution
- low risk to the bomber relative to other means of attack, such as ambushes and raids
- operational effects on movement and maneuver and force protection
- strategic and psychological effects generated by the high publicity that IED attacks garner.

At the strategic level of war, IED attacks support our adversary's propaganda, portraying the host nation as impotent and undermining U.S. national will. At the operational level, our adversaries use IEDs to shape how we fight—tempting us to hunker down in heavily defended outposts and venture out only in armored convoys, thereby distancing us from the people we need to engage. At the tactical level, our adversaries use IEDs to constrain our freedom of action, counter our superiority of arms, and attrit our forces.

Strategic. Insurgent groups in Iraq and Afghanistan proved proficient at synchronizing IED attacks with information operations to weaken public confidence in the government, demonstrate their effectiveness, and undermine coalition resolve. Spectacular IED attacks gain media coverage and demonstrate a group's effectiveness, which furthers its recruiting and attracts funding, especially when competing for resources against other VEOs. The presence of multiple VEOs in an operating environment, as witnessed in Iraq and now Syria, is often accompanied by higher levels of violence and makes the IED problem more complex.

IEDs help the insurgent raise the cost of the conflict to an unacceptable level in terms of casualties suffered, resources depleted, and time expended, and foster the sense that the conflict cannot be won. IEDs can be used to harm a nation's economy by restricting the flow of goods and services over internal lines of communication and creating a climate of insecurity that discourages foreign investment, trade, and tourism. IED attacks on Iraqi oil pipelines, for example, denied the government much-needed revenue for reconstruction during *Iraqi Freedom*.

IEDs are often regarded as an asymmetric means to counter U.S. military strength, but military power is only one factor. U.S. strength in the other elements of national power—diplomatic, informational, and economic—serves to isolate adversary groups from the state sponsorship that could provide them with the sophisticated conventional weapons they would need to match U.S. and host-nation forces. U.S. hard power and soft power deter other nations from sponsoring terrorists or limit such support to methods that are deniable, such as the explosively formed penetrators that Iran provided to Shiite groups in Iraq.[7] IEDs provide terrorists a means to attack U.S. forces while avoiding the constraints that a sponsor might impose on them.

Operational. Our enemies use IEDs to shape the operating environment to their advantage by impeding friendly force movement and maneuver, defeating force protection measures, and complicating logistics. IEDs constrain our mobility and hinder our freedom of action, which isolates our troops from the population they need to influence and protect. Suicide bombers give the enemy a means, in terms of space and time, to attack in our operational depth, including in our rear areas, such as an insider attack on a command center.

Operating in an IED-rich environment forces commanders to allocate limited resources to force protection and sustainment and slows the tempo of operations. To avoid IEDs, we rely on helicopters and cargo planes for intertheater lift, which increases cost and slows sustainment. During Operation *Iraqi Freedom*, multinational forces devoted considerable resources to keeping main

supply routes open. Lesser roads were often impassible, which further constrained our mobility. The IED provides a means for qualitatively and quantitatively inferior groups to operate over a larger area and strike at a time and place of their choosing. This, in turn, reduces their vulnerability as they attrit U.S. forces. IEDs serve as force multipliers that allow insurgents to create larger effects on the battlefield without massing forces.

Tactical. IEDs give our enemies tactical advantages in ways that other weapons do not. IEDs compensate for a lack of conventional weapons by providing greater lethality, standoff, and survivability than small arms. They also provide a countermobility capability against mounted and dismounted units, and a means to attack hardened targets such as armored vehicles and fortifications. Like landmines, IEDs alter the terrain to channelize movement into prepared ambushes. In addition, IEDs provide standoff that reduces the bomber's vulnerability by keeping him out of the range of our weapons and sensors. The IED's indiscriminate nature and anonymity make it even more fearsome and effective as a psychological weapon, heightening the combat stress of friendly forces.

In conventional warfare, when the enemy is forced to withdraw, he typically mines and booby-traps any facilities or stores he leaves behind. The presence of booby traps prevents soldiers from taking shelter in captured buildings and bunkers, leaving them exposed to the elements and vulnerable to attack by aircraft and artillery.[8] During the Korean War, the North Koreans even booby-trapped timber, knowing that United Nations forces would be scavenging for firewood to stay warm.[9]

Countering IEDs Across the Phases of Operation

IEDs have different implications for each phase of operation. During the "shaping" and "deter" phases, they are largely a force protection problem. Routine peacetime presence and multilateral exercises place U.S. forces within reach of adversaries who might employ IEDs.

During the "seize the initiative" and "dominate" phases, in which the focus of operations is on capturing and occupying the enemy's territory, IEDs are primarily an impediment to movement and maneuver that will be breached or bypassed like other explosive obstacles. Timing and tempo typically are more highly valued in phase two and phase three operations in order to bring about the enemy's collapse or culmination.

In the "stability" and "transfer to civil authority" phases, the IED becomes a means for former regime elements and other antagonists to continue the fight. In these phases of operation, the exploitation of IEDs provides U.S. forces a means to gain insight into the networks hostile to the occupying force, as it does in counterinsurgency and counterterrorism operations. Exploitation allows us to attribute IEDs to specific individuals who can then be targeted.

The competing demands of mobility and intelligence are important considerations when operating in an IED-rich environment. This language from the Marine Corps's *MAGTF C-IED Operations* captures the distinction nicely:

> *To effectively manage threats in an IED-rich environment, commanders must provide guidance on appropriate actions when an IED is encountered. Essentially, the on-scene commander facing an IED has to decide whether to mark and bypass or isolate the area for follow-on EOD* [explosive ordnance disposal] *neutralization and exploitation. Tactical considerations and leadership guidelines will dictate which action is taken. Finally, law of war considerations must factor into the on-scene commander's decision whether to destroy an IED. The principles of necessity, distinction, proportionality, and unnecessary suffering must be weighed in making this decision.*[10]

Guidance would likely change across the phases of an operation, with assured mobility taking priority in the "seize the initiative" and "dominate" phases and the intelligence value of IEDs taking priority in the "shape," "deter," "stabilize," and "enable civil authority" phases. Assured mobility is emphasized in engineering doctrine, while the intelligence value of IEDs is emphasized in EOD and WTI publications. Joint doctrine should give commanders an understanding of how to reconcile the competing requirements of mobility, force protection, and IED exploitation.

It is also important in phases two and three to preempt the IED problem by disposing of unexploded ordnance (UXO) and captured munitions—something we failed to do in Iraq. Unsecured Iraqi munition stockpiles were quickly looted and became a major source of enemy supply early in the insurgency. Similarly, in Vietnam, Viet Cong guerrillas used unexploded U.S. ordnance in booby traps and locally manufactured munitions.[11] Separatists from the National Organization of Cypriot Fighters in Cyprus in the 1950s went as far as salvaging munitions from sunken warships, which they then steamed out in order to obtain material for explosives.[12] Captured munitions and ammunition supply points must be guarded or destroyed. UXO should be cleared from the battlefield as units move forward. These tasks must be planned for and have forces allocated to them. Phase zero shaping activities should also include clearing explosive remnants of war to prevent munitions from past conflicts from becoming IEDs in future conflicts.

Counterinsurgency

Counterinsurgency provides the context for our recent experience in IED-rich environments. The IED fight is in part a contest for control over the environment and the population. We interdict the bomber's access to explosives by clearing unexploded ordnance, destroying enemy ammunition supply points and arms caches, and regulating HME precursors, such as ammonium nitrate fertilizers. We restrict the bomber's access to the electromagnetic spectrum with electronic warfare systems such as CREW and Wolfhound, and we likewise restrict his access to resources through counter-threat finance and supply chain interdiction. We restrict the bomber's access to terrain with barriers, entry controls, route clearance, and surveil-

Explosive ordnance disposal technician, 3rd EOD, 9th Engineer Support Battalion, performs sweep with metal detector during post-blast analysis training scenario at Emerson Lake training area, September 19, 2015, Twentynine Palms, California (U.S. Marine Corps/Levi Schultz)

lance, and to the population through counterinsurgency activities like census taking and biometric enrollment, which enable network targeting. Many counterinsurgency best practices are essential to countering IEDs, and many counter-IED practices are good counterinsurgency. A handwritten sign posted at a Marine combat outpost aptly illustrated this relationship, stating that the "best counter to IEDs = #1 the Afghan people, #2 ANSF partners and then metal detectors, dogs, GBOSS [ground-based operational surveillance system], airplanes, etc. 80% of our IED finds have been the direct result of tips from local nationals because of the respect that you show to the people—and because they've watched you ruthlessly close with and destroy the enemy."[13]

The Environment

IEDs have been encountered in every domain, but have seen use primarily in land-based attacks. Most IEDs used at sea or in the air have been little different from those used on land. The time bomb that brought down Pan Am Flight 103 over Lockerbie, Scotland, in December 1988 was an IED concealed in a suitcase, while the time bomb that sank *SuperFerry 14* in Manila Bay in the Philippines in February 2004 was concealed in a television set.

The nature of the target or the environment, however, may significantly affect design and tactical employment. In World War I, for example, French forces at Salonika brought down a German aircraft by loading the basket of an observation balloon with several hundred pounds of explosives and command-detonating it via a telegraph cable as the pilot tried to strafe the balloon. The aircraft was destroyed and the pilot, who had previously shot down several other observation balloons, was killed.[14] During the Second World War, the British Special Operations Executive developed an altimeter switch for destroying an aircraft in flight.[15] The aircraft at greatest risk, however, are helicopters, especially medevac helicopters called upon to extract personnel wounded in an IED ambush. Special care must be taken to ensure their landing zones are clear of secondary IEDs. During the Vietnam War, Viet Cong guerrillas developed many ingenious anti-helicopter devices that were designed to be triggered by the aircraft's rotor wash.[16] The growing commercial unmaned aerial vehical market may provide new opportunities for adversaries to use IEDs in the air.

The maritime environment has seen some high-profile IED attacks, most notably the October 2000 suicide boat bombing of the USS *Cole* in Aden, Yemen, and the similar October 2002 attack on the French tanker MV *Limburg*. Overall, however, IED attacks in the maritime domain have been much less common than on land. Operating at sea requires skills in navigation, coastal piloting, ship handling, and combat swimming that are not easily acquired. It is also harder to blend into the population at sea, and weapons testing and rehearsals are more difficult. Media coverage of an attack—vital to modern terrorists—is less reliable and less spectacular far from shore.[17] However, a few groups, notably the Tamil Tigers, have been very effective in the maritime domain. Viet Cong sappers also conducted

Mine clearing line explosive charge launches from Company A, 4th Brigade Special Troops Battalion, 4th Brigade Combat Team, 101st Airborne Division vehicle on Route Dodge, Paktika Province, Afghanistan (U.S. Army/Zachary Burke)

some limpet mine and IED attacks against U.S. ships during the Vietnam War, including the sinking of the USNS *Card*, a utility aircraft carrier.[18] Sea ports are important logistics hubs for the movement of personnel, equipment, and supplies into theater and thus make desirable targets. The geography of rivers, deltas, canals, inland waterways, archipelagic waters, and narrow and inland seas make them suitable for interdiction with IEDs, including improvised sea mines, to give irregular adversaries a limited sea-denial capability.

Weapons Technical Intelligence

One of the most important innovations for countering IEDs has been the development of weapons technical intelligence. In August 2003, coalition forces in Iraq identified an operational need for an IED exploitation capability "to provide immediate in-theater analysis, technical intelligence and advice to EOD personnel and provide advice on changes to force protection measures."[19] The technical exploitation of IEDs—WTI—eventually became its own subset of technical intelligence (TECHINT) and comprises a category of intelligence and processes derived from the technical and forensic collection and exploitation of improvised explosive devices, associated components, improvised weapons, and other weapons systems.[20] Traditional TECHINT and WTI differ in several important ways related to their purpose, execution, and outcomes.

While TECHINT applies to the full range of foreign war materiel, including aircraft, armor, sensors, communications, and munitions, WTI applies only to improvised weapons, particularly IEDs, and their components. For this reason, TECHINT has broader application, especially in conventional warfare where technical analysis can yield the scientific and technical intelligence needed to ensure the survivability of U.S. systems and to design countermeasures to enemy capabilities. WTI finds its greatest utility in irregular warfare in which a typically lightly armed, irregularly equipped enemy improvises his own weapons and explosives. These improvised weapons bear the unique signatures—technical, forensic, behavioral—of their builders, which makes exploiting them useful for attributing attacks to specific individuals, groups, and networks.

Attribution is an import distinction between TECHINT and WTI. While TECHINT may be used to target a nation's capacity to produce particular weapons and systems, WTI is used to target individual bomb makers and the terror network to which they belong. IED design is exceptionally variable and minor differences in construction can tell investigators much about the bomber, his training, and his sources of supply. Biometrics are rarely relevant to TECHINT but are essential to WTI, which fuses technical and forensic information to produce biometrically enabled

intelligence. While both TECHINT and WTI support countermeasure development and force protection, WTI's five outcomes—force protection, component material sourcing, targeting, support to prosecution, and signature characterization—are more relevant to defeating adversary networks and supporting host-nation rule of law.[21]

A single conventional munition may yield ample technical intelligence about the munition in question. Representative samples are sufficient because mass-produced munitions are identical and attribution is not a factor. With IEDs, however, every device must be exploited for the unique signatures of individual bomb makers that can be correlated through pattern analysis and mapped geospatially. Two people given identical components and instructions will produce IEDs that are surprisingly different in appearance, with unique biometric markers such as latent fingerprints and DNA and different behavioral markers such as the placement of components or skill in soldering. As an example, consider how easy it is to pick out your child's artwork from all the other nearly identical masterpieces displayed in his or her classroom at back-to-school night. The implication is that the volume of collected material that must be processed for WTI is unlimited (theoretically 100 percent), which makes WTI much more labor intensive, at least for field collection, triage, and chain of custody management.

TECHINT is conducted in both peacetime and wartime and is generally a more deliberate, methodical discipline. It strives for a complete understanding of a weapons system that can serve as the foundation of development and acquisition programs for new weapons, countermeasures, and equipment. IED use, by contrast, is almost always an act of violence related to criminality, terrorism, or war, which drives a heightened sense of urgency to exploit devices quickly and derive actionable information from them. WTI is often more urgent because obtaining combat information is a higher priority than waiting for fully developed intelligence.[22] Not only does WTI seek to characterize the IED technically (how it was constructed) but tactically (how it was employed and for what purpose). Much of the most useful WTI analysis occurs in theater at expeditionary labs.

Like TECHINT, WTI benefits from an interagency effort and its reports are used across government. In 2013, for example, the Federal Bureau of Investigation (FBI) arrested two Iraqi refugees in a sting operation in Kentucky after their fingerprints were found to match latent prints collected from an unexploded IED in Iraq.[23] Federal law enforcement personnel provided key forensic capabilities and added rigor to the evidence management processes of the counter-IED task forces in Iraq and Afghanistan. The FBI's Terrorist Explosive Device Analytical Center continues to fully analyze and exploit IEDs recovered overseas.

The Enduring Threat

As a result of the proliferation of IED knowledge available on the Internet, in extremist publications, and at terrorist training camps as well as the exploitation of readily available off-the-shelf technologies, VEOs are able to develop and employ IEDs with a relatively small investment. The example of tactical—and perhaps operational and strategic—success associated with IED attacks in Iraq and Afghanistan may inspire other violent actors to employ IEDs to counter U.S. military strength and achieve their objectives. Various VEOs, including al Qaeda, have stated their intent to obtain and use chemical, biological, radiological, and nuclear weapons. New threat actors operating in different environments will use IEDs in novel and unpredictable ways. Not everything that is possible is probable, but the limitless variability of the IED will continue to be confounding for planners and strategists.

Knowledge of IED construction is more readily available than ever, yet the requisite skills remain difficult to acquire. Working with sensitive homemade explosives and complex electronics is risky, and even experienced bomb makers are killed by their own devices through error or miscalculation. The limited availability of IED expertise has several implications for friendly forces.

Operational experience in IED-rich environments such as Northern Ireland, Iraq, and Afghanistan has shown that there are often hierarchies of bomb makers, including experienced "master bomb makers" who pass on their techniques to others in the organization. For example, Yehya Ayash, nicknamed "the Engineer," served as the chief bomb maker for Hamas and is credited with greatly improving the technical sophistication of its IEDs in the early 1990s.[24] Master bomb makers may have learned their skills in terrorist training camps or through legitimate occupations such as quarrying, chemistry, or electronics and then honed them over the course of many years. A bomb maker's special skills are not easily replaced, so removing the bomb maker from the environment usually has a direct measurable effect on the rate of IED incidents. Experienced bomb makers are a critical adversary capability that can be targeted, and the relationship between master and apprentice is a node that can be exploited.

Successful countermeasures and countervailing tactics force the bomb makers to alter their designs and techniques, thereby increasing the chance for error. Fielding unproven and perhaps less reliable IED designs carries increased risk of failure and may require new tactics for employment. Effective IED countermeasures often have the desirable secondary effect of stressing the bomb-making network and forcing lethal errors on the bomb maker.

IEDs have been the signature weapon in the wars of attrition our enemies have waged against us in Iraq, Afghanistan, and other regions, and have featured in every major conflict in the modern era. They have resulted in a high cost in casualties and materiel, and have impaired our ability to achieve our objectives. Recognizing that the IED has been and will continue to be a threat to U.S. forces and mission accomplishment—throughout the range of military operations and across all the phases of operation, in both traditional and irregular conflict—the joint force needs to capture

authoritatively and comprehensively the fundamental principles and best practices of operating in IED-rich environments before they are forgotten.

As our force levels in Afghanistan fall and our operational tempo decreases, now is a good time to consider what we have learned about IEDs and invest the intellectual energy into ensuring our doctrine is relevant to future conflicts. While the IED is not the only threat we face, its effectiveness suggests it is not going away any time soon. JFQ

Joint Publications (JPs) Under Revision (to be signed within 6 months)

JP 1-04, *Amphibious Embarkation and Debarkation*

JP 1-06, *Financial Management Support in Joint Operations*

JP 2-01.2, *Counterintelligence/Human Intelligence*

JP 3-13.3, *Operations Security*

JP 3-14, *Space Operations*

JP 3-34, *Engineer Operations*

JP 3-68, *Noncombatant Evacuation Operations*

JP 4-01.2, *Sealift Support to Joint Operations*

JP 4-01.5, *Joint Terminal Operations*

JP 4-01.6, *Joint Logistics Over-the-Shore*

JP 4-03, *Joint Bulk Petroleum and Water*

JPs Revised (signed within last 6 months)

JP 1-0, *Joint Personnel Support*

JP 3-05.1, *Unconventional Warfare*

JP 3-50, *Personnel Recovery*

JP 3-61, *Public Affairs*

JP 6-0, *Joint Communications System*

Notes

[1] JCCS-1 (Joint CREW Composite Squadron-1) was a Navy-run electronic warfare unit in Iraq that managed CREW systems and developed CREW-related tactics, techniques, and procedures. Task Force ODIN (observe, detect, identify, and neutralize) was an Army aviation battalion in Iraq that flew the MQ-1B Warrior-Alpha unmanned aerial vehicle to provide reconnaissance, surveillance, and target acquisition (RSTA) against insurgents using improvised explosive devices (IEDs). The range of materiel solutions that the Joint Improvised Explosive Device Defeat Organization (JIEDDO) fielded is extraordinary—aerostats, explosives detectors, electronic countermeasures, patrol dogs, ground-penetrating radar, robots, personnel protective equipment, optics, mine rollers—and reflects the variability and unpredictability of the IED threat.

[2] Ian Jones, *Malice Aforethought: A History of Booby Traps from World War One to Vietnam* (London: Greenhill Books, 2004), 33.

[3] Ibid., 226.

[4] General Staff (Intelligence) General Headquarters (GHQ), *German Ruses* (1st Printing Co., R.E., GHQ, April 8, 1917), available at <http://museumvictoria.com.au/collections/items/1955526/document-german-ruses-13th-australian-field-ambulance-world-war-i-1914-1918>.

[5] Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: The Joint Staff, November 8, 2010, as amended through March 15, 2015), s.v. "improvised explosive device."

[6] Walter Laqueur, *The New Terrorism: Fanaticism and the Arms of Mass Destruction* (New York: Oxford University Press, 2000), 192.

[7] Stanley A. McChrystal, *My Share of the Task: A Memoir* (New York: Penguin Group, 2013), 252.

[8] Jones, 45.

[9] Ibid., 227.

[10] MCIP 3-17.02, *MAGTF* [Marine Air-Ground Task Force] *Counter-Improvised Explosive Device Operations* (Washington, DC: Department of the Navy, Headquarters U.S. Marine Corps, November 14, 2012), 4–5.

[11] Fleet Marine Force Reference Publication (FMFRP) 12-43, *Professional Knowledge Gained from Operational Experience in Vietnam, 1969, Special Issue, Mines and Boobytraps*, (Washington, DC: Headquarters U.S. Marine Corps, July 20, 1989), 3.

[12] Jones, 229.

[13] MCIP 3-17.02, figure 1-1.

[14] Jones, 47.

[15] Ibid., 167.

[16] FMFRP 12-43, 66.

[17] James Pelkofski, "Before the Storm: al Qaeda's Coming Maritime Campaign," U.S. Naval Institute *Proceedings* 131, no. 12 (December 2005), 20–24.

[18] Paul Huard, "Viet Cong Commandos Sank an American Aircraft Carrier," *Medium.com*, available at <https://medium.com/war-is-boring/viet-cong-commandos-sank-an-american-aircraft-carrier-7f243ede06b3>.

[19] Brigadier General Barbara Fast, C2, CJTF7, for Defense Intelligence Agency, through Commander JCMEC, memorandum, *Iraqi Theater of Operations (ITO) Combined Explosives Exploitation Cell*, October 23, 2003.

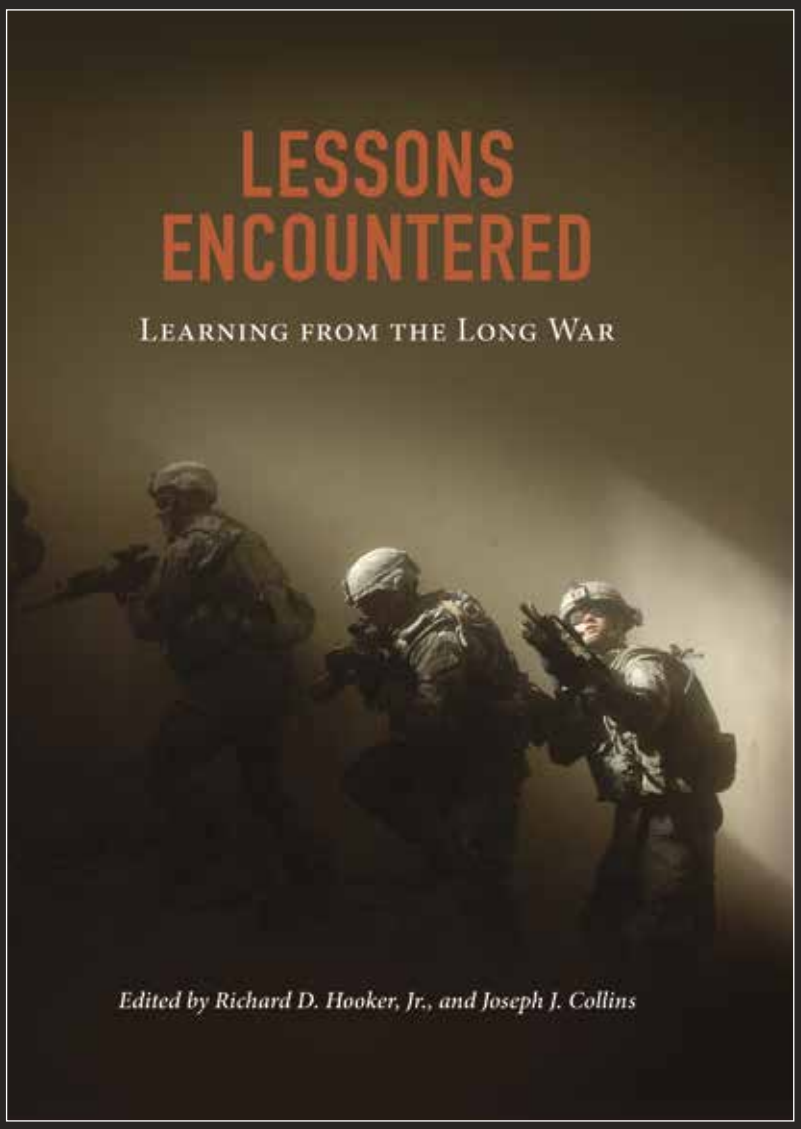
[20] JP 1-02, s.v. "weapons technical intelligence."

[21] Defense Intelligence Agency (DIA) and Joint Improvised Explosive Device Defeat Organization (JIEDDO), *Weapons Technical Intelligence Handbook*, Version 2.0 (Washington, DC: DIA and JIEDDO, March 2014), 4.

[22] *Combat information* is "unevaluated data, gathered by or provided directly to the tactical commander which, due to its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements." JP 1-02, s.v. "combat information."

[23] U.S. Department of Justice, "Former Iraqi Terrorists Living in Kentucky Sentenced for Terrorist Activities," available at <www.fbi.gov/louisville/press-releases/2013/former-iraqi-terrorists-living-in-kentucky-sentenced-for-terrorist-activities>. In another recent incident, a London taxi driver's fingerprints linked him to an IED that killed a U.S. Soldier in Iraq. Laura Perez Maestro and Don Melvin, "British Man Found Guilty in U.S. Soldier's Death in Iraq," *CNN.com*, available at <www.cnn.com/2015/05/21/world/briton-guilty-u-s-soldier-death/index.html>.

[24] Laqueur, 139.



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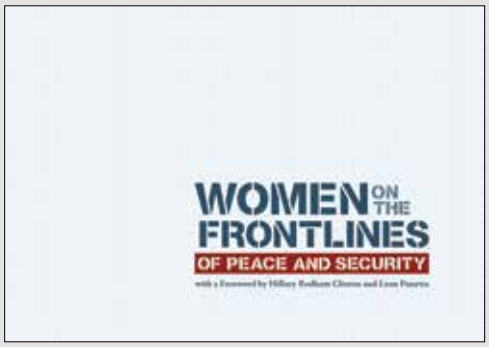

Women on the Frontlines of Peace and Security

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

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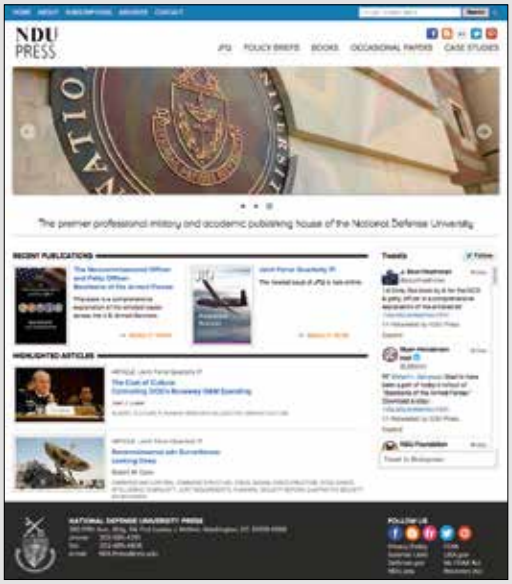

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