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By Order of the Secretary of the Army:

JAMES C. MCCONVILLE
General, United States Army
Chief of Staff

Official:

MARK F. AVERILL
Administrative Assistant
to the Secretary of the Army

2304624

Cover photo: British soldiers with 2nd Battalion, Parachute Regiment, reinforce a position held by U.S. Marines with 2nd Battalion, 1st Marines, attached to the Special Purpose Marine Air-Ground Task Force-Crisis Response-Central Command (SPMAGTF-CR-CC) 21.1, during bilateral training on a range in Jordan, 4 July 2021. The bilateral training was conducted to strengthen relations and cooperation between the allied forces in the U.S. Central Command area of operation. SPMAGTF-CR-CC is designed to respond rapidly and efficiently to a wide range of military operations utilizing aviation, ground, and logistics assets. (Photo by Cpl. Jacob Yost, U.S. Marine Corps)

ARMY UNIVERSITY PRESS

Letter from the Editor in Chief

Read like Your Life and the Lives of Your Soldiers Depend upon It

Col. Todd Schmidt, PhD, U.S. Army
Director, Army University Press

As spring quickly approaches and New Year's resolutions fall by the wayside, an important resolution leaders should make each year and strive to fulfill is to set ambitious goals for professional reading. As busy as life can get, it is critical that military professionals remain consistently devoted to a personal professional development plan. We should read as if our lives and the lives of our soldiers depend upon it.

For those with ambitions to join the general officer ranks, consider that military elites should exhibit an exceptionally strong and wide-ranging intellect that demonstrates a grasp of international relations, geography, and history, as well as a sophisticated understanding and comprehension of military doctrine, alliance relationships, national politics, bureaucratic politics, the interagency process, military-industrial relationships, leadership, culture, and current events. Senior leaders should understand the roles and responsibilities of the military services, service chiefs, combatant commands, and the joint staff. Although the Army's professional military education system may offer curriculum and electives that survey these topics, it is incumbent upon leaders to build personal depth through expanded professional reading.

It is clear that development of great leaders requires personal commitment, dedication, and sacrifice beyond mere residential attendance to professional military education programs. As rigorous as military curriculum may be, however, it is still meant to create a baseline of skill and talent. Meeting the graduation requirements of a military school is expected, if not foreordained. Dr. Elliot Cohen, a highly respected academic, provides an excoriating critique of the military's education of potential strategic leaders, describing the war colleges as a "necessary tick mark" for potential flag officers with programs of study that are "virtually impossible to flunk out." He argues that "being selected for attendance is more important" than academic performance. And in a bow to the anti-intellectualism of many in the military, Cohen points out that attending military and civilian schools is often chided as "taking a knee," making others carry the burden of combat deployments, and potentially hobbling career progression.

In contrast, throughout history, the world's greatest philosophers, generals, and leaders have stressed the critical importance of developing warrior-scholars who possess the knowledge required to lead, fight, and win wars. Like the "Great Man Theory" of leadership, the legends of great military generals often speak of the personal devotion to study and professional development they undertook to prepare themselves to lead when destiny called. With near-superhuman devotion, they burned the midnight oil. After long days of physical exertion and training in the field, these heroic figures sacrificed countless hours to the monkish study of their adversary and the theory and practice of war. Gen. James Mattis famously stated, "If you

haven't read hundreds of books, you are functionally illiterate, and you will be incompetent, because your personal experiences alone aren't broad enough to sustain you." The message is clear: Whether a lieutenant or a general, countless assignments in tactical line units and combat experience are not enough to prepare leaders for the complex challenges of operational and strategic leadership.

Col. Todd Schmidt

In an interview with a recently retired U.S. Army four-star general and former combatant commander, the general stated that all the military professional development and education he received focused on preparing him to be a good division commander. Beyond division command, he felt ill-prepared to navigate his three- and four-star assignments. His message was that the U.S. Army develops the best brigade- and division-level commanders in the world. But are they prepared for the next level? In this general officer's opinion, the answer was "no."

A conversation with a former Training and Doctrine (TRADOC) commander provided further enlightenment. He described how one of the most dramatic steps in an Army officer's career is being promoted to general officer rank. Newly minted one-star generals have "done an exceptionally good job in their career to this level but just find it very difficult when they pin on a star because up until this point, they've been doing a lot of things that they've been doing all along, just on a larger scale." However, the transition to flag officer ranks requires a higher level of intellectual engagement, a quality that is not gained by merely scrolling through headlines on news feeds and social media.

The former TRADOC commander emphasized, "Some officers just aren't intellectually prepared to make the transition. … We promote maybe forty out of 4,000. In that group of forty, you'll have maybe one or two [who] are capable and intellectually equipped to think and perform at the strategic level. You may not have any. And not every great division commander is meant to be promoted either. They just don't necessarily see the world strategically. … We still promote GOs to four stars that are 'frozen in time' as great brigade commanders."

Another senior executive officer weighed in to the conversation, opining that because brigadiers now have a star, they think they are the one. Their ambition outweighs and overshadows their capability. As a former chief of staff of the Army noted, the Army tends "to develop leaders more in the context of 'what to think,' not 'how to think.' We train leaders to think in a linear fashion, not holistically, and it hurts our flag officers when they reach three- and four-star level."

To ensure we maintain an intellectual edge and guard against shallow leadership and hollow intellectualism, we cannot be satisfied with educational programs that meet minimum requirements of academic rigor. The challenge of developing strategic leaders for the twenty-first century, however, does not rest solely on the military institution. As professionals, we have a personal responsibility to meet the intellectual demands of the future operational environment. If we truly believe that people are our biggest asset and soldiers are our most lethal weapons system, we have a personal duty to achieve cognitive superiority over our adversary. Meeting these obligations requires reading above and beyond the requirements of any military schoolhouse.

No doubt, personal preparation for leadership and conflict at all levels takes the form of physical, mental, emotional, and spiritual fitness. The Army's system of training, education, and professional development, as good as it is, must be augmented by personally driven, individual development and initiative. For many, this translates into a personal and professional reading program that should be as religiously followed as our morning physical fitness regimen. It can begin with the simple survey of the Army chief of staff's recommended reading list or the Army University Press website. Our books and materials are free, downloadable, or can be shipped to you at no personal cost. However you design your personal professional develop plan, reading must be a foundational element. Read like your life depends on it! ■

Write for *Military Review*

Suggested Writing Themes and Topics—2023

- From the U.S. military perspective, what are the greatest external threats to the United States? Why? And, how?
- Do any external threats realistically threaten the survival of the United States or its allies? If so, how?
- Are there nations that consider themselves to be at war with the United States? If so, how are they conducting war and what would increase the probabilities of their success?
- Is there a new "Cold War"? If so, which nations make up the new confederated blocs (e.g., new "Axis" powers) aligned against the United States and how do they cooperate with each other? What types of treaties or agreements do they have that outline relationships they share to reinforce each other?
- Who does synchronization of DIME (diplomacy, information, military, economic) elements of power to achieve strategic goals best on the global stage? Contrast and compare employment of DIME by China, Russia, Iran, and the United States. How should the United States defend itself against foreign DIME?
- Does China have an "Achilles' heel"? What is its center of gravity? If it has one, how can it best be attacked/exploited?
- What does China view as the United States' "Achilles' heel" or "center of gravity"? (e.g., trade relations? Resource shortages? Diminishing technological manufacturing base? Societal instability and factionalism?) How specifically is it exploiting these? Specific examples?
- What is the impact of irregular immigration on the security of the United States? What role does the U.S. military currently have by law to protect U.S. borders from irregular immigration and criminal activity linked to it? What relationships does the military currently have with other security institutions to protect the border? What relationships should it legitimately have? How should the National Guard be used?
- Update on status of security force assistance brigades. What is the role now of the U.S. Armed Forces in Africa? Far East? Middle East?
- What logistical challenge does the U.S. military foresee due to changes in infrastructure and forward operating locations?
- What is "just over the horizon" in terms of weapons systems about to be deployed? Nanoweapons? Electromagnetic? Artificial intelligence? Other? How is the Army planning to mitigate effects?

2023 General William E. DePuy

Special Topics Writing Competition

This year's theme is "Implementing FM 3-0, *Operations*"

The updated Field Manual (FM) 3-0, *Operations*, was introduced and disseminated throughout the Army in October 2022. The intent of this year's DePuy competition is to encourage close examination of the impact implementing FM 3-0 will have on the Army. A list of suggested topics for examination is provided below. However, the list is not exclusive and treatment of other relevant topics is encouraged. Manuscripts identifying and analyzing other salient topics that offer insight and productive critique of issues related to implementation of FM 3-0 are encouraged.

Competition opens 1 January 2023 and closes 20 July 2023

1st Place	$1,000 and publication in *Military Review*
2nd Place	$750 and consideration for publication in *Military Review*
3rd Place	$500 and consideration for publication in *Military Review*

For information on how to submit an entry, please visit https://www.armyupress.army.mil/DePuy-Writing-Competition/.

Articles will be comparatively judged by a panel of senior Army leaders on how well authors have clearly identified issues surrounding implementation of FM 3-0 within the Army in general and/or to a significant portion of the Army; how effectively detailed and feasible solutions to the issues identified are presented; and the level of expository skill the author demonstrates in developing a well-organized article using professional standards of grammar, usage, critical thinking, original insights, and evidence of thorough research in the sources provided.

Some Suggested Writing Topics Salient to FM 3-0

- What are the chief obstacles to the implementation of the new doctrinal concepts in FM 3-0?
- What did the new FM 3-0 get right? What did it overlook or get wrong? How does it need to be revised?
- Surviving on the future battlefield. How does a modernized army equipped with the latest technology, to include cyberspace and space capabilities, remain concealed and protected on the battlefield when our adversaries can "see" and track its units from social media and other media posts from home stations (CONUS or other) to the forward line of own troops?
- Given the concepts introduced in FM 3-0, the antiaccess/area denial capabilities possessed by our potential enemies, and what we are observing in Ukraine with regard to the technical sophistication available for defeating air assets, is it time for the U.S. Army to divest itself of its large-scale airborne forcible entry capabilities?
- Has the tank gone the way of the battleship? With the concepts introduced in FM 3-0, the exponential increase of long-range precision fires and unmanned aircraft systems capabilities, and the U.S. Marine Corps'

recent divesture of heavy armor capabilities (tanks and self-propelled howitzers), should the Army divest of its armor formations?

- The concept of convergence is one of the key concepts undergirding multidomain operations. Explain this concept and how it will be achieved. What are the implications of enemy electronic warfare on the ability for Army forces to achieve convergence?
- Does the new FM 3-0 adequately address the introduction of new adversarial technologies such as hypersonic weapons? Exotic weapons such as biological warfare agents?
- Army forces have been multidomain forces in many ways for years, so what are the implications of what is new about the multidomain operations concept as described in the new FM 3-0?
- What are the implications of multidomain operations for echelons above brigade?
- What are the implications of multidomain operations for echelons below brigade?
- Are multidomain operations described in FM 3-0 a continuation of (or departure from) the evolution of operational art? If so, how are they different? In any contrast and compare analysis, consider the works of Soviet military theorist G. S. Isserson, former commanding general of U.S. Army Training and Doctrine Command, Gen. Donn A. Starry, and other military theoreticians who have been involved in the evolution of the concept.
- How well does FM 3-0's operational concept address how Army forces need to operate given what we have observed in Nagorno-Karabakh and Ukraine?
- Does FM 3-0 reveal anything about the readiness of our Army to fight a Russia or China?
- Compare and contrast the development of AirLand Battle with the development of multi-domain operations. Consider the influence of the Vietnam and 1973 Yom Kippur War and that of the Global War on Terrorism and the conflicts in Ukraine and Nagorno-Karabakh. What lessons can be drawn from this analysis?
- Using FM 3-0's maritime chapter (chapter 7) as a point of departure, provide insight into the unique challenges of operating in maritime environments.
- What command and control challenges can we anticipate when employing multidomain operations?
- An assessment of the feasibility of doctrine implementation given the projected logistical/material or other constraints?

New from Army Doctrine

Among other important changes, the most recently updated Field Manual (FM) 3-0, *Operations*, published in October 2022, focuses on upgrading Army capabilities to employ speed, range, and convergence of cutting-edge technologies to achieve land dominance against future enemies. It stresses the role the Army plays in holding critical terrain, providing assurances to allies and partners, defeating all enemies in close combat, and consolidating gains to achieve enduring strategic outcomes. FM 3-0 is rooted in the principles of war and reinforces an offensive mindset but also provides a simple definition of multidomain operations intended to help leaders

at all echelons visualize and understand the interrelationship among the physical, information, and human dimensions. It also provides an operational framework that helps echelons better organize forces in terms of time, space, and purpose. Notably, it addresses the unique challenges of applying landpower in maritime environments and the unique requirements for combat leadership in complex modern warfare.

The new FM 3-0 can be downloaded from the Army Publishing Directorate at https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN36290-FM_3-0-000-WEB-2.pdf.

TABLE OF CONTENTS

March-April 2023
Volume 103 ◆ Number 2

(Image by Spencer Bowers)

Musicians of Mars in Multiple Domains

Expanding Combined Arms in the Twenty-First Century

Lt. Gen. Milford Beagle Jr., U.S. Army
Col. Richard Creed, U.S. Army, Retired
Lt. Col. Matt Farmer, U.S. Army, Retired

To get harmony in battle, each weapon must support the other. Team play wins. You musicians of Mars ... must come into the concert at the proper place and at the proper time.
—George S. Patton

Over eighty years ago at the outset of World War II, then Maj. Gen. George S. Patton described how he wanted to fight to the 2nd Armored Division using a musical metaphor—an odd choice reflecting the ease with which the general often combined the profound with the profane. The instruments of battle are different today and so is the operational environment, but the metaphor still rings true. The new version of Field Manual (FM) 3-0, *Operations*, emphasizes the time-tested combined arms approach to operations, expanded to meet the challenges posed today by threats like China and Russia.[1] Both adversaries possess large, modern militaries that can contest the U.S. joint force through land, air, maritime, space, and cyberspace—an environment in which the U.S. Army has not fought for decades. Army forces meet this challenge through multidomain operations, the operational concept described in the new FM 3-0:

> Multidomain operations are the combined arms employment of joint and Army capabilities to create and exploit relative advantages that achieve objectives, defeat enemy forces, and consolidate gains on behalf of joint force commanders.[2]

At the core of multidomain operations is the expansion of combined arms beyond traditional one- and two-domain approaches to include all domains—land, air, maritime, space, and cyberspace. The multidomain approach increases options for Army and joint force commanders to create exploitable advantages against enemy forces with peer capabilities. Effective integration of all available capabilities and methods demands leaders who understand doctrine and are masters of their craft. Reading FM 3-0 and other doctrine

Russian Defence Minister Sergei Shoigu (*left*) and Chinese Defense Minister Wei Fenghe watch a joint military exercise by Russia and China held 13 August 2021 in the Ningxia Hui Autonomous Region of China. (Photo by Savitskiy Vadim, Russian Defence Ministry via Associated Press)

is essential, but mastery requires application during leader development and training at home station and combat training centers.

From its inception in 2016, multidomain operations were threat informed. The entry point for understanding multidomain operations is therefore an understanding of the Chinese and Russian threats.

Challenges Posed by China and Russia

Chinese and Russian military modernization and the proliferation of space, cyberspace, and nuclear capabilities with military applications are the key factors driving change in security policy and doctrine. Although several adversaries can contest the joint force in multiple domains, China and Russia remain the most dangerous. They possess operationally durable formations and capabilities that are resilient and adaptable. Defeating either of them rapidly in a single decisive effort is unlikely. Army forces must therefore be able to mass combat power against multiple decisive points, accrue advantages over time, and defeat enemy forces in detail by creating and exploiting favorable force ratios.[3]

At the strategic level, China and Russia present different threats and at different scales. However, both adversaries employ standoff approaches, utilizing networked sensor and long-range fires capabilities to deny the U.S. joint force access to strategically valuable areas necessary for force projection and global response from the continental United States. Both nations concluded from U.S. operations against Iraq and Afghanistan that the best way to defend themselves was to prevent enemies from building up combat power close to their borders.[4] Joint doctrine describes these standoff approaches as antiaccess and area denial. Antiaccess typically refers to long-range capabilities that prevent the joint force from entering an area. Area denial typically refers to mid- and short-range capabilities that limit a force's freedom of maneuver once they are in an area. These standoff approaches make China and Russia capable of doing things to the U.S. joint force that we have been able to do to others with impunity since the end of the Cold War. One of the strategic impacts of peer-threat standoff approaches is an increase in the potential cost in terms of money, time, and lives to the joint force and our allies in the event of armed conflict, effectively increasing the threshold at which the United States might respond to provocation with force. By diluting the effectiveness of conventional deterrence, adversaries have greater freedom of action to expand aggression and conduct malign activities, including information warfare. China and Russia continue to

Lt. Gen. Milford Beagle Jr., U.S. Army, is the commanding general of the U.S. Army Combined Arms Center on Fort Leavenworth, Kansas, where he is responsible for integrating the modernization of the fielded Army across doctrine, organization, training, materiel, leadership, personnel, facilities, and policy. He has served in multiple leadership capacities from platoon through division level, and his career deployments span the globe from Hawaii to the Republic of Korea. He previously served as the commanding general of 10th Mountain Division (Light). He holds a BS from South Carolina State University, an MS from Kansas State University, an MS from the School of Advanced Military Studies, and an MS from the Army War College.

Col. Richard Creed, U.S. Army, retired, is the director of the Combined Arms Doctrine Directorate at Fort Leavenworth, Kansas, and one of the authors and editors of both the 2017 and 2022 editions of Field Manual 3-0, *Operations*. He holds a BS from the U.S. Military Academy, an MS from the School of Advanced Military Studies, and an MS from the Army War College. His previous assignments include G-3 of the 2nd Infantry Division, and he has completed tours in Germany, Korea, Bosnia, Iraq, and Afghanistan. He commanded at company, battalion, and brigade levels.

Lt. Col. Matt Farmer, U.S. Army, retired, is a doctrine developer in the Combined Arms Doctrine Directorate at Fort Leavenworth, Kansas, and one of the authors of the 2022 edition of Field Manual 3-0, *Operations*. He holds a BS from the U.S. Military Academy, an MS from the National Defense Intelligence University, and an MS from the School of Advanced Military Studies. His assignments include tours in Europe, Egypt, Iraq, Afghanistan, and Korea.

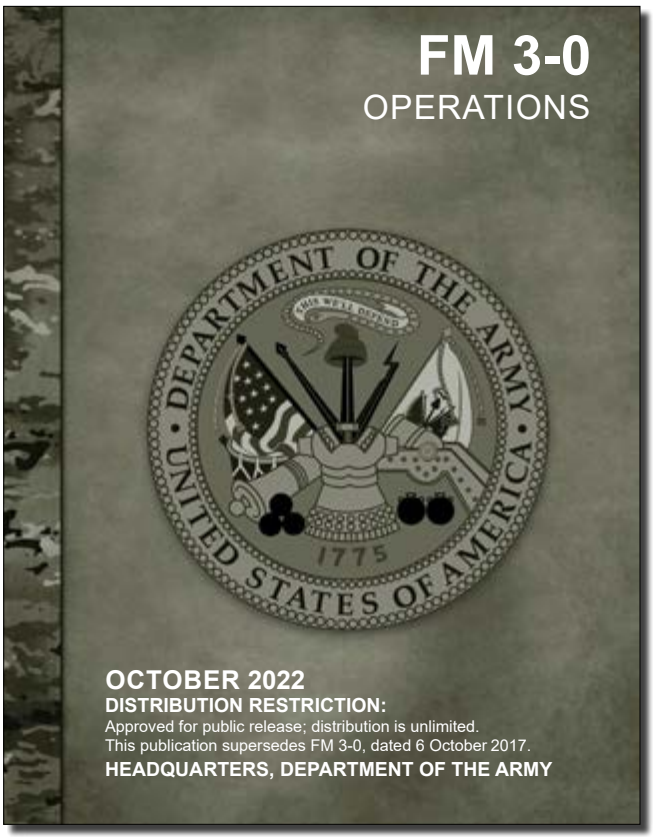
advance their interests with limited risk of having to engage U.S. military forces in close combat. The development of multidomain operations took these strategic considerations into account.[5]

At the operational level, there are two basic fights relevant to Army forces: (1) the joint fight, enabled by Army capabilities, to defeat the enemy antiaccess and area denial approaches; and (2) the land fight, enabled by joint capabilities, to defeat enemy forces, control key terrain and populations, and accomplish national objectives for joint force commanders. Critical to both fights is the role of Army corps fighting as formations to defeat components of the enemy's integrated air defense system and overall integrated fires command.

The tactical challenge also has two components. First is how forward-postured forces will defend critical terrain and joint infrastructure at risk from no-notice enemy aggression and offensive action. Second is how Army forces will conduct expeditionary offensive operations against peer threats employing a layered deliberate defense enabled by global intelligence, surveillance, and reconnaissance capabilities. Threat defenses have many initial advantages, including time to prepare, lines of communications relatively close to their national borders, better understanding of terrain and populations, forces available, and the ability to rapidly mass high volumes of fires. During both defensive and offensive friendly operations, enemy forces will target friendly logistics and command and control (C2) nodes, degrade friendly communications through electromagnetic warfare, and target our will to fight through information warfare. Should deterrence fail, it is likely that Army tactical formations will need to fight and win with an ally while outnumbered and isolated from the rest of the U.S. joint force.

Meeting the Challenge: Multidomain Operations

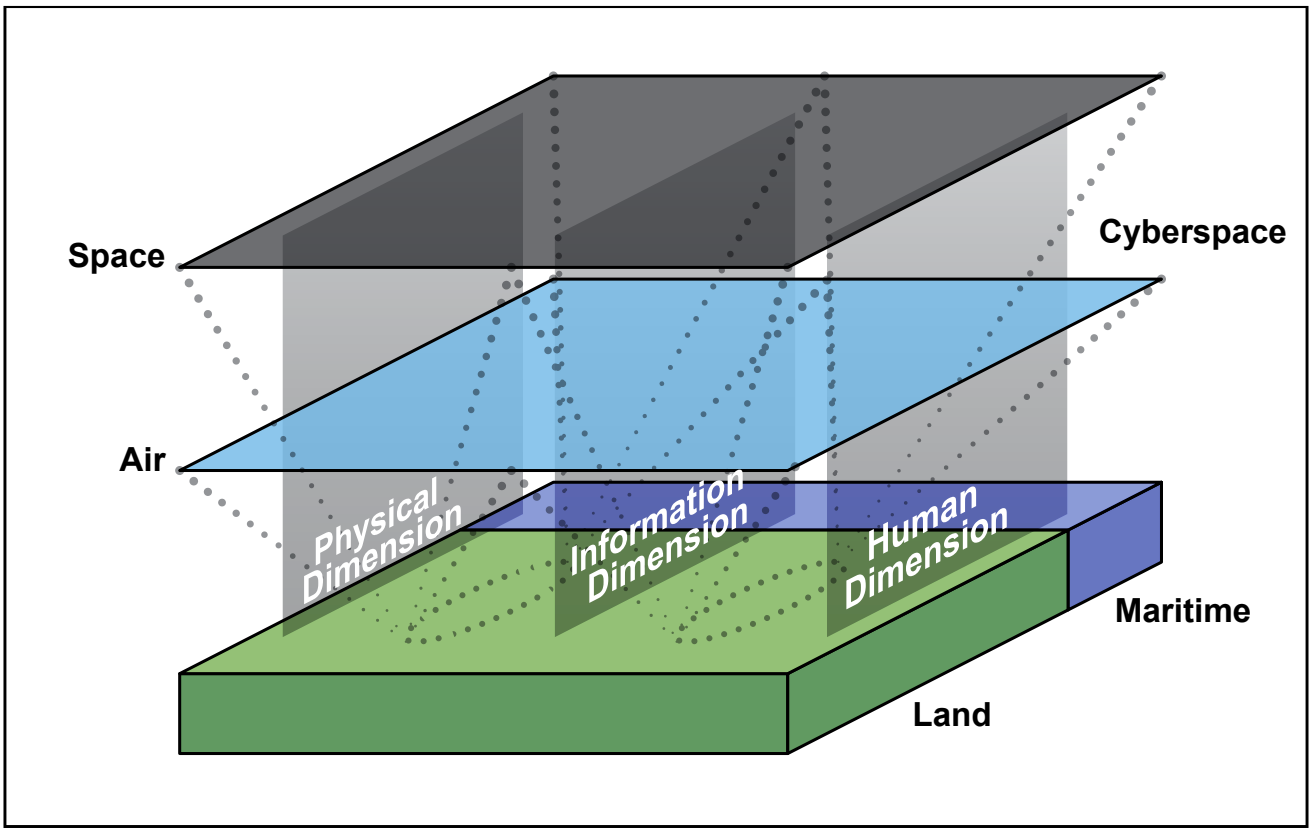
Multidomain operations are the Army's contribution to joint campaigns that achieve sustainable policy outcomes. All operations depend, in some way, on capabilities and operations through multiple domains. Multidomain operations apply at every echelon, though in different ways. Corps and above typically have the lead role in allocating or integrating joint and Army capabilities, which are inherently multidomain,



To read Field Manual 3-0, *Operations*, visit https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN36290-FM_3-0-000-WEB-2.pdf.

into their subordinate formations. Divisions may play an integrating role as well in some instances. However, even when a formation is not allocated joint capabilities, it must be aware of the threats posed by enemy capabilities from all domains and take appropriate measures to mitigate them. Preserving combat power requires a high level of situational awareness and physical exertion, which are imperatives in FM 3-0.

Multidomain operations are built on the foundation of a joint and combined arms approach to operations in a coalition environment. The operational concept emphasizes the need to understand the effects and processes for employing all available capabilities. FM 3-0 provides a model to help leaders view the operational environment through five domains, understood across three dimensions—physical, information, and human (see figure, page 12). Multidomain operations focus on large-scale combat operations but describe how Army forces integrate operations as part of joint campaigns during competition, crisis, and armed conflict in complementary and reinforcing ways. Four tenets and nine



(Figure from Field Manual 3-0, *Operations*)

Figure. Domains and Dimensions of an Operational Environment

imperatives guide the conduct of operations, providing options for how leaders apply and preserve combat power against specific challenges posed by peer threats. Multidomain operations emphasize the use of defeat mechanisms and defeating enemy forces in detail while maintaining the cohesion of friendly operations. FM 3-0 describes how Army forces integrate deep, close, support, and rear operations within and between echelons to generate combat power and employ it to the greatest possible effect against enemy forces.

Combined Arms

Expanding combined arms is at the core of what makes multidomain operations a step forward. The complementary and reinforcing effects created through the combined arms employment of capabilities from different domains are unlocked through the integration and synchronization that occurs during the operations process. Integration is about determining which formations at which echelon require which capabilities to achieve their assigned objectives, and then allocating those capabilities. Synchronization is about applying combinations of those capabilities in time and space to create dilemmas for which the enemy has no good solutions. Leaders integrate and synchronize conventional forces, multinational forces, special operations forces, irregular forces, and all available unified action partners. Each contributing member of the expanded combined arms team has strengths that the others can reinforce and limitations that the others can mitigate. Understanding how different types of capabilities work together and employing them in ways the enemy does not expect is critical to success against opponents expecting us to be predictable. Leaders must understand how their formation and capabilities enable the higher headquarters, adjacent units, and the joint campaign. They also must understand

how capabilities and formations they do not control can enable their operations.

Success demands leader commitment to the highest possible level of subject-matter expertise across branches and occupational specialties. Leaders must further understand how to balance effectiveness and efficiency when integrating or allocating capabilities across Army echelons in a risk-informed manner. This reality means that our point of departure, regardless of at what echelon one is assigned, is a clear understanding of the operational environment in terms of friendly and adversary assigned areas and their areas of influence.

Understanding the Operational Environment: Domains and Dimensions

Multidomain operations requires that leaders understand their operational environment through the five domains and their physical, information, and human dimensions. "A *domain* is a physically defined portion of an operational environment requiring a unique set of warfighting capabilities and skills."[6]

Leaders do not need to understand every technical aspect of joint or Army capabilities, but they need to understand how they can be employed in mutually beneficial ways, and how to request those capabilities to support operations on land. Likewise, Army leaders at echelons above brigade need to advocate for the employment of Army capabilities to create freedom of action for the other service components of the joint force.

Although physical characteristics define the domains, multidomain operations emphasize the importance of factors beyond the physical. FM 3-0 notes that "understanding the physical, information, and human dimensions of each domain helps commanders and staffs assess and anticipate the impacts of their operations."[7]

Although most Army operations initiate action through the physical dimension, they ultimately must influence (through the information dimension) to impact the adversary's will (the human dimension). FM 3-0 also emphasizes the continued importance of intangible factors for friendly forces, like leadership and the mission command approach to C2.

See Yourself: Generating and Applying Combat Power

The warfighting functions and dynamics of combat power play a key role in helping leaders see their units and understand how to employ capabilities against the enemy to best effect. FM 3-0 identifies six warfighting functions:

- Command and Control
- Movement and Maneuver
- Intelligence
- Fires
- Sustainment
- Protection[8]

FM 3-0 modifies the combat power model. It aligns the definition of combat power with the joint definition and emphasizes what lethal and disruptive means can be applied against the enemy. It changes the components of combat power from "elements" to "dynamics" to reinforce the idea that combat power consists of variables that are interactive and subject to changes in the environment. FM 3-0 deliberately differentiates the dynamics of combat power from the warfighting functions. It defines combat power as "the total means of destructive and disruptive force that a military unit/formation can apply against an enemy at a given time (JP 3-0)" and identifies the dynamics of combat power as the following:

- Leadership
- Firepower
- Information
- Mobility
- Survivability[9]

See the Enemy: Threats and Their Methods

Army forces conduct operations oriented on the threat. The threat is always thinking and adapting, so understanding the threat is a continuous requirement during operations. FM 3-0 notes, "Threats faced by Army forces are, by nature, hybrid. They include individuals, groups of individuals, paramilitary or military forces, criminal elements, nation-states, or national alliances."[10]

China and Russia combine five broad methods to achieve their objectives during competition, crisis, and conflict:

Chinese troops parade during the Vostok-2018 military drills on 13 September 2018 at Tsugol Training Ground in Siberia, not far from Russia's borders with China and Mongolia. (Photo by Mladen Antonov, Agence France-Presse)

- *Information warfare* is the use of information activities such as cyberspace operations, electronic warfare, psychological operations, disinformation campaigns, and other deception operations to achieve objectives.
- *Systems warfare* is the use of networked mutually supporting systems, like Integrated Air Defense Systems and the Integrated Fire Complexes, to achieve objectives. Threats protect their own systems while disintegrating their opponent's systems.
- *Preclusion* is the use of standoff approaches to deny the joint force access to strategically important areas.
- *Isolation* is the use of national instruments of power to separate coalition partners, components of the joint force, or forward positioned forces from external support.
- *Sanctuary* is the positioning of threat forces beyond the reach of friendly forces.[11]

China and Russia apply the threat methods in different ways at the operational and tactical levels. Leaders use the threat methods to better understand enemy tactics, anticipate enemy actions, and evaluate friendly courses of action.

Operations During Competition, Crisis, and Armed Conflict

Multidomain operations are the contribution of Army forces to joint operations and typically involve allies and partners. Harnessing the advantages provided by the joint force and our multinational partners is a critical consideration in every context. The strategic contexts—*competition, crisis,* and *armed conflict*—help commanders understand their role in the context of a joint campaign and prepare for their missions. During competition, Army forces counter adversary activities and demonstrate warfighting credibility through training and interoperability with allies and partners. This activity sets conditions for successful combat operations, recognizing that there is no extra time to prepare for conflict—Army forces deter conflict by

continuously preparing for it. During crisis, Army forces provide options to joint force commanders to deter further aggression and protect national interests. During armed conflict, Army forces defeat enemy forces and control key terrain and populations. Regardless of strategic context, Army forces continuously consolidate gains in support of the joint force so that it achieves sustainable political outcomes.[12]

Fundamentals of Multidomain Operations: Tenets and Imperatives

Tenets and imperatives characterize effective operations and help guide leaders through the operations process.

Tenets. Four tenets characterize desirable qualities of operations: *agility*, *convergence*, *endurance*, and *depth*. They all link to the core idea of combined arms employment of all available combat power from multiple domains to create and exploit advantages.

Agility encompasses many considerations. Agile commands transition rapidly between phases, contexts, and task organizations. Agile leaders devise operational approaches designed to exploit fleeting windows of opportunity. Agile forces rapidly disperse to hinder enemy targeting, rapidly concentrate when required, and adapt more rapidly than the enemy as conditions change.

Convergence ensures that echelons above brigade employ all available Army and joint capabilities to maximize relative combat power in ways that create opportunities to defeat capable enemy forces. Convergence creates opportunities for maneuver and close operations but requires agile Army forces to rapidly exploit those opportunities.

Endurance reflects the ability to absorb the enemy's attacks and press the fight over the time and space necessary to accomplish the mission. It is a function of protection, sustainment, and managing tempo.

Depth applies combat power throughout the enemy's formations and the operational environment, securing successive operational objectives and consolidating gains for the joint force. Operations in depth disrupt the enemy's preferred approach, disintegrate the interdependent elements of enemy systems, and make enemy forces vulnerable to defeat in detail.[13]

Imperatives. Nine imperatives describe what units must do to win at acceptable cost on the modern battlefield. They are derived from the principles of war but are tailored to current challenges. They should heavily inform how we develop our leaders and train our formations because they must drive the necessary cultural change to prevail during large-scale combat operations in the twenty-first century. The nine imperatives are as follows:

- See yourself, see the enemy, and understand the operational environment.
- Account for being under constant observation and all forms of enemy contact.
- Create and exploit relative physical, information, and human advantages in pursuit of decision dominance.
- Make initial contact with the smallest element possible.
- Impose multiple dilemmas on the enemy.
- Anticipate, plan, and execute transitions.
- Designate, weight, and sustain the main effort.
- Consolidate gains continuously.
- Understand and manage the effects of operations on units and soldiers.[14]

The second imperative—account for constant enemy observation and all forms of contact—is one that affects every rank and military occupational specialty in our Army. It addresses the importance of not presenting lucrative targets to enemy fires. As FM 3-0 succinctly states, "That which can be detected can be targeted for attack and killed."[15] Units must employ combinations of capabilities and techniques to ensure dispersion, cover, concealment, camouflage, masking of electromagnetic radiation signatures, operations security, and deception. Accounting for continuous enemy observation operationalizes protection, which is ultimately an outcome requiring continuous leader attention to the realities of the increasingly transparent operational environment.[16]

Defeating Enemy Forces

> *Defeat in detail is concentrating overwhelming combat power against separate parts of a force rather than defeating the entire force at once.*[17]

Defeating an evenly matched, adaptive enemy operating with complex capabilities and formations in a single, decisive effort is highly unlikely. FM 3-0 therefore provides an approach to defeating enemy forces in detail. Defeating enemy forces in detail allows commanders to bring superior combat power to bear against portions of a potentially superior enemy

force and the systems that enable it, like integrated fires commands and integrated air defense systems. Commanders apply combinations of defeat mechanisms to do so. As FM 3-0 describes, "Multidomain operations fracture the coherence of threat operational approaches by repeatedly destroying, dislocating, isolating, and disintegrating their interdependent systems and formations, and exploiting the opportunities to defeat enemy forces in detail."[18]

Operational Framework

Battlefields are chaotic environments. Enemy and friendly forces are intermingled, with friendly units often separated by long distances or operating under different commands. Commanders use the operational framework to help impose order and focus on the forces they control and to manage the application of violence. FM 3-0 describes the operational framework as "a cognitive tool used to assist commanders and staffs in clearly visualizing and describing the application of combat power in time, space, purpose, and resources in the concept of operations (ADP 1-01)."[19] The three models commonly used to build an operational framework are *assigned areas; deep, close, and rear operations; and main effort, supporting effort, and reserve*.[20]

> The focus on 'operations' in this version of FM 3-0 helps clarify a unit's role in terms of purpose—areas define a unit's location; operations define a unit's purpose.

Leaders should not take an overly rigid approach to the operational framework. They should only use models when they apply and should feel free to adapt a model to the unique requirements of a situation. If an entirely different model better suits their needs, then they must coordinate higher and lower to ensure each echelon understands and follows the same approach. When adapting models, leaders must ensure that their framework still nests with their higher echelon's framework.

Commanders consider mutual support between subordinate forces when assigning areas. Mutual support can include supporting ranges between weapons and capabilities. It also includes consideration of the supporting distances between units. Corps and divisions operating along multiple axes will have noncontiguous subordinate formations. When a higher echelon assigns noncontiguous assigned areas, it maintains responsibility for the risk associated with the areas for which it does not assign responsibility. An assigned area may be an area of operations, a zone, or a sector depending on the type of operation and level of control required by the higher echelon. Assigned areas should be large enough to support subordinate maneuver and their ability to distribute forces to mitigate the effects of enemy targeting. However, they should not extend too far beyond subordinate areas of influence, which would impose uncertain or excessive levels of risk on the subordinate formation. When an echelon retains areas it also retains the associated risk with those areas. During noncontiguous operations, leaders must continuously assess the risk in those retained areas, especially regarding C2 and sustainment nodes.

Within assigned areas, commanders organize their operations in terms of time, space, and purpose by synchronizing deep, close, support, and rear operations. Divisions and higher may also echelon their formations according to deep, close, support, and rear areas because of the size and scale of their operations during large-scale combat. The focus on "operations" in this version of FM 3-0 helps clarify a unit's role in terms of purpose—areas define a unit's location; operations define a unit's purpose.

Seizing and defending contested land areas require close operations and typically involve close combat or the threat of close combat. Close combat is the highest risk activity for conventional forces. Deep and rear operations are generally conducted to enable success during close operations and establish favorable conditions for maneuver in close combat. "*Deep operations* are tactical actions against enemy forces, typically out of direct contact with friendly forces, intended to shape future close operations and protect rear operations.

… *Close operations* are tactical actions of subordinate maneuver forces and the forces providing immediate support to them, whose purpose is to employ maneuver and fires to close with and destroy enemy forces. …

Rear operations are tactical actions behind major subordinate maneuver forces that facilitate movement, extend operational reach, and maintain desired tempo."[21]

> The land component may often support the air and maritime components, which is a switch from what Army forces have been accustomed to in recent decades.

Because Army forces will fight in contested communications environments, the mission command approach to command and control is more essential than ever. One way in which commanders enable disciplined initiative and the ability to assume risk is by describing each echelon's role in time, space, and purpose. FM 3-0 provides some general considerations:

> During large-scale combat operations, brigade combat teams (BCTs) and divisions generally focus on defeating enemy maneuver formations. Corps and higher echelons generally focus on defeating enemy integrated air defense systems and portions of the enemy's integrated fires command according to the JFC [joint force commander's] plan and priorities.[22]

Corps fight their divisions, divisions fight their brigades, and brigades fight their battalions. Each higher echelon seeks to set conditions for its subordinate formations to achieve their assigned objectives while providing them the resources, guidance, and situational awareness to do so. Corps and divisions fight as formations, which requires an integrated approach to deep, close, support, and rear operations—no echelon can afford to have a myopic focus on one part of the battlefield.

Consolidating Gains

The 2017 FM 3-0 introduced the idea of consolidating gains, and the 2019 Army Doctrine Publication 3-0, *Operations*, continued to clarify the necessity to do so. The 2022 version of FM 3-0 affirms the importance of continuous consolidation of gains as an imperative and key consideration for operations during competition, crisis, and armed conflict. Consolidating gains achieves the ultimate purpose of the operations Army forces conduct. It is not a phase—it is the exploitation of tactical objectives for strategic outcomes. Consolidating gains requires leaders to conduct operations with the end state in mind and take the actions required to achieve that overall end state as rapidly as possible. Consolidating gains starts with a clear description of the purpose of an operation and shared understanding for how to achieve it. Then, as units achieve objectives and defeat enemy forces, they take action to make their gains more permanent. Consolidating gains may start out as a small unit consolidating on an objective. It can include a division assigning a brigade the mission to defeat a bypassed enemy force to set conditions for stability operations. Asking an ally or partner to conduct essential stability tasks in an urban area would be a potentially effective means of consolidating gains.

Higher echelons request resources to increase the scale and accelerate the tempo of consolidating gains. Their access to host nation forces, joint fires, security force assistance capabilities, special operations forces, civil affairs, public affairs, engineers, and space and cyberspace capabilities provides opportunities to coalesce and expand the success of subordinate units. During major campaigns and operations, consolidating gains is the yardstick that drives toward transition of responsibility for areas and populations to other legitimate authorities and, ultimately, sustainable policy outcomes. During postconflict competition, Army forces continue to consolidate gains for the joint force, expanding or maintaining stability of the desirable conditions.

Maritime Environments

A decade after the Pacific Pivot, it is critical that Army doctrine begin to account for the unique considerations of operating in maritime environments like the Indo-Pacific theater.[23] Chapter 7 addresses many of

those considerations, and likewise describes aspects of operating in the Arctic, which is also heavily influenced by the maritime environment.

Operating in maritime environments requires the employment of joint and Army capabilities in mutually supporting ways. Sustainment, communication, protection, and mobility are challenging for land forces in maritime environments and require an even higher level of integration with the joint force. The land component may often support the air and maritime components, which is a switch from what Army forces have been accustomed to in recent decades. Maritime operations depend on land forces to secure bases, ports, and maritime choke points. Land forces enable air and maritime operations with surface-to-surface and surface-to-air fires while allowing the joint force to retain or seize critical landmasses and infrastructure.[24]

Contested Deployments

Army forces should expect challenges by the threat from home station all the way to their assembly areas overseas. Since World War II, "U.S. military forces conducted uncontested and generally predictable deployments from home stations to operational theaters because our enemies lacked the capability to significantly affect deploying units at home station or while in transit to a theater of operations. This is no longer the case."[25] Annex C in FM 3-0 describes how we plan to deal with peer threats able to observe, disrupt, delay, and attack U.S. forces at any stage of force projection, including while still positioned at home stations in the United States and overseas. "Commanders and staffs must therefore plan and execute deployments with the assumption that friendly forces are always under observation and in contact"—a multidomain operations imperative.[26]

Multidomain Operations into the Future

FM 3-0 is a catalyst for change across the Army. Multidomain operations doctrine will drive an update to other Army doctrine and influence future force design. Professional military education must account for its tenets, imperatives, and approach to the operational environment. Multidomain operations will drive changes to collective training at unit home stations and combat training centers. Interoperability with allies and partners is more important than ever before and should address technical, human, and procedural requirements. Our focus must be on being a good ally or partner, not only having allies and partners.

Just as AirLand Battle doctrine drove a deeper level of air-ground integration by the joint force, multidomain operations will drive the continued development of tactics, techniques, and procedures for integrating maritime, space, and cyberspace capabilities in support of operations on land. Organizations, such as the multidomain task force and the theater fires command are first steps. Units must develop and experiment with solutions for how to integrate new capabilities with existing Army and joint structures and processes. The experimentation may result in new or adjusted Army and joint processes or adjustments to our existing organizations. Whatever changes we make as an Army and joint force must be informed by a shared understanding of how we fight, however. That shared understanding starts with our doctrine.

This version of multidomain operations is not the "end of doctrine." It will continue to evolve as Army forces learn, train, and refine the ideas in FM 3-0 to reach the Army of 2030. Future versions of multidomain operations will continue to update key ideas and account for new capabilities, informed by the experience of the force.

Patton used the metaphor of an orchestra and the role of each instrument in his "Musicians from Mars" speech to describe the combined arms approach for how he wanted to fight. Across the globe and two millennia earlier, Sun Tzu identified the advantage of combinations in his axioms on music, color, and taste:

> There are not more than five musical notes,
> yet the combinations of these five give rise to
> more melodies than can ever be heard.
> There are not more than five primary colors,
> yet in combination they produce more hues
> than can ever been seen.
> There are not more than five cardinal tastes,
> yet combinations of them yield more flavors
> than can ever be tasted.[27]

We know that the observations of these icons of military thought do not provide a magic bullet for how to win wars. Their resonance over time, however, suggests that the idea of employing combinations during war in ways that surprise and overwhelm

enemy forces is more than a passing fad. It is, in fact, part of the very fabric of what makes a military organization successful. Leaders who are masters of their craft, able to incorporate all available capabilities in ways that are surprising and overwhelming to enemy forces, can take a modest update to doctrine and turn it into an overwhelming advantage provided by Army forces to the joint force. ■

Notes

Epigraph. George S. Patton, quoted in Center for Army Lessons Learned (CALL) Publication 90-6, *The Musicians of Mars: A Story of Synchronization for the Company/Team Commander* (Fort Leavenworth, KS: CALL, June 1990), 4.

1. Huba Wass de Czege, "Lessons from the Past: Making the Army's Doctrine 'Right Enough' Today," Institute of Land Warfare Publication No. 06-2 (Arlington, VA: Association of the United States Army, September 2006), 15, accessed 1 December 2022, https://www.ausa.org/sites/default/files/LPE-06-2-Lessons-from-the-Past-Making-the-Armys-Doctrine-Right-Enough-Today.pdf. This essay provides a guide for how to develop a successful operations doctrine. In it, Wass de Czege noted the importance of minimizing change in doctrine so that it is easier for the force to assimilate it. He wrote that "many key ideas of AirLand Battle merely require recultivation."
2. Field Manual 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2022), 1-2.
3. Ibid., 1-3.
4. Army Techniques Publication 7-100.3, *Chinese Tactics* (Washington, DC: U.S. GPO, 2021), 1-10.
5. FM 3-0, *Operations*, 1-3–1-4.
6. Ibid., 1-18.
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9. Ibid., 2-3.
10. Ibid., 2-6.
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12. Ibid., 1-14–1-16.
13. Ibid., 3-2–3-7.
14. Ibid., 3-8.
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16. Ibid., 3-10–3-13.
17. Army Doctrine Publication 3-0, *Operations* (Washington, DC: U.S. GPO, 2010), 3-19.
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19. Ibid., 3-23.
20. Ibid.
21. Ibid., 3-27–3-31.
22. Ibid., 6-10.
23. For more on the Pacific Pivot, see Christopher H. Robertson, *The Obama Administration's Pacific Pivot Strategy: An Assessment* (Fort Leavenworth, KS: U.S. Army School for Advanced Military Studies, 25 May 2017), accessed 1 December 2022, https://apps.dtic.mil/sti/pdfs/AD1039909.pdf.
24. FM 3-0, *Operations*, 7-1.
25. Ibid., C-1.
26. Ibid.
27. Sun Tzu, quoted in Thomas R. Phillips, ed., *Roots of Strategy* (Harrisburg, PA: Stackpole Books, 1985), 28.

To learn more about the Combined Arms Doctrine Directorate (CADD), visit https://usacac.army.mil/organizations/mccoe/cadd.

M1A2 Abrams tanks assigned to 1st Battalion, 68th Armor Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, fire during a Defender Europe 22 live-fire exercise 27 May 2022 in Drawsko Pomorskie, Poland. Defender Europe 22 is a series of U.S. Army Europe and Africa multinational training exercises taking place in Eastern Europe. The exercises demonstrate the ability of U.S. forces to conduct large-scale ground combat operations across multiple theaters in support of NATO, communicating U.S. resolve in the region and deterring adversarial aggression. (Photo by Capt. Tobias Cukale, U.S. Army)

Reframing Operational Art for Competition

Maj. Steven R. Chase, U.S. Army

Operational art is a fundamental concept in contemporary U.S. military planning, but there are shortfalls when applying operational art doctrine in an environment with increasing interstate competition. Those shortfalls demonstrate a need for reframing how operational art enables competition short of conflict. Adopting *communicate, coerce, conciliate,* and *cooperate* as competition mechanisms addresses that need. Lessons from the Korean War and its aftermath validate the need for those mechanisms, with reinforcing observations from modern conflicts. The competition mechanisms complement existing

doctrinal frameworks, allowing a greater range for conceptual planning in operational art.

Operational Art and Competition in Army Doctrine and Joint Integrated Campaigning

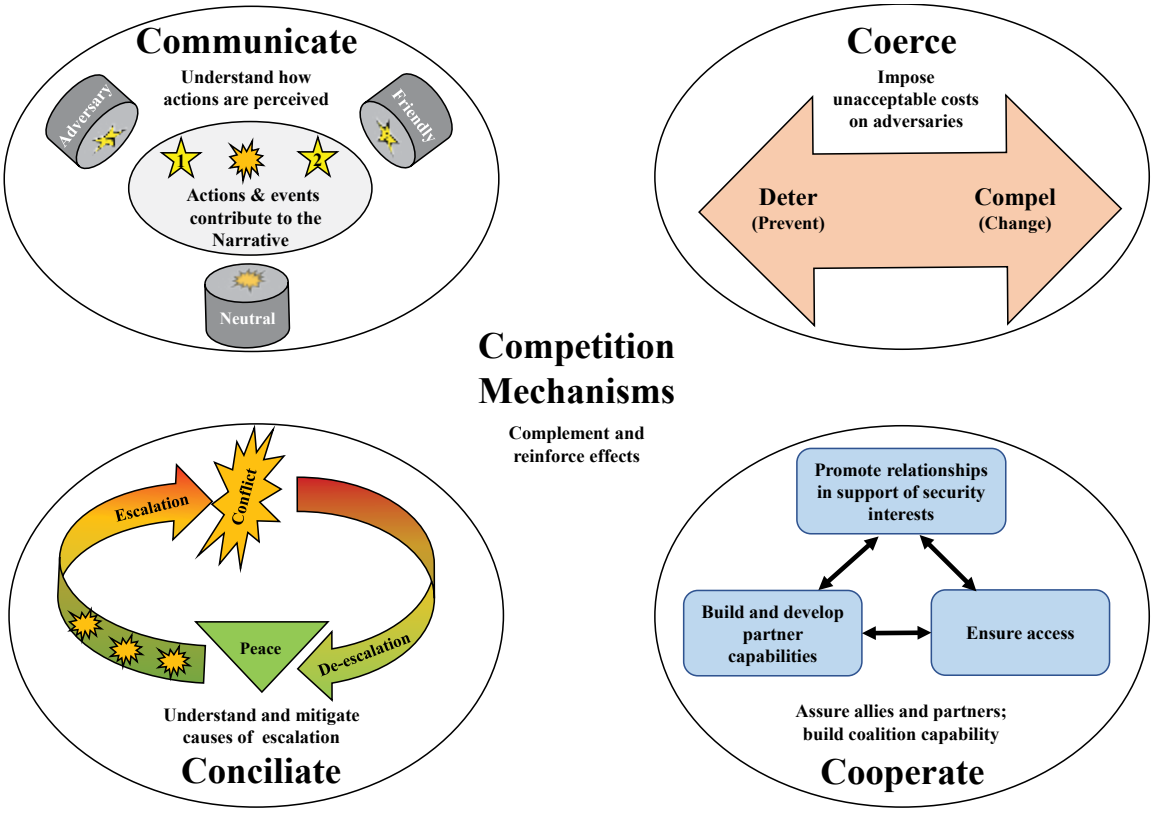
The 2022 *National Security Strategy* highlights the changing distribution of power across the world, emphasizing competition with China and challenges from other state actors.[1] The U.S. Army updated doctrine accordingly in Field Manual (FM) 3-0, *Operations*, defining "operations during competition below armed conflict."[2] While FM 3-0 provides a comprehensive description of the Army's contribution to strategic objectives during competition, discussion of operational art remains focused on the application of defeat mechanisms during conflict.[3] Joint doctrine includes mention of competition mechanisms, and the *Joint Concept for Integrated Campaigning* provides an example suite of competition mechanisms for operations across the competition continuum.[4] However, joint doctrine does not develop a conceptual framework for competition that highlights the need for escalation management. Army and joint doctrine define and describe operations in interstate competition, but the corresponding conceptual frameworks defined in operational art require modification to support those operations.

Army Doctrine Publication (ADP) 3-0, *Operations*, states that for Army forces, "Operational art is the pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose."[5] Operational art is a cognitive approach, supporting conceptual planning that informs detailed planning. Conceptual planning is critical to understanding the increasingly complex interstate competition observed by the Army and the joint force.[6] FM 3-0 is nested with the definition of operational art from ADP 3-0 and describes how commanders use operational art to develop an operational approach, "the main idea that informs detailed planning."[7] However, its discussion of operational art focuses on defeat mechanisms during conflict. FM 3-0 describes commander actions during competition as setting conditions and demonstrating the capability to impose defeat mechanisms on an adversary.[8] Focus on defeat mechanisms in operational art primes the reader for a conflict-centric mindset. Like Daniel Kahneman's discussion on mental association, a detailed definition of defeat mechanisms without discussion of competition mechanisms prompts planners to associate operational art with conflict more than competition.[9] That association is necessary when competition escalates to armed conflict, but it constrains creativity when applying operational art below the threshold of armed conflict. Additionally, with the *National Security Strategy* aiming to avoid competition escalation into conflict, Army doctrine should consider escalation management and the mechanisms that enable it.[10]

In contrast to Army doctrine, the *Joint Concept for Integrated Campaigning* defines a conceptual framework for competition and provides a suite of example competition mechanisms.[11] However, the competition framework of "contest, counter, and improve" has limited mention of the necessity of escalation management among nuclear-armed powers; *Integrated Campaigning* only specifically mentions the threat of nuclear weapons from North Korea.[12] While *Integrated Campaigning* does acknowledge the risk of unintended escalation during competition, its framework and competition mechanisms do not call out an element dedicated to de-escalation.[13] That oversight generates risk when using military forces in interstate competition. It highlights the need to develop a conceptual framework for competition with mechanisms that recognize how military forces can advance strategic objectives short of armed conflict with nuclear-armed adversaries.

Applying deterrence, compellence, and

Maj. Steven Chase, U.S. Army, is an engineer assigned as the operations officer for the 588th Brigade Engineer Battalion, 3rd Armored Brigade Combat Team, 4th Infantry Division. His most recent assignments include planner on the 4th Infantry Division staff, operations officer in the Office of the Deputy Chief of Staff Engineer in U.S. Army Europe and Headquarters Company commander in the 2nd Battalion, 8th Cavalry Regiment. He holds a bachelor's degree in mechanical engineering from the University of South Carolina, a master's degree in engineering management from the Missouri University of Science and Technology, and a master's degree in military operations from the U.S. Army School of Advanced Military Studies.



(Figure by author)

Figure. Proposed Competition Mechanisms

narrative theory in conjunction with doctrine to the Korean War reveals four candidate mechanisms: communicate, coerce, conciliate, and cooperate. The figure depicts the proposed framework for those mechanisms. This framework utilizes the fundamental coercion of military force, either deterrent or compellent, while acknowledging the need to manage escalation through conciliation and build relative advantage through cooperation with allies and partners.[14] While deterrence theory often encompasses conciliatory actions, communication in conjunction with force employment, and cooperation with allies, this framework specifies each to highlight their importance during competition with adversaries. Conciliation, usually in the form of assurances and concessions, underscores the requirement for escalation management to prevent conflict.[15] Cooperation describes the value of allies and partners in creating a relative advantage in multipolar competition. The fourth mechanism, communication, acknowledges how actions and decisions shape competitor perceptions in the operational environment.[16] In combination, those mechanisms provide a conceptual framework for applying military force in competition while accounting for the need to manage escalation and build coalitions. The following sections define each mechanism in detail and then describe how they complement each other in combination.

Communicate

The communicate mechanism focuses on how tactical, operational, and strategic actions constitute a narrative. The invasion of Korea in 1950 suggests the importance of that mechanism. Actions and decisions form the narrative that shape perception in friendly, neutral, and adversarial parties.[17] That perception is a vital component of the competition-to-conflict continuum.[18] For a narrative to communicate the strategic intent, messages must repeat in each action and event; they must communicate a cohesive theme.[19] Actions surrounding the Korean War's initial

hostilities demonstrated a failure to communicate a deterrent narrative to North Korea and its patron, the Soviet Union.

The period leading up to North Korea's invasion in June 1950 demonstrated that the U.S. narrative was one of indifference. Redeployment of American combat troops from Korea in 1949 showed decreased U.S. resolve.[20] Secretary of State Dean Acheson's statement that excluded South Korea from the U.S. defense perimeter was strategic messaging contributing to the same narrative.[21] Joseph Stalin's decision to support North Korea's invasion was based partly on those signals from the United States.[22] The lack of forward forces in Korea, coupled with strategic messaging, conveyed a narrative that encouraged aggression instead of deterring it. Shortly after North Korea's invasion, American intervention reversed that perception and significantly contributed to South Korea's defense.[23] However, the Army's multidomain operations (MDO) concept anticipates that future conflicts will not allow a similar reversal in commitment.

The U.S. Army's MDO concept anticipates that adversaries in the future will attempt to consolidate gains and de-escalate before U.S. expeditionary forces arrive.[24] Rapid, limited conflicts like Russia's invasion of Georgia in 2008 and Crimea in 2014 support that prediction. While Russia's 2022 invasion of Ukraine has been more prolonged than previous conflicts, Russian strategic leaders' underlying assumptions appeared similar to those from 2008 and 2014.[25] MDO and contemporary trends reinforce the Korean War lessons that a cohesive narrative is essential to communicating resolve in competition. Yet, communicating a narrative is not the only consideration; competition also requires cost imposition through coercion.

Coerce

Competition requires a credible threat against adversary actions.[26] Coercion is the mechanism for that threat, and North Korean decision-making before the invasion in 1950 suggests that imposing unacceptable costs is necessary in competition. Coercion consists of a sliding scale between two types of actions.[27] The first is deterrence, or dissuading aggression.[28] The second is compellence, or forcing an adversary to act against their will.[29] In each application of military force, the adversary's assessment of the credibility of the threat matters.[30] Forces effective in coercing one competitor may not work against another, despite common misperceptions that certain types of military assets have universal coercive value.[31] The composition of the South Korean army leading up to June 1950 demonstrated how the adversary's assessment of those forces encouraged escalation, contrary to U.S. perception of the region.

North Korean decision-making in the summer of 1950 considered U.S. airpower but continued with invasion planning focused on ground force capabilities.[32] American policy decisions limited the U.S. military presence in Korea, based on presumptions of the deterrent value of naval and air forces in addition to false assumptions on the credibility of South Korean forces.[33] Despite U.S. policy makers' thoughts on the security situation, Kim Il-sung based his invasion criteria on ground force overmatch directly across his border.[34] The lesson from the 1950 invasion is not that U.S. policy was wrong, but that American assumptions ignored North Korea's perception of the possible costs imposed by South Korea's army.[35] Kim Il-sung's decisions highlight that coercion is an essential component of competition, a notion echoed in MDO.

The Army's MDO concept seeks to build credibility through expanding its network of allies and partners in addition to developing and demonstrating capabilities.[36] The value of demonstrated capability was shown in the Second Nagorno-Karabakh War. Azerbaijan's extensive military modernization tipped the balance of power in their favor, while Armenia's atrophied military capability presented low costs to an invasion.[37] MDO and the Nagorno-Karabakh War highlight a lasting lesson from the Korean War: coercion is a necessary addition to operational art's cognitive approach in competition.

Cooperate

The third competition mechanism is cooperation. *The National Security Strategy* recognizes cooperation with allies and partners as the United States' most important asset during an era of strategic competition.[38] This mechanism articulates the requirement to support nonantagonists while coercing adversaries.[39] Section 301 of Title 10 in the U.S. Code defines three purposes of security cooperation: "build and develop allied and friendly security capabilities …, provide the armed forces with access …, and build relationships that

promote specific United States security interests."[40] U.S. Army doctrine echoes the importance of security cooperation during competition in FM 3-0.[41] While demonstrations, a show of force, or other actions with military forces may not achieve a coercive effect, they may still assure allies or otherwise ensure access in a region. The U.S. response following North Korea's seizure of the USS *Pueblo* in 1968 demonstrated such an instance and the importance of cooperation, even if it did not have a compellent effect on North Korea.

On 23 January 1968, North Korean forces seized the intelligence-collection ship USS *Pueblo* in international waters, along with its eighty-three-man crew.[42] A North Korean raid several days prior on the Blue House, the residence of the president of South Korea, compounded the situation and created tension between the United States and South Korea.[43] South Korean military and civilian leaders signaled an intent to withdraw their forces from Vietnam and potentially "go north," escalating conflict with North Korea.[44] To assure South Korea of American commitment to the alliance, despite limited available forces from the conflict in Vietnam, Operation Formation Star provided a show of force of naval forces in the region.[45] The operation did not compel North Korean forces to release the prisoners of the USS *Pueblo*, later resolved through negotiations. However, it did assure the South Koreans and prevent an escalation on the peninsula.[46] The incident highlights that during competition, cooperative actions that promote relationships with allies but do not necessarily have a significant effect on adversaries are still a necessary application of military force. A modern example of the importance of cooperation during competition is Ukraine's leverage of cooperative actions in response to Russia's invasion in 2022.

In the opening days of Russia's invasion of Ukraine in 2022, Ukrainian forces used stockpiled ammunition and weapons to slow the Russian advance.[47] However, as the conflict continued, NATO support with weapons and munitions augmented shortfalls in their national stockpiles, and Western nations became their "strategic depth."[48] Security cooperation activities provided the industrial capacity to sustain large-scale operations in Ukraine and increased their operational and strategic endurance.[49] While not engaging in direct conflict with Russian forces, NATO countries continued to compete with Russia via security cooperation with Ukraine. Cooperation with Ukriane shows the importance of coalitions in competition and conflict, but conciliation is also necessary to manage escalation.

Conciliate

The final competition mechanism is conciliation. It is the requirement to acknowledge the causes of conflict and address them, demonstrated in the Korean War's Chinese intervention. Lawrence Freedman recognized that "removing the causes of conflict and disagreement" is an effective mechanism for managing escalation.[50] The threat of force is not the only mechanism in competition; assurances are sometimes more effective or necessary to de-escalate tensions with a potential aggressor[51] Examining U.S. actions leading up to the Chinese intervention in the Korean War offers insights for this mechanism.

In the wake of stunning success following the Incheon landing in September 1950, strategic leaders of the UN forces deliberated on whether to continue their counteroffensive north of the thirty-eighth parallel in Korea.[52] However, those deliberations ignored the increasing regional tensions and signals from China.[53] Conciliation in this instance was not about ceding victory to the North Koreans but recognizing that China's view of American actions was akin to encirclement.[54] Eventually, UN forces continued to maneuver north of Pyongyang and triggered Chinese intervention in October 1950, expanding the war.[55] The takeaway from China's intervention is that operational art must recognize the causes of conflict, especially tangential tensions that might escalate regional competition into conflict. The temporary ebb in hostilities in early October 1950 conveyed the Korean conflict as a local crisis, masking the broader regional competition with China. Similar considerations are apparent in MDO, where "avoiding global and strategic escalation" is a component of the military problem.[56]

The Syrian Civil War personifies Army MDO concerns about escalation. Despite calls for regime change, U.S. intervention focused on counter-Islamic State operations and excluded the use of force to remove President Bashar al-Assad from power.[57] The broader competition between external actors required some conciliation to prevent regional escalation, especially with Russia.[58] Expanding options, even for an adversary, can maximize the win-sets for all sides and prevent a wider war.[59] Army MDO and

the Syrian Civil War reinforce the Korean War lesson that conciliation is a necessary addition to operational art's cognitive approach.

Competition Mechanisms in Combination

Like defeat or stability mechanisms, the competition mechanisms work best in combination—reinforcing effects toward desired future conditions. In Korea, Operation Paul Bunyan in 1976 demonstrates how U.S. forces managed a crisis without escalating into a broader war. It highlights the deliberate use of all four competition mechanisms through the application of military force.

Following the 1953 armistice between North Korea and UN forces, the demilitarized zone along the thirty-eighth parallel was a flashpoint for cross-border hostility between North and South Korea.[60] One such escalation occurred in August 1976, when a disagreement over trimming a large tree near Panmunjom in the Joint Security Area (JSA) ended with North Korean (Korean People's Army, or KPA) soldiers attacking the U.S. and South Korean work party and killing two American officers.[61] While U.S. policy makers did not know if the KPA attack was a deliberate escalation or a heat of the moment brawl, tensions on the peninsula were high following Team Spirit 76 and other U.S.-led exercises that featured nuclear-capable fighter-bombers.[62] The U.S. response was Operation Paul Bunyan, a large-scale show of force coupled with ground forces cutting down the tree at Panmunjom; the operation did not execute military reprisals against KPA soldiers or facilities out of concern for escalation into a general war.[63] Kim Il-sung's response to the show of force was remarkably free of rhetoric. Subsequent concessions from North Korea on JSA operations suggested that the operation achieved the intended effect without escalating into a general war.[64]

Senior U.S. defense officials acknowledged a need to retaliate and demonstrate resolve against North Korean aggression, exercise restraint, and prevent escalation into a large-scale conflict.[65] The subsequent operation demonstrated how combining the proposed competition mechanisms resulted in favorable conditions for the United States without escalating in the broader context of the Cold War. All the while, leaders at echelon recognized the need to continually assess the situation and reframe their approach.[66]

Operation Paul Bunyan demonstrated effective strategic communication and a cohesive narrative through the tactical actions during the operation. Before the Chinese intervention in 1950, the United States relied on intermediaries for diplomatic communication, increasing the likelihood of misapprehension observed in earlier examples.[67] In 1976, the United States had diplomatic and military communication channels with North Korean forces and diplomatic channels with China.[68] As a result, there was a significant increase in communication between adversarial elements. From a narrative perspective, the tactical actions conveyed messages that reinforced the seriousness of strategic communication. The U.S. show of force during Operation Paul Bunyan was multidomain, rapidly executed, and massive in comparison to previous border operations post-armistice.[69] There were ground troops with a visible reserve, a prominent airpower presence in strategic bombers and fighter aircraft, and an aircraft carrier task force. All of those elements conveyed a narrative of resolve to North Korea.[70] Simultaneously, the absence of military strikes against KPA forces conveyed a message of restraint. The immediacy of the actions and their scope reinforced the effectiveness of military coercion while communicating conciliatory elements to prevent unintended escalation.

While not specific to Operation Paul Bunyan, U.S. actions leading up to and during the operation reinforced the coercive capability of military forces on the peninsula. In contrast to the opening days of North Korea's 1950 invasion, South Korea had modern tanks, and many troops experienced combat in Vietnam.[71] Their army was a capable ground force that formed a credible deterrent against North Korean escalation. In addition to existing forces on the peninsula, Operation Paul Bunyan brought a multidomain force that demonstrated a significant threat and served to compel North Korean concessions in the JSA.[72] The unique difference between Operation Paul Bunyan to pre-1950 conditions was the gradual build-up of South Korean forces and the continued U.S. presence with modern and capable ground forces.

Cooperation also played a significant role in setting conditions for success of South Korean and American forces during Operation Paul Bunyan. The South Korean military forces in 1976 starkly contrasted to those of 1950,

with a significant increase in military capability largely due to U.S. security cooperation. Access to U.S. forces enabled the rapid response of Operation Paul Bunyan, and the gradual buildup of South Korean forces increased the credibility of forces at the DMZ and its subsequent deterrent value. Each of those elements was crucial in the immediate response during the incident and in maintaining a credible deterrent throughout other escalatory periods with North Korea. However, while coercive measures and a credible deterrent enabled the success of Operation Paul Bunyan, there were conciliatory measures that limited escalation from the U.S. response.

Operation Paul Bunyan demonstrated both strategic and operational conciliation. U.S. détente with Russia and rapprochement with China in the early 1970s conciliated major powers at the strategic level.[73] It also pressured both North and South Korea to negotiate a settlement.[74] The strategic environment of 1950 presented a stark contrast to that of 1976. U.S. efforts on the diplomatic stage significantly reduced the likelihood of Chinese or Russian intervention in response to Operation Paul Bunyan. Operationally, planning considered the red lines that might have forced escalation from North Korea. The U.S. operation limited military commitment to a show of force instead of strikes on KPA targets.[75] There was explicit consideration of how to exercise coercive operations while including conciliatory elements.

Operation Paul Bunyan showed how a successful approach combines competition mechanisms. At the same time, previous examples highlighted how overreliance on any singular capability ignores the complex characteristics of interstate relations observed in current U.S. national security guidance.[76] Operation Paul Bunyan combined many traditional deterrents like nuclear-armed aircraft, credible ground forces, and a significant maritime presence in an operational approach that utilized a competition framework. The cumulative effect was to communicate resolve, compel an adversary, and manage escalation to prevent a broader war.

Conclusion

Comparing the current cognitive approach for operational art against requirements from the *National Security Strategy*, joint concepts, and Army doctrine demonstrates a conceptual gap. Required to fill that gap is a conceptual framework in doctrine for competition mechanisms like communicate, coerce, conciliate, and cooperate. Analyzing U.S. involvement in the history of conflict between North and South Korea demonstrates the validity of those mechanisms. Additionally, Operation Paul Bunyan in 1976 shows the potential for success when combining competition mechanisms in an operational approach. Overall, they offer an adjustment to the Army and joint force's cognitive approach to operational art, enabling a more effective arrangement of tactical actions to achieve strategic objectives.

The implication for the future force is not that competition mechanisms create another checklist in planning. Instead, the mechanisms prime planners for thinking outside the conflict space and provide a cohesive framework to utilize military forces in competition.[77] Failure to shape the competition environment has profound implications during crisis and conflict, demonstrated by Russian aggression in Georgia in 2008 and Ukraine in 2014.[78] Alternatively, the successful application of competition mechanisms can stymie an aggressor's actions, like Ukraine's increased strategic depth against Russia's invasion in 2022. Additionally, as the United States learned after the Chinese intervention in Korea, conflict with one actor can escalate competition with another. A similar balancing act between great-power interests was apparent in Syria's civil war. Operation Paul Bunyan in 1976 showed that the complementary application of competition mechanisms can achieve strategic objectives while limiting escalation, effectively employing military forces short of war. In each instance, actions in competition require deliberate consideration when applying operational art. ■

Notes

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November 2022, https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joint_concept_integrated_campaign.pdf?ver=2018-03-28-102833-257.

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9. ADP 3-0, *Operations*, 2-4, 2-5; Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 52–54.

10. The White House, *National Security Strategy*, 9.

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12. Ibid., 3, 9, 14–16.

13. Ibid., 9, 15–16, 21, 31.

14. Thomas Schelling, *Arms and Influence* (London: Yale University Press, 2008), 32–34; Michael J. Mazarr, *Understanding Deterrence* (Santa Monica, CA: RAND Corporation, 2018), 11, accessed 25 November 2022, https://www.rand.org/pubs/perspectives/PE295.html. Schelling acknowledges the "diplomacy of violence" and the coercive value of military force short of armed conflict. Mazarr describes how assurances are a necessary component of deterrence in addition to the classic acknowledgement of threats.

15. Mazarr, *Understanding Deterrence*, 4–5.

16. Schelling, *Arms and Influence*, 35; Mazarr, *Understanding Deterrence*, 11.

17. FM 3-13, *Information Operations* (Washington, DC: U.S. GPO, 2016), 1-1, 1-2; H. Porter Abbot, *The Cambridge Introduction to Narrative* (Cambridge: Cambridge University Press, 2008), 13. FM 3-13 describes how actions in the physical domains, in and of themselves, can transmit a message in the cognitive domain. Abbot defines narrative as "the representation of an event or a series of events." Each supports the notion that actions taken in the physical domains contribute to larger themes in a narrative, complemented with information via other messages.

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22. Millett, *War for Korea*, 35–37, 45–50.

23. Ibid., 86.

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25. Mykhaylo Zabrodskyi et al., *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine: February-July 2022* (London: Royal United Services Institute, 2022), 8, accessed 4 December 2022, https://rusi.org/explore-our-research/publications/special-resources/preliminary-lessons-conventional-warfighting-russias-invasion-ukraine-february-july-2022.

26. McConville, *Army Multi-Domain Transformation*, 17–18.

27. Lawrence Freedman, *Deterrence* (Cambridge, UK: Polity Press, 2004), 111.

28. Mazarr, *Understanding Deterrence*, 11.

29. Freedman, *Deterrence*, 110; ADP 3-0, Operations, 2-5; JP 5-0, Joint Planning, IV–42. Both ADP 3-0 and JP 5-0 identify "compel" as a stability mechanism, but it still has utility as a component of coercion. Freedman's analysis of deterrence theory acknowledges that coercion includes measures both to prevent or change an actor's behavior.

30. Freedman, *Deterrence*, 110–11.

31. Bryan Frederick et al., *Understanding the Deterrent Impact of U.S. Overseas Forces* (Santa Monica, CA: RAND Corporation, 2020), xiii, xiv, xv, accessed 25 November 2022, https://www.rand.org/pubs/research_reports/RR2533.html; Jacob Aronson et al., "Making Use of History," in Sisson, Siebens, and Blechman, *Military Coercion and US Foreign Policy*, 42–56.

32. Millett, *The War for Korea*, 12, 46, 49–51.

33. Ibid., 75, 84.

34. Ibid., 35–37, 45–50, 75.

35. Ibid., 51–52, 75.

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45. Ibid., 69–72.
46. Ibid., 73–75.
47. Zabrodskyi et al., *Preliminary Lessons in Conventional Warfighting*, 55–57.
48. Ibid.
49. Ibid., 1-2, 55–57.
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53. Henry Kissinger, *On China* (New York: Penguin Books, 2011), 137–43.
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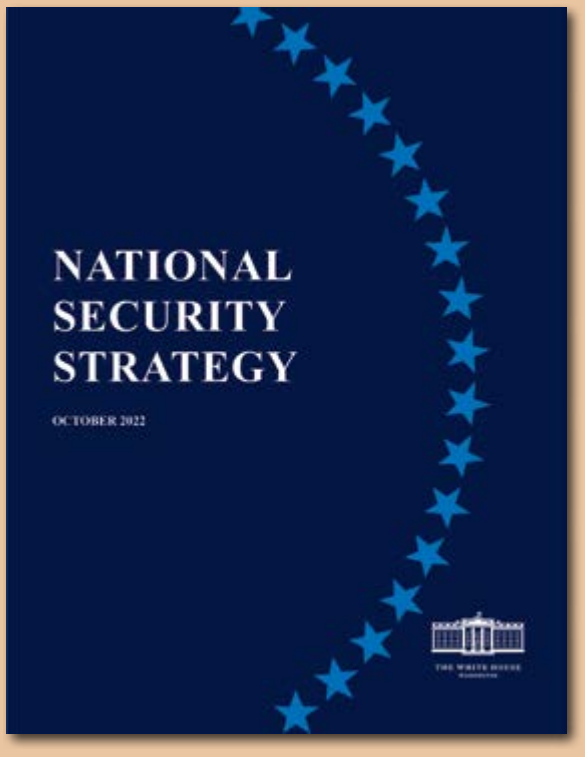

The *National Security Strategy* (*NSS*) is a report mandated by Section 603 of the Goldwater-Nichols Department of Defense Reorganization Act of 1986 (Pub. L. 99-433). The *NSS* has been transmitted annually since 1987, but frequently, reports come in late or not at all. The *NSS* is to be sent from the president to Congress in order to communicate the executive branch's national security vision to the legislative branch. The *NSS* provides discussion on proposed uses of all facets of U.S. power needed to achieve the Nation's security goals. The report is obligated to include a discussion of the United States' international interests, commitments, objectives, and policies, along with defense capabilities necessary to deter threats and implement U.S. security plans.

To read the report, visit https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf.

Maj. Christopher Colyer, assigned to the Joint Task Force Civil Support (JTF-CS) future operations cell, gives a briefing 22 March 2022 during the command's spring mission planning conference at the Phantom Warrior Center on Fort Hood, Texas. The event was held to enhance mission understanding and interoperability among JTF-CS key mission partners. (Photo by Chief Mass Communication Spc. Barry Riley, U.S. Navy)

Term of Art

What Joint Doctrine Gets Wrong about Operational Art and Why It Matters

Maj. Rick Chersicla, U.S. Army

Operational art is one of the most contested terms in the military lexicon. Few doctrinal definitions have fluctuated as much or have come to mean as many things as operational art. Unfortunately for planners, current joint doctrine overly complicates the term and offers a hollow definition that provides limited utility and no insights to the joint force. This is not just a matter of grammatical minutiae for doctrinal pedants—a confusing or unclear definition of operational art could spell disaster for the joint force in a twenty-first-century near-peer conflict as the future battlefield will likely involve the kind of distributed operations that *necessitate* an expert application of operational art. Rather than serve as a historical overview of the origins of the term, this article discusses the problems with the current joint definition, offers a remedy, and outlines why the joint force needs a clearer definition of operational art to prepare for modern challenges.

Fixing the Problem

The 2020 edition of Joint Publication 5-0, *Joint Planning*, defines operational art as "the cognitive approach by commanders and staffs—supported by their skill, knowledge, expertise, creativity, and judgement—to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, means, and risks."[1] The problem with this definition is twofold. First, it is overly wordy—the original sin for many doctrinal terms (albeit a common one). Second, even with the second clause removed, it is an empty definition that conflates operational art with the widely accepted ends, ways, and means formulation typically associated with strategy.[2] The joint force would be better served by returning to the definition offered in the U.S. Army's 2016 version of Army Doctrine Publication 3-0, *Operations*, or a variation thereof. The 2016 edition succinctly defined operational art as "the pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose."[3]

Maj. Rick Chersicla, U.S. Army, is an FA59 (strategist) serving as a joint planner in Stuttgart, Germany. He holds a BA from Fordham University, an MA from Georgetown University, and an MA from the School of Advanced Military Studies.

The Good, the Bad, and the Ugly

There is, admittedly, one good component of the current definition of operational art. Expressing operational art as a "cognitive approach" does at least frame it as *a way of thinking*. Operational art as a cognitive approach arose out of necessity due to changes in the character of warfare. The genesis of operational art is the end of the era of decisive battle—after Napoleon, the scope and scale of battle precluded the single decisive battle from determining the outcome of a war.[4] As warfare shifted away from the war of a "single point," battles came to be seen as parts of a larger whole, and a new way of thinking became necessary to organize battles into campaigns.[5] Modern operational art came into being as a cognitive activity that takes battles or tactical actions and purposefully arranges them into campaigns in order to achieve the overall strategic aim.[6]

Informed no doubt by the current, overly broad doctrinal definition, mischaracterizations of operational art abound. Operational art is not a level of war, and neither is it the "entirety of warfare."[7] By defining it as "a way of thinking," operational art can be thought of as an activity analogous to composing music. The operational artist arranges tactical actions for a broader strategic purpose as the composer arranges a symphony.[8] Individual notes played by desynchronized sections may be pleasing to the ear individually but taken together the result is incoherent and chaotic—noise without purpose. The composer must arrange them in time and space to create the song, mindful of things like time, changes in tempo, and how instruments interact with each other. While it can be framed as a methodology, operational art is *not* a prescriptive process. It is instead a "balancing mental interaction between strategic and tactical reasoning."[9]

Operational art is not the same thing as strategy—it requires an independent definitional space. Thus, the inclusion of any reference to "ends, ways, and means" serves only to muddy the waters when discussing operational art, as that familiar triad is already associated with the Lykke model of strategy formulation.[10] Instead, operational art is the "servant" of strategy; it enables strategy by building the campaigns that help achieve strategic

aims.[11] Strategy has a wider purview than operational art and considers the distribution and application "of military means to fulfill the ends of policy" more broadly, potentially across multiple theaters.[12] Since operational art ultimately serves strategy, the strategic aim of the campaign is the operational artist's lodestar.

Why a Better Definition Matters

The need to better define operational art extends beyond clarifying a doctrinal publication. Rather, likely changes in the future character of war—namely, modern distributed operations—necessitate a clear definition for, and deeper understanding of, operational art. Using the 2016 Army definition and emphasizing that the heart of operational art is the "arrangement of tactical actions in time, space and purpose" to achieve strategic ends better orients the planner or strategist on what James Schneider called the defining characteristic of operational art "the employment of forces in deep distributed operations."[13]

Distributed operations—in every domain—will likely become a defining characteristic of the next evolution in the character of war. As scenario-based wargames are confirming, combat power in the form of ships, aircraft, or other forces are particularly vulnerable when gathered together to reinforce each other, given the type of modern weapons our adversaries are known to possess.[14] Mass has long been a principle of war, and while modern forces do not necessarily need to physically come together in order to concentrate the effects of combat power, military forces have historically tended to physically concentrate to fight. But, it is no surprise that if the joint force is aggregated and the enemy has modern long range fires, sensors, and networked systems, the force is vulnerable. For protection, the force will have to be disaggregated, for on the future battlefield—one defined in part by ubiquitous sensors—massing forces becomes a literal and figurative dead end.

Increased dispersion increases the need for disparate tactical actions to be synchronized in time, space, and purpose for their individual outcomes to register as cumulative operational effects.

In addition to anticipating changes in the character of war, a revised, simplified definition of operational art would better prepare the department to fight as a joint force. Joint doctrine consists of "fundamental principles" that allow planners from all services to speak a common language; it "provides authoritative guidance from which joint operations are planned and executed."[15] An imprecise definition results in hollow concepts that cannot be understood with any true meaning. For something as important as operational art, an unclear definition can have serious repercussions when tactical actions do not build toward a campaign that achieves a larger political purpose. Operational art organizes battles into a campaign for the purposes of the war—the strategic aim.[16] As single battles no longer win wars, operational art is *required* to serve as the cognitive bridge between tactics and strategy in the design of campaigns that accomplish strategic goals.

Defining and understanding operational art is the first step in ensuring the elements of operational art are synchronized. It is no great exaggeration that in any hypothetical conflict in the Pacific or in Europe, the United States and presumably allied and partner forces would be required to fight across great distances that would challenge operational reach. Operational reach challenges influence tempo and vice versa, which in turn impacts culmination—how are planners to integrate the elements of operational art if the overarching definition of the term does not illuminate for planners what the concept is meant to do? The answer is simple—we cannot expect planners to be skilled in operational art if we as a joint force cannot first succinctly define the term.

Conclusion

The Army's 2016 definition tells planners what operational art *should do* in ways that the current joint definition does not. Operational art is described as the "arrangement" of tactical actions—meaning tactical actions are the building blocks of operational art, and the operational artist takes those blocks to build the path toward strategic aims. Where tactics are limited in time and space and are concerned with the outcomes of battles, operational art seeks to stitch together those events for a larger purpose. While tactics determine conduct on the battlefield in relationship to the terrain and the enemy at specific locations and focuses on ending the engagement, operational art can be pictured holistically as the connective tissue that links those tactical actions to strategy through effective campaigns.[17]

Michael Collins, Joint Task Force Civil Support (JTF-CS) deputy to the commander, gives opening remarks during the command's spring mis-sion planning conference 22 March 2022 at the Phantom Warrior Center on Fort Hood, Texas. The event was held to enhance mission understanding and interoperability between JTF-CS key mission partners. (Photo by Chief Mass Communication Spc. Barry Riley, U.S. Navy)


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Simply put, we must concisely define operational art as the arranging of tactical actions in time, space, and purpose to achieve strategic aims.[18] This succinct definition tells the joint force what operational art is meant to do while also implying that operational art requires an understanding of the overall strategic aims. The current definition, by comparison, simply tries to do too much and in doing so, loses focus and utility. Using the proposed, revised definition also serves a forcing function that is left out of the current definition; to arrange tactical actions in time, space, and purpose, one must understand the interplay of the elements of operational design (when assigned to a joint staff), and the interplay of the elements of operational art (on an Army staff).[19] For a corps to employ operational art, for example, it is not enough to understand the need for basing—the staff must understand basing as it relates to tempo, operational reach, and culmination.[20] The joint force must discard superfluous phrasing and instead embrace thinking about operational art in these terms to better prepare for distributed operations across large areas—the type of conflict that would likely emerge during a conflict with our two primary competitors, China and Russia. ■

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Notes

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A soldier gives a mission briefing to a team member 12 May 2018 before participating in a live-fire exercise during Joint Readiness Training Center Rotation 18-07 at Fort Polk, Louisiana. (Photo courtesy of the Department of Defense)

Mission Modeling for Commanders

Improved Operational Effectiveness through the Use of Measurable Proxy Variables

Capt. Bradford Witt, U.S. Army*

Sorin Matei, PhD

To introduce mission command, the present American approach to orders, manuals, and doctrine has to change. Mission command is the enemy of doctrine, of long-winded and complicated orders, and masses of paperwork. German generals did not practice the art of writing five-paragraph-orders, but the capability of rapidly composing and delivering precise oral orders in the chaos of war.

—Jörg Muth

Mission command is the Army's approach to command and control that empowers subordinates' decision-making and decentralized execution appropriate to the situation. Mission command supports unified land operations and its emphasis on seizing, retaining, and exploiting the initiative.[1] The philosophy appeals to Western countries because it optimizes individual strengths and organization virtues, and it fits culturally with the people who make up its forces. Mission command, however, does not specify the conditions under which it needs to be more prescriptive, leaving commanders to decide the proper balance. Their knowledge of the individual unit, conditions that are present, and general situational awareness drives their decision-making.

Capt. Bradford Witt is a junior rotating faculty member of the Math Department at West Point Military Academy. He holds an MS in industrial engineering from Purdue University and an MS in engineering management from Missouri S&T. His most recent Army positions included commanding a Sapper Company in 3rd Armored Brigade Combat Team, 4th Infantry Division, serving as the brigade engineer; and an executive officer/platoon leader within the 1st Brigade Combat Team, 101st Airborne Division (Air Assault). **He is the primary author of this article.*

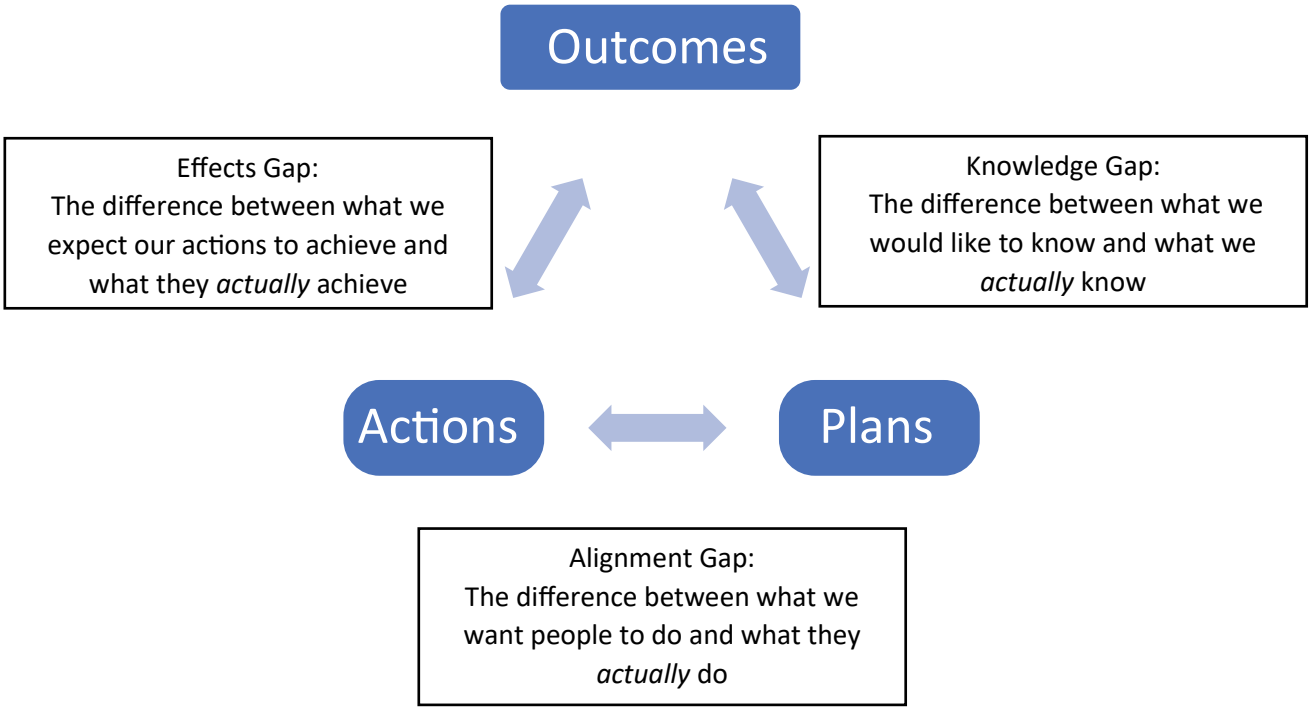
Sorin Adam Matei, PhD, is a professor and associate dean of research and graduate education for the College of Liberal Arts and the FORCES initiative director at Purdue University. Matei is the founder and leader of research and educational initiatives that apply information, data, and social sciences to military strategy and defense technologies. He is the creator of novel data visualization and simulation tools, including BattleFlow and Opmaps.

Under these conditions, are commanders still utilizing mission command, or are they applying a different philosophy entirely? The current mission command doctrine fails to address what these other styles are or how they could be useful within Army operations, or even the conditions under which they could be preferable. The authors propose a way to identify and fill this vacuum through a *prospective model capable of evaluating what style of command a unit is currently employing or what style they should employ to operate in an optimal fashion*.

Using the idea of "gaps" (defined by Stephen Bungay as the separation between what commanders want to happen and what occurs), the proposed model assigns a measurable proxy variable to each of the three gaps: the knowledge gap, the alignment gap, and the effects gap.[2] These proxy variables are henceforth referred to as *information density, assessment of unit capability*, and *order specificity*. If we use a value of either "high" or "low" to describe each of these variables, we can categorize the environment that commanders find themselves in and, ultimately, what kind of orders they should give their soldiers. Commanders can lead in a variety of different ways, but understanding how their individual styles impact the execution of those orders is something a commander ignores at the peril of their soldiers.

Mission Command

The U.S. military formally adopted mission command as a warfighting function and as the dominant command philosophy in 2012.[3] Since then, the military has had mixed success in executing the lofty tenets presented in Army Doctrine Publication 6-0, *Mission Command: Command and Control of Army Forces*—building cohesive teams through mutual trust, creating shared understanding, providing clear commanders' intent, exercising disciplined initiative, using mission orders, and accepting prudent risk.[4] This struggle has many roots, but most prominent among these are a lack of trust and risk aversion engendered by bureaucracy, which hinders the application of mission command principles by Army leaders in garrison environments.[5] Mission command functions in combat and training environments as the exception rather than the rule. There may also exist the perception that while the subordinate decision-making and decentralized execution



(Figure by Bradford Witt, adapted from Stephen Bungay, *The Art of Action: How Leaders Close the Gaps between Plans, Actions, and Results*)

Figure 1. Stephen Bungay's Three Gaps Model

clauses of the mission command philosophy are beneficial and desired, commanders may elect to hold tightly to decision-making and control so as not to be perceived in a negative light or perhaps to impact their careers.[6] Commanders want to see themselves and be seen as champions of mission command but act sometimes against those principles, which makes objective analysis of mission command difficult.

If we assume that commanders understand the concepts of mission command and do not set it aside intentionally, then the problem resides in their ability to identify compliance.[7] If commanders could understand their plan was out of alignment with mission command and how to correct it, they could improve their organization's performance in both garrison and combat environments. With the difficulties of practicing mission command and the issues with objectively assessing one's compliance with the philosophy, there exists a need for tools for objective analysis of when mission command is present or not. The authors propose a model that can do both and is easily adaptable into the planning process.

Historical Models

In developing a model for mission command, we first examined the theories critical to its development. Carl von Clausewitz identified friction as a key component in the struggles of armies and commanders in warfare, which is the gap between what commanders intended to occur and what happens.[8] He also recognized that this friction expressed itself in two ways: internal friction, which results in a gap between the plans of the commander and the actions taken by the troops, and friction created by the environment, which results in a gap between the actions and their intended results.[9] Stephen Bungay continued and expanded the analysis from Clausewitz on the topic of friction, displayed in figure 1.

Martin Samuels continued this research, adding an additional layer to the model. He asserted that each gap rests in an either/or option, which results in eight possible outcomes of each gap. This is the space within which a military commander operates. Samuels refers to each of these as an approach to command and has named each of these binary outcomes in figure 2 (see page 38).[10]

Knowledge Gap	Alignment Gap	Effects Gap	Title
Superior Knows Less	Subordinates should use initiative	Superior will intervene	Enthusiastic Amateur
		Superior will NOT intervene	Directive Command
	Subordinates should do as they are told	Superior will intervene	Restrictive Control
		Superior will NOT intervene	Detached Control
Superior Knows More	Subordinates should use initiative	Superior will intervene	Directive Control
		Superior will NOT intervene	Umpiring
	Subordinates should do as they are told	Superior will intervene	Logistic Control
		Superior will NOT intervene	Neglected Control

(Figure by Bradford Witt, adapted from Martin Samuels, *Piercing the Fog of War: The Theory and Practice of Command in the British and German Armies, 1918-1940*)

Figure 2. Command Approaches

The organizing principle (knowledge gap) is framed generally as whether the superior (commander) knows less or more about the situation than the subordinates, and whether the subordinates should use initiative or do as they are told (alignment gap). The effects gap reflects the commanders' decision to intervene or not intervene, reflecting their individual bias, training, experience, and decision-making style.

Samuels' command model proposes that while there are eight possible choices, four are inherently dysfunctional (highlighted in red) because they increase an element of friction in widening one of the three previously mentioned gaps, while the other four (highlighted in yellow) reduce at least one of these gaps.[11]

The *enthusiastic amateur* is a commander who believes that subordinate initiative is important and that subordinates understand the situation better than the commander does, yet still intervenes in the execution of the operation. They end up intervening in situations that they may not fully understand, or their orders contradict the "ground truth," yet they will intervene if subordinates alter the plan to meet reality.[12]

In contrast, if the commanders realize that they know less than their subordinates and expect them to use initiative to achieve the stated end goal, then the commanders' command style becomes highly functional. *Directive command* is considered most similar to mission command, but it requires significant levels of responsibility, initiative, training, and trust. Incidentally, this was considered the default preference of the German army for more than a century.[13]

Restrictive control, on the other hand, is the situation where commanders feel that the knowledge gap is high; they are uncertain, so they issue definitive orders that they expect to be followed to the letter. This can be a functional style of command but discounts the potential abilities of their subordinates.[14]

Detached control occurs when superiors issue directive orders without fully understanding the situation and then fail to intervene when subordinates struggle to carry out those orders and/or fail to update subordinates when new intelligence is obtained. This is inherently dysfunctional and can occur when command tries to practice directive command but does not give subordinates enough guidance. It could be the product

of restrictive training and education, or overly prescriptive doctrine.[15]

Directive control is a restrictive style where the commanders have more information or knowledge than their subordinates; they issue prescriptive orders and will intervene if their subordinates stray from the orders but still expect their subordinates to use initiative. This is a unique example because the commander trusts the subordinates, but through superior knowledge, is aware that their command decisions, from the commander's perspective, will result in a better outcome. This idea is reflected in the German approach *Schwerpunkt*, where the commander will take personal control at the decisive point but expects his subordinates to take initiative outside of this point.[16]

Umpiring is a failed version of directive control. The superiors know more than subordinates but will not intervene even if the superiors see the subordinates doing something that does not make sense. Expecting subordinates to use initiative while withholding critical information is dysfunctional and careless. This could occur if the commanders are insecure, are the same rank as the subordinates, or feel that they cannot give subordinates orders for political or personal reasons.[17]

Logistic control is the most centralized-control style of command, where subordinate units are treated like inanimate objects to be moved around without any ability to act independently. The Soviet army used this approach in the 1980s due to a lack of trust in subordinate units. Highly advanced surveillance technology could also give commanders this logistic control capacity because they can always see more and further than subordinates. This exact situation has been observed during moments in the Global War on Terrorism when commanders watching a mission from an unmanned arial vehicle feed could give orders directly to the units on the ground.[18]

Neglected control is a special case where a commander does not trust subordinates to take initiative and gives prescriptive orders but refuses to intervene when there is an alignment gap. This unique scenario makes sense when a commander wants to avoid all responsibility for failure or when a commander is deliberately setting up the subordinates to fail. In situations of internal political turmoil or where Army loyalties cannot be guaranteed, these extreme measures make some semblance of sense. Samuels used the Italian army in 1940–1942 as an example of this backstabbing, politically motivated behavior.[19]

Model Development

These eight command styles appear to encompass the full range of possible command styles, but with limitations. These limitations reduce its usefulness as a teaching tool or for understanding historical figures. What level of knowledge disparity determines who knows more? When should a commander trust a subordinate to make decisions, and when should they require obedience over initiative? These important factors, if quantified, could render this descriptive model useful as a teaching tool, as an aid in planning, and to optimize a particular command style to the situation. The authors anticipate that such benchmarks can be developed and fit into a static-stochastic model.

To establish these benchmarks, we attempt to introduce estimable and assessable values for each of these gaps. The first element to the model is the complexity of the problem presented to a commander. A "tame" problem, as Samuels refers to it, is a unilinear problem having a single solution.[20] This type of problem can be analyzed, and a correct solution can be determined. Logistical and training problems could fall into this category. A tame problem, however, does not mean that it is not difficult, only that there is a solution that can be determined. A "wicked" problem has uncertain solutions and complex structure. These are problems that are nebulous or nonlinear, with many potential solutions or no solution that fulfils all the requirements. Next, a value needs to be created for each of the gaps: the new variables expressing them are *capability*, *information density*, and *order specificity*. Each value is binary, either high or low.

With the effects gap, the commander must determine whether to intervene when the desired end state and actions taken are at odds. Whether subordinates' actions are a positive change in response to new information or a mistake born from ignorance of the wider situation is in part based on the commander's assessment of their capability. A commander should trust a capable subordinate's assessment of the situation, while they may be far more suspicious of a less capable one. This value would be assessed during training, and a commander would assign each subordinate unit a value (capability). While this would be relatively stable, this value should change if the

Knowledge	Alignment	Effects	
Information Density	**Specificity**	**Assessment of Capability**	**Command Style**
Low	High	High	Enthusiastic Amateur
Low	Low	High	Directive Command
Low	High	Low	Restrictive Control
Low	Low	Low	Detached Control
High	High	High	Directive Control
High	Low	High	Umpiring
High	High	Low	Logistic Control

(Figure by Bradford Witt, adapted from Martin Samuels, *Piercing the Fog of War: The Theory and Practice of Command in the British and German Armies, 1918-1940*)

Figure 3. Model Categorization

unit, for example, takes significant casualties to personnel or equipment (> 25%). While objective measures of a unit's capability are notoriously difficult, the commander's assessment of the units is all that this model requires, because the value of the variable determines how much flexibility the commander would extend to them.[21]

Information density is another variable that would require assessment during training. Reports; radio transmissions; and intelligence, surveillance and reconnaissance platforms all help to inform commanders at all levels about what occurs on the battlefield. There is so much information available that it has the potential to quickly overwhelm the decision-maker.[22] With this in mind, the quantity of information is not an effective measure, but the quality of the information presented, or rather the density, is of greater value.[23] More information and more technology does not always close this gap. In addition, even a unit that is highly skilled at this task will only remain consistent some of the time. We, therefore, need to represent this value as a probabilistic distribution, with the assessed value acting as the mean for this unit. This random variable serves as the value for the knowledge gap—greater than fifty represents the commander knowing more information.

In addition to the representation of information density, categorizing its place as "high" or "low" also depends on the nature of the problem the unit is solving. A wicked problem, by definition, will not be easily solved. It will require adjusting the plan as the situation unfolds and maintaining flexibility. Samuels noted that if the general nature of warfare is inherently chaotic and problems are typically wicked, "commanders can rarely know the local situation as well as, let alone better than do their subordinates."[24] Therefore, commanders should assume that their information density is "low" unless there is a compelling reason for it not to be so.

Lastly, the *specificity* (order *specificity*) with which a staff or commander creates a plan will serve as the alignment gap. The capability of units is consistent, and the information density has a mean value, but the commander chooses the order *specificity* based on the conditions on the ground. This will allow the commander to understand the functional command styles that are available based on the other information already presented. This output is critical because they will not be able to change their

knowledge of the situation in the short term, but they could select a different unit for the mission or change the order specificity.

Considering each of these variables, the command styles can therefore be categorized according to figure 3 (on page 40).

While a more complex model could arguably be derived using specific values for each of the variables, this would require extensive data to show the inflection points between each category. The authors recommend that such data begin to be collected, but the current model does not require that level of precision to be useful.

With these terms defined, we have a generalized model for practice and planning. As Samuels argued, certain personalities and cultures are predisposed toward certain styles, even if they are not the most effective for the situation.[25] When this model is integrated into the planning process, the staff and commander can clearly see whether an operation should be planned that has low or high specificity to allow for subordinates to utilize maximum flexibility and initiative. This helps a commander and a staff to "see themselves" during the planning process. The real benefit of the model is not to reinforce a call for directive command (mission command) but is to assist in the understanding of command approaches and ensure alignment between the approaches armies employ and the contexts within which these are employed.[26]

Limitations and Future Work

A simplistic model like this has inherent limitations (capability). The separations between "high" and "low" values in each category do not leave room for the difference between a capability of 49 versus 50 on a scale from 1 to 100. In practice, each of these units could enjoy roughly the same level of trust from their commander, but insofar as this is the dividing line, the subordinate units would be treated far differently. This problem is compounded by the fact that people are notoriously bad at evaluating competence.[27] A commander could establish criteria for evaluation and then rank those borderline performing units or categorize those units on a conditional basis and evaluate and revise based on operational competency, but that is also subject to error. A unit employing this model could generate the data that this analysis is missing and then add an additional tier to this analysis between "high" and "low."

Information density is an even more complicated variable to assess. As other research has established, more information is not the key, but there is an optimum value of how much information aids a commander and how much creates "decision paralysis."[28] The important thing to measure is how often and for how long the headquarters element has incorrect information that is critical information for the circumstance. This could be measured using observers at each echelon. The observers could also measure the time required and how widely dispersed the commanders' intent and mission permeates. Ultimately this will become a value judgment, but the more times this is conducted, the more accurate the judgment will become. There are also situations where there is an understanding, without having to measure, as to who has more situational awareness. When a command post is moving between positions, for example, there is a necessary drop in situational awareness until it is reestablished. This effect would be mirrored if there was a loss of communications or surveillance assets. Also, as the distance between units increases and the pace of the changing situation increases, the amount of information that the commander can understand decreases.

In contrast, a commander would also inherently know more (knowledge) when a new mission is given to a headquarters, but the planning time is very short. In this situation, the commander would need to take more direct control. This situation could also occur when the commander or their staff identify an enemy operation that would have a drastic impact on the current operation and necessitate a dramatic alteration. That must be executed swiftly, and a commander cannot wait until their subordinates understand and adapt to the new information. A chart of instances, like decision points, where the density variable should be assessed as "high" or "low" immediately would further calibrate this variable.

Lastly, order specificity is the most important output of the model and, luckily, the easiest to put into practice. While no one can put a page limit on a "low" or "high" specificity order, this plays an important role in the wording of an order. If the staff knows that they must be detailed based on the operational environment, they will approach the problem differently than if they know they need to plan for maximum flexibility and adaptability. One will drive the staff to find the "right solution" so that the units can take the plan and execute, and the other will provide a framework for the unit to build upon.

This theoretical model is functional in its current form, but it could be vastly improved with empirical data to

support the ideas proposed. Information could be collected at each of the training centers during the ten or so rotations each year. This would validate the assumptions made in the distribution of the information density variable and create the inflection points between each of the "low" and "high" categorizations. These could be rewritten into a scaled variable between 0 and 100, allowing for a more thorough analysis. Lastly, this could be an illuminating examination of how far from the tenets of mission command most organizations truly are and how to adjust to fit more closely to it.

Conclusion

While this model does not predict the battlefield and it will not reveal where to place units or where the enemy will attack, it can give the commander the feedback that during the last operation, they employed a dysfunctional command style that impeded the performance of the organization. The style of command is an underresearched and misunderstood facet of operations. And while the mission command doctrine is an extremely flexible and effective philosophy, it is an ideal that is never fully realized. Even worse, commanders believe that they are following it when in fact, they could be uncertain or blatantly out of alignment. This relatively simple model proposes that with a better understanding of the command style we employ, we can be more accurate and effective in following our own doctrine. ■

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Notes

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Financial Access Denial

An Irregular Approach to Integrated Deterrence

Col. Sara Dudley, U.S. Army
Lt. Col. Steve Ferenzi, U.S. Army
Maj. Travis Clemens, U.S. Army

Wake-up call to a hypothetical 2028: *China makes good on its promise to "reunify" with Taiwan—by force. A U.S.-led coalition attempts to repel the invasion, but quickly discovers its operational reach is woefully inadequate to defend Taipei. The United States barely maintains notional access to critical seaports, airports, and canals across the globe—China owns them all. China's seemingly "no strings attached" aid and infrastructure investments appeared advantageous to U.S. partners, especially when orchestrated by corrupt state officials. But over time, Beijing's coercive gradualism cemented control over strategic power projection points across the Middle East, South America, and Africa. Without global access and basing, logistics—the backbone of U.S. combat power—slows to a crawl. China meanwhile achieves its reunification fait accompli.*

Military Competition—More Than Traditional Warfighting

As a modern fighting force, the U.S. Army struggles with understanding and articulating what it does to "compete" beyond security assistance, combined exercises, and force posture.[1] Unfortunately, our adversaries do not, as they masterfully integrate economic statecraft with military coercion to advance their interests in the gray zone short of war.[2] Economic statecraft is a critical adversary capability allowing access to targeted states, but its associated corruption is an exploitable vulnerability.[3] Military finance capabilities must complement traditional warfighting to capitalize on this liability to expand the U.S. coercive arsenal—fully integrated with interagency partners in the Departments of Treasury, Commerce, and State.

Reenvisioning and employing counterthreat finance (CTF) as a military competition activity against China and Russia *to deny financial access* to and influence over U.S. partners and allies offers an *irregular way* to strengthen "integrated deterrence"—the cornerstone of the 2022 *National Defense Strategy* (*NDS*).[4] Expanding current CTF constructs to include considerations of friendly force financing and understanding the totality of the fiscal and economic environments allows more robust CTF efforts to protect against unwitting support to adversary proxies, corrupt powerbrokers, and state-owned enterprises. Clarity in this unique financial common operating picture would enable broader U.S. statecraft in a truly integrated fashion as Defense Secretary Lloyd Austin envisions.

A holistic CTF approach to competition—built upon lessons from the decades-long counterterrorism struggle, offers the Army sustainment, military intelligence, and special operations communities a new way to support the geographic combatant commands. This represents a tangible next step, since sustainment support currently utilizes contracting as a significant part of setting the theater.[5] Different from the current Logistics Civil Augmentation Program, such an approach would provide an expanded range of options to complement more escalatory measures short of war such as blockades.[6]

(Composite image from Adobe Stock Image)

To support the denial of adversary financial access and influence, the Army should employ CTF as a proactive competition activity with defensive and offensive components. This requires a fiscal preparation of the environment—whereby financiers conduct economic risk assessments, apply antimoney laundering/countering the financing of terror (AML/CFT) compliance structures, and inform planning to prevent funds from reaching proxy support, criminal, or patronage networks. In concert, financiers and Army special operations forces (ARSOF) working in crossfunctional teams disrupt and dismantle these networks.

Counterthreat Finance (Un)Defined

Threat finance is a broad term inclusive of the financing methods used by terrorists, criminals, and adversary states.[7] For the U.S. Defense Department (DOD), threat finance specifically incorporates "illicit networks that traffic narcotics, weapons of mass destruction, improvised explosive devices, other weapons, persons, precursor chemicals, and related activities that support an adversary's ability to negatively affect U.S. interests."[8]

Unfortunately, this dated 2010 definition underemphasizes the adversarial role of states—especially in strategic competition today, and it is silent on addressing that the DOD may be a primary source of adversary revenue. The most significant gap, however, is neglect of the legitimate but coercive use of economic statecraft that epitomizes the Chinese and Russian approaches.[9]

New Fronts of Coercion through Economic Statecraft

Economic statecraft entails the use of economic means to achieve a foreign policy goal. Examples include trade policy, financial structures, private business, currency manipulation, and influence over state-owned enterprises (SOEs). With malign intent, a state can use these mechanisms to pressure a foreign

Container ships dock 27 September 2013 at Hambantota Port in Sri Lanka. After defaulting on loans from China, Sri Lanka was forced to cede control of the port to China for ninety-nine years. (Photo courtesy of Wikimedia Commons)

government to the point of severe damage to its economy. Alternatively, a state can incentivize the targeted government to adopt policies that support its goals.[10]

China pursues economic statecraft by leveraging trade and investment dependencies, providing financial aid to key individuals and institutions willing to support its interests, and mobilizing SOEs to accomplish Beijing's goals.[11] Specifically, China uses its signature "Belt and Road Initiative" (BRI) to exploit massive infrastructure investments, such as roads, railways, ports, and electronic communications, in vulnerable countries. BRI serves as a mechanism not only for China to gain access to key political leadership around the world and shape their behavior, but also to control critical infrastructure and infiltrate or hijack communications networks and surveillance systems.[12]

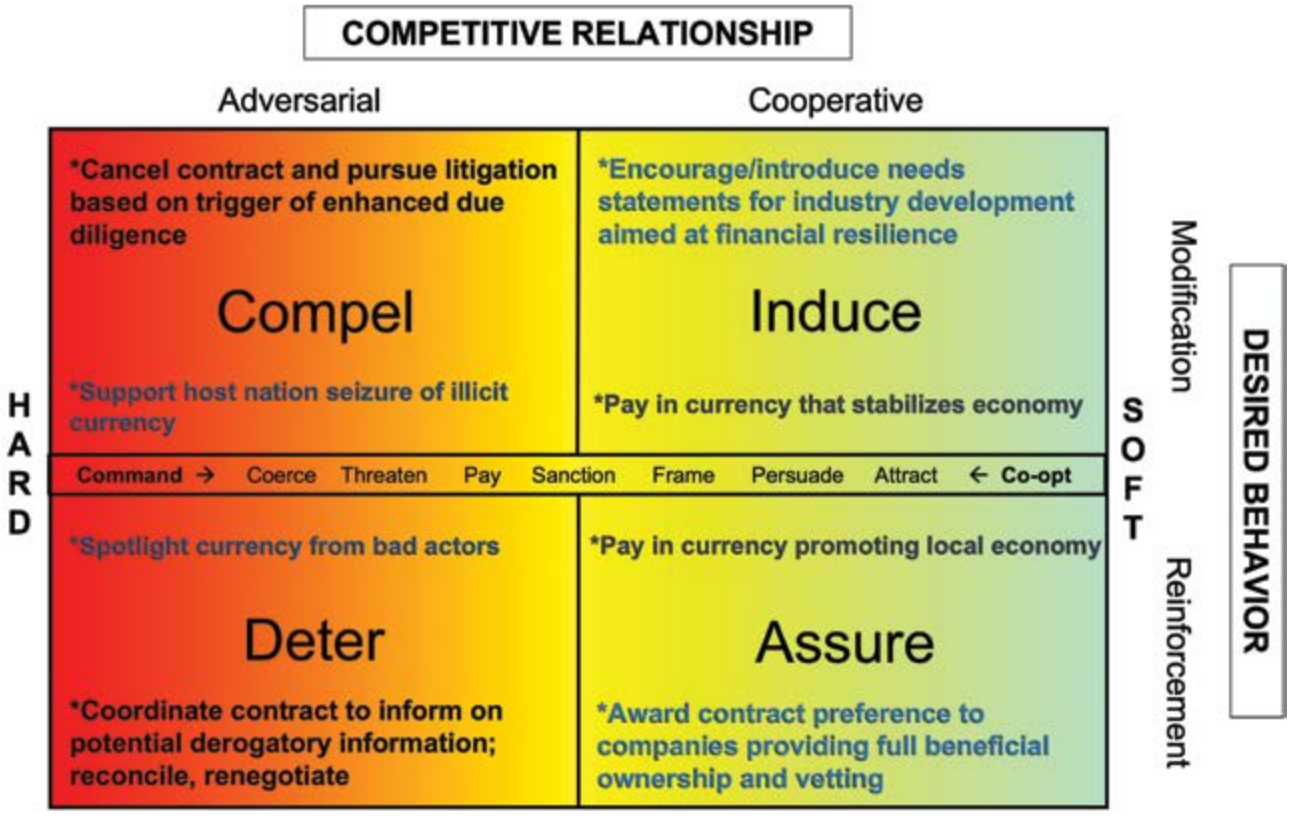
Sri Lanka is one such example. In the lead up to Sri Lanka's January 2015 election, the China Harbor Engineering Company provided over $7 million in campaign funding to incumbent President Mahinda Rajapaksa. This company was building the controversial port at Hambantota—which happens to be in Rajapaksa's home district and a project he supported. Even though Rajapaksa lost, Sri Lanka also defaulted on its loans in 2016 and ceded control of the port to the China Merchants' Port (a partial SOE) for ninety-nine years. The port construction provided China a vector to influence the Sri Lankan elections, as well as strategic infrastructure to support its navy.[13]

Russia similarly pursues economic statecraft by manipulating regional energy dependency, aiding militia and criminal organizations, and mobilizing the Russian diaspora in targeted countries.[14] The former includes threatening price hikes and supply disruption of Russian gas and oil, and actual cuts of energy supplies for political purposes. The latter includes efforts to build business and media relationships, penetrate official organizations, and resource armed proxies.

Col. Sara Dudley is a U.S. Army finance and comptroller officer serving as the director of operations and support in the Army Budget Office, Pentagon. Her prior assignments within special operations involved direct work on countering terror finance. She holds a BS from the United States Military Academy, an MBA from Harvard University, and an MA from Case Western Law School in financial integrity.

Lt. Col. Steve Ferenzi is a U.S. Army strategist and Special Forces officer serving in the U.S. Special Operations Command Central J-5. He contributed to the development of the Irregular Warfare Annex to the 2018 *National Defense Strategy* and holds a Master of International Affairs from Columbia University's School of International and Public Affairs.

Maj. Travis Clemens is a U.S. Army civil affairs officer in the U.S. Indo-Pacific Command with multiple deployments to Africa and the Middle East. He is the author of JSOU Report 20-4, *Special Operations Forces Civil Affairs in Great Power Competition.*



(Figure by authors)

Figure 1. Counterthreat Finance across the Power Spectrum to Shape Desired Behavior

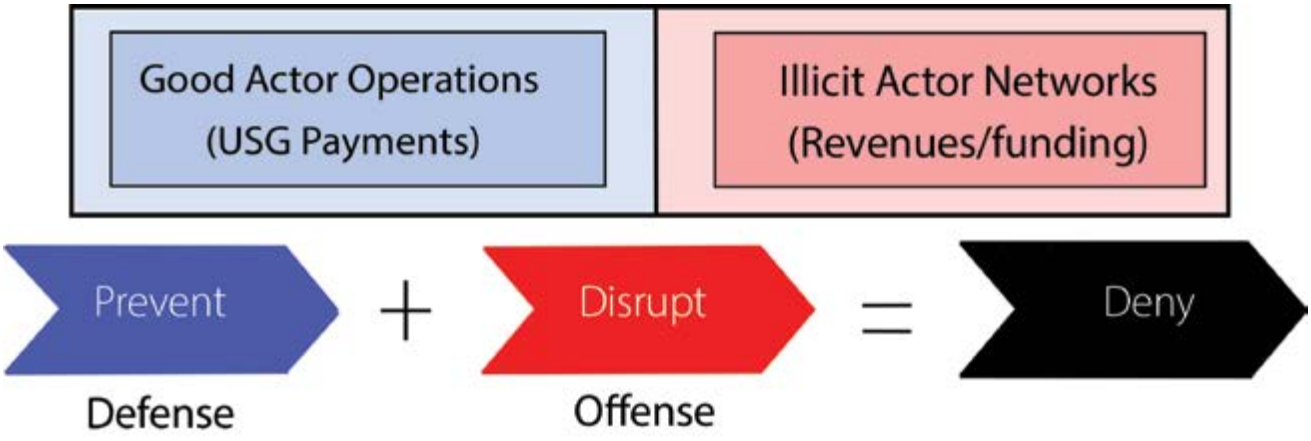
The April 2010 Russian-Ukrainian Kharkiv agreement exemplifies Russia's economic preparatory approach—setting conditions for its annexation of Crimea in 2014 by allowing the Russian Black Sea Fleet to remain stationed in Sevastopol until 2042 in exchange for a significant price reduction of Russian natural gas.[15]

To help deny Chinese and Russian financial access, the Army must employ a new CTF construct. The international architecture in which the Financial Action Task Force (a money laundering and terrorist financing watchdog group) and international financial intelligence units handle risk, detection, and enforcement of Bank Secrecy Act requirements toward AML/CFT represents an underutilized model that military finance and comptroller professionals ought to apply when considering vendors. The generation of a similar risk-based vetting infrastructure and a cadre of professionals focused on identifying and denying adversary access to friendly force funding would provide mechanisms to compete with such actors. Evolving the way the Army approaches setting the theater is the ideal place to foster this change.

Setting the Theater—An Old Mindset for Yesterday's War

As one of the Army's five core competencies, *setting and sustaining the theater* "is essential to allowing the joint force to seize the initiative while restricting an enemy force's options."[16] Setting the theater includes establishing access and infrastructure to support joint force operations. The Army supports the geographic combatant commands through its Army Service component commands (ASCCs)—the theater armies such as U.S. Army Pacific—as part of its Title 10, Army support to other services, and executive agent responsibilities.

The traditional approach to setting the theater focuses on large-scale combat operations. As Army



(Figure by Col. Sara Dudley and Col. David Vandevander)

Figure 2. Defense and Offense Counterthreat Finance Construct

doctrine states, "the purpose of setting a theater is to establish favorable conditions for the rapid execution of military operations and the support requirements for a specific OPLAN [operation plan] during crisis or conflict."[17] To fulfill this requirement, the Army maintains capabilities that include "intelligence support; communications; port and airfield opening; logistics; ground-based air defense; chemical defense; and reception, staging, onward movement, and integration."[18]

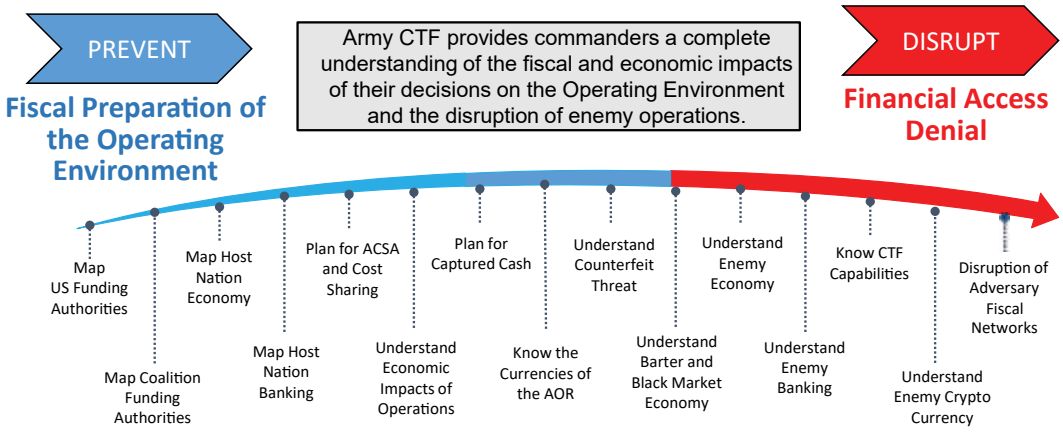
Contract support and finance within the sustainment function both play a significant role.[19] The newest manual on sustainment operations discusses *operational contract support* (OCS), "the process of planning and executing contract support during contingency operations," and banking and disbursing, the "financial management activities ranging from currency support of military operations … to strengthening local financial institutions."[20] However, it only briefly considers operational security that involves vendor use of local nationals that may report information on friendly forces.

A stronger case for the theater army's central role in deterrence rests in its partner engagements, information advantage, and sustainment activities through an active campaigning approach to shape the environment.[21] Unfortunately, this is still a minority view. A framework for setting the theater must go beyond enabling access and sustainment primarily for armed conflict to one that explicitly includes *denying financial access to adversaries* through CTF as part of a comprehensive integrated deterrence toolkit.

Asymmetrically Setting the Theater—A New Mindset for Integrated Deterrence Today

A CTF approach to setting the theater should confront this challenge through the lens of *coercion*—the ability to influence an actor to do something that it does not want to do. The renowned scholar Thomas Schelling described coercion as encompassing two basic forms: *deterrence* and *compellence*. Deterrence reinforces status quo behavior by preventing a target from pursuing unwanted actions, while compellence intends to change a target's behavior.[22] The 2018 *NDS* emphasized how revisionist powers "increased efforts short of armed conflict by expanding coercion to new fronts," while the new 2022 *NDS* elevates "*integrated deterrence*" to its primary line of effort.[23] The Army must think about coercion in new ways—specifically *irregular deterrence*, to keep pace (see figure 1, page 46).[24]

Most examinations of the U.S. military's contribution to coercion tend to focus on demonstrations of commitment (forward-stationed forces and security assistance); enforcing international law in the global commons (shows of force such as freedom of navigation operations); and limited uses of lethal force (precision



(Figure by the U.S. Army Finance Corps Working Group)

Figure 3. The Counterthreat Finance Spectrum from Fiscal Preparation of the Environment to Financial Access Denial

airstrikes).[25] Such studies do not include economic or financial measures beyond support to sanctions.[26] This new approach expands options whereby the Army can contribute to general deterrence by denying adversary financial access to theater resources, as well as adding to a whole-of-government escalation ladder that better links the military with economic and financial instruments during crisis management.[27]

Classic deterrence, backed by large conventional formations and nuclear weapons, relies on signaling the power to hurt an adversary if it crosses a red line.[28] Deterring gray zone coercion exercised through economic statecraft instead requires new ways to address the vulnerabilities that Russia and China exploit in targeted states.[29] Counterthreat finance provides a mechanism of "irregular deterrence" through *financial access denial*, which works along the logic of making the target (corrupt politicians, local businesses, criminal organizations, etc.) too difficult, or costly, to purchase and leverage.[30]

Counterthreat finance would cover the full spectrum from general defensive actions to protect against U.S. and partner money inadvertently funding adversaries through OCS (e.g., vendor threat mitigation), to offensive operations—specifically in the information environment against nodes in adversary funding streams. Reframing the traditional CTF approach to "deny" illicit actors' financial flows in terms of defensive and offensive operations broadens assurance that funding does not reach adversary networks and decreases the effectiveness of economic coercion (see figure 2, page 47).[31]

Preventive Measures: Enabling Partner Financial Resilience in the Army Service Component Commands

Current efforts toward CTF primarily focus on financing used to engage in terrorist activities and support illicit networks. Targeted networks deal with trafficking narcotics, weapons of mass destruction, improvised explosive devices, weapons, and related material that support malign activity.[32] Transnational organized crime, often coordinating and facilitating those activities, also demands attention from this same community of action. The reenvisioning of CTF into a broader context requires understanding the "denial" of financing within a broader prevention-disruption framework that moves beyond the "deny, disrupt, destroy, or defeat" description in existing doctrine.

The goal of preventing funds from reaching adversarial networks is to enable financial resilience—hardening against adversarial economic coercion. When considering the need to prevent friendly force sustainment funds from reaching illicit actors, the financial operating environment weighs heavily on planners and financial forces. The application of financial risk

assessments and AML/CFT-like compliance structures within financial units making payments provides a twofold benefit. First, additional vetting and economic awareness provide more assurance to prevent U.S. funding spent in OCS from reaching criminal, corruption, or patronage networks, while secondarily supporting positive local economic outcomes.

To empower this full spectrum of financial and economic considerations, a "fiscal preparation of the environment" produces a picture of financial and economic conditions within a geographic area (see figure 3, page 48).[33] This preparatory and ongoing running estimate provides the foundation of an expanded CTF.

Fiscal Preparation of the Environment

The fiscal preparation of the environment starts by defining the known fiscal and economic operating environment. This preparatory research step provides the underlying information to assess the situation and determine required controls to mitigate risk in financial transactions. General parameters parallel the AML/CFT risk assessment that a financial institution would do across risk categories within a compliance cell. The Federal Financial Institutions Examination Council manual outlines elements within specific risk categories of products, services, customers, entities, transactions, and geographic locations.[34] Minimum military equivalent considerations for finance units would entail detailed research of the following: geographic risk affiliated with local banking systems, underlying societal value transfer systems, known black market or prominent illicit businesses, and identification of sanctioned or restricted companies or individuals.

These steps facilitate the production of financial templates and overlays to support decision making in a commander's area of operations. These templates would outline vetted vendors, existing local AML/CFT law enforcement and policy, the international status of local banks, cash management policy, approved digital payment platforms, and the expected U.S. force density, contract support requirements, and capabilities.

Shaping the Fiscal Operating Environment

Clarity of economic conditions within high-risk AML/CTF areas prone to illicit actor manipulation informs planning to generate a more conducive economic environment. Shaping the fiscal operating environment utilizes the identified vulnerable portions of economies to inform how external fiscal or economic manipulation could generate effects on operations.

Commander visualization tools of financial effects on environmental variables (PMESII-PT) and cultural considerations (ASCOPE) should amplify understanding of the ground force position and relative fiscal advantages.[35] Identification and mapping of U.S. and partner funding authorities, estimates of local contracting capability and civil considerations, and identification of AML/CFT risk particular to the local area round out this area of the spectrum. Finance and intelligence elements then use this analysis to present risk mitigation controls to the commander for CTF action based on his or her level of risk tolerance.

This analysis translates to an ability to tease apart contingency planning captured primarily as a military component of national power from substantial economic components that also exist. Given the size and scope of global U.S. military engagements, figuratively, a little "e" resides within the big "M" of DIMEFIL.[36] Focusing solely on the lethal employment of the military (M) negates the opportunity to influence competition via contract dollars (little e) that commanders will spend in support of operations anyway. Smartly applying contract dollar requirements allows the military to foster partner nation fiscal resilience and enable actions appropriate for interagency partners.[37]

Disruptive Measures: Going on the Offense in the Theater Special Operations Commands

Offensive operations by the SOF community round out efforts toward financial access denial. Working as crossfunctional teams through the theater special operations commands (TSOCs), finance corps professionals and ARSOF can disrupt and dismantle critical corruption networks supporting Chinese and Russian interests. The intersection of CTF and special operations, especially civil affairs and psychological operations forces, can be most effective in the information environment. SOF serve several critical roles that enable CTF, ranging from civil reconnaissance to precision messaging and enabling the reach of national authorities through interagency partners.

Imposing Costs on Infrastructure Investments

In a reconnaissance role, a SOF civil affairs team acting as a civil military support element (CMSE) can maintain relationships in strategic areas through which they can observe Chinese economic activities and their effects. New construction sites or talks of contracts with Chinese investors are often topics broached during regular meetings and contacts. Civil reconnaissance allows the TSOCs to map BRI's reach and apply targeted CTF measures against associated individuals and businesses facilitating China's access.[38] This includes serving as a tipping and cueing function to other agencies such as the Treasury Department's Office of Foreign Asset Controls.

With an eye toward civil resilience, SOF can degrade the effects of adversary information operations on relevant populations that enable financial access.[39] SOF supports working with legal and community organizations to better understand customs, licensing, or permit processes they should mandate and enforce to ensure their sovereignty. Nongovernmental organizations (NGOs), especially environment-oriented ones, often have legitimate concerns over the negative effects of construction.[40] Through U.S. embassy and NGO contacts, CMSEs can illuminate concerns of BRI projects to NGOs who have influence to sway the partner-nation to oppose these projects. As popular frustration continues to grow with unsustainable debt-for-infrastructure deals in developing countries along the BRI, influence campaigns could enable local and multinational partners to discredit Chinese activities and inhibit further predatory investments.[41]

Disentangling Energy Dependencies

Special operations forces can serve a similar function against Russia through relationships with U.S. embassies and partner-nation officials and civilian influencers. Russia creates a critical vulnerability for itself by leveraging energy exports to sway foreign governments. A decrease in demand would result in a decrease in Moscow's political leverage.

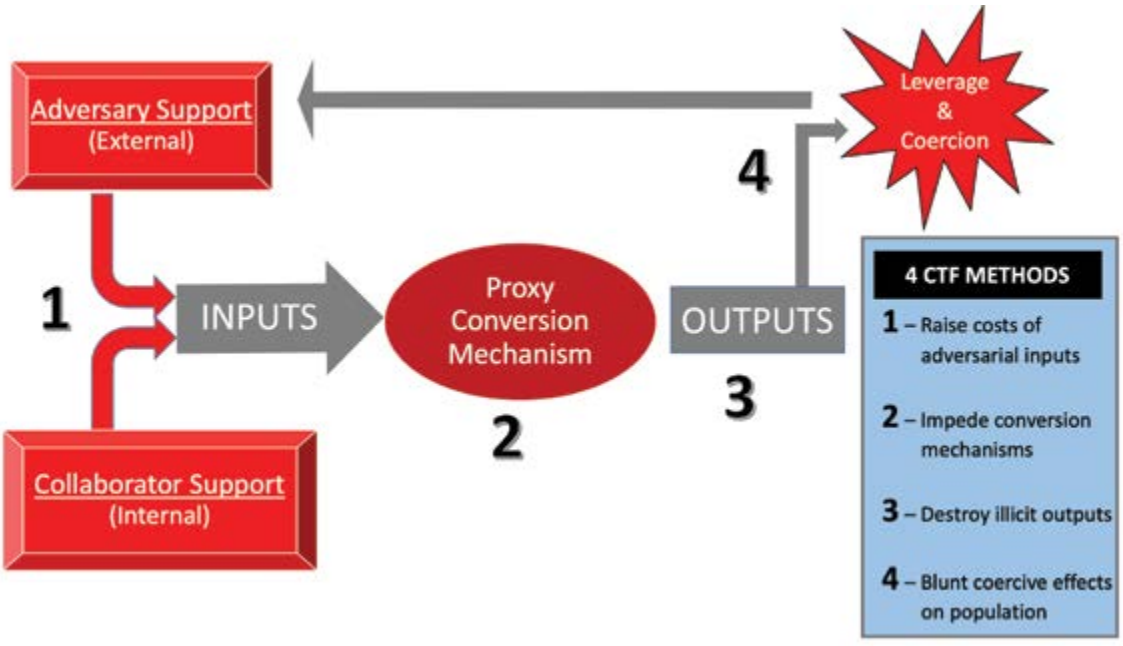
Civil reconnaissance can identify vulnerable locations that hold outsized political influence in the partner-nation. That military information flow to the U.S. embassy would allow enhanced transparency and new value proposition for consideration in application of resources, perhaps through the U.S. International Development Finance Corporation, to establish alternative energy infrastructure for these specific cases. By targeting specific locations that produce the most public outcry during petroleum embargoes or price increases, the partner-nation can alleviate political pressure without changing the entire country's energy infrastructure.

> “Resistance-focused efforts in conjunction with targeted CTF [counterthreat finance] measures could foster partner-nation will and political leverage against Russia's efforts to sway its key leaders—denying financial access over time to reduce Russia's position of advantage.”

Special operations forces could also support resistance against Russian economic coercion by highlighting pipeline construction through environmentally sensitive areas or culturally significant regions. Resistance-focused efforts in conjunction with targeted CTF measures could foster partner-nation will and political leverage against Russia's efforts to sway its key leaders—denying financial access over time to reduce Russia's position of advantage.[42]

Illuminating and Supplanting the Funding Flows

Encouraging selectively introduced digital value-transfer systems may further insulate populations in coercion-prone areas. Special operations engagements, via training events and long-standing mil-to-mil relationships, could eschew Western-centric payment methods, normally in U.S. dollars, and adopt preexisting local digital payment platforms, endorse cryptocurrency payments, or offer access to a specialized decentralized application based on answering communal



(Figure by authors)

Figure 4. Counterthreat Finance as a System

needs. New cryptocurrency technologies offer communities an efficient complementary mechanism to create "civic or city" currencies that support local economic development, societal cohesion, and active participation in the sustainability of local communities.[43]

The introduction of such digital payment mechanisms allows for distributed, resilient, and transparent value transfers that make it more difficult for China or Russia to engage in predatory economic practices. High societal adoption rates of open-source cryptocurrency technology allow analysis of where payments ultimately land and illuminate external injects of funding. SOF's ability to rapidly prototype, test, procure, and deploy such technology provides an additional layer against operational sustainment payments reaching illicit actors, covert payments reaching corrupt local officials, the warping of local markets, or the generation of unsustainable economics.[44] It also allows the United States and partners to compete against Chinese Digital Currency Electronic Payment (DCEP) and digital yuan, and Russian cryptocurrency ("CryptoRuble") intended to cement adversary leverage and unseat the U.S. dollar.[45]

Cashing in on Finance as a System

Planners can optimize efforts toward comprehensive financial access denial through a systems framework that emphasizes cost imposition throughout the entire process. This addresses financial *inputs* (physical and virtual funding streams), *conversion mechanisms* (SOEs and corrupt government officials), and *outputs* (commercial infrastructure and proxy networks) (see figure 4).[46] On the front end, this involves raising the costs of obtaining financial inputs and impeding conversion of that funding to outputs. On the back end, disrupting the outputs and blunting negative effects on the population set conditions to compel adversary behavior change and deter future attempts at coercion.[47]

Raise the costs of obtaining inputs. Informal money transfers take the form of hard currency exchanges, digital payment accounts not affiliated with banks, online exchange forums, and peer-to-peer cryptocurrency payments that circumvent traditional tracking systems. The difficulty in attacking these structures is identifying them in the first place. This is where SOF can support interagency efforts. Through normal engagements, CMSEs gain a broad understanding of how economic factors affect the local population and can identify the specific mechanisms, locations, and personalities involved in digital payments and online exchanges. Armed with this knowledge, CMSEs work with the U.S. embassies to leverage interagency tools. Applying compliance

structures, risk-based vetting infrastructure, and stringent needs statements make it harder for those funds to reach their intended targets through OCS pipelines and analogous partner-nation processes.

Impede the conversion mechanisms. SOEs, corrupt government officials, informal power brokers, and local businesses provide the access, placement, and influence that China and Russia leverage for exploitation and coercion. Targeted vilification of corrupt officials and predatory commercial entities can illuminate malign actors. Psychological operations teams alongside CMSEs message through local media, social media, and in-person engagements about these corrupt officials—enabling strikes, protests, local democratic processes, and international pressure campaigns to remove them from office or positions of influence. Similarly, CMSEs can provide targeted information to aid restrictions on foreign engineers and expand contract cancelations, administrative legal hurdles, and litigation to persuade adversaries to cease their activities and alter their decision calculus.

Disrupt the outputs. The construction and maintenance of physical infrastructure and proxy networks serve as adversarial action arms. Outputs from infrastructure might also represent critical resources that allow adversaries outsized influence in global supply chains. Offensive measures such as asset seizures, cyber penetration, physical sabotage, arrests, and deportations expand the range of options to escalate when necessary.

Blunt the adverse effects on the population. Local communities, businesses, and workers often bear the brunt of adversarial economic coercion and its associated corruption, especially when it involves foreign labor, environmental damage, and loss of sovereignty.[48] Mitigating these negative impacts through targeted worker compensation, local economic investments, micro loans, environmental protection measures, and increased community participation in economic decisions would complete the efforts to achieve financial access denial.

Money in the Bank, or Bad Investment?

Despite the clear benefits of pursuing a broadened CTF approach to competition, the interrelated issues of *scope*, *scale*, and *capacity* prevent CTF from becoming a silver bullet. Scoping competition CTF efforts to include illicit and corruption networks makes sense. However, expansion to include SOEs—the most powerful arm of China's economic statecraft, raises questions about scale. Akin to multinational conglomerates, many SOEs have listings on several foreign stock exchanges. Comprehensive denial of SOEs through CTF alone is impossible without significant efforts from many international partners. However, the mitigation and disruption of in-country malign SOE activities, especially related to BRI, remains feasible.

The question of whether the Army Finance and Comptroller Corps and SOF communities have the capacity to employ CTF activities at the scale necessary to affect adversary decision calculus is also a valid concern. To date, the finance corps added CTF as a core competency, established pilot cells collocated with SOF, began incorporating financial analysis into theater-level training exercises, and established ad-hoc training programs from existing interagency offerings to jump-start the learning curve.

While the SOF finance professionals develop a prototype of the capability, the broader Army finance initiative must create dedicated development prototypes of dedicated service-level CTF career paths, mature the doctrine, and make force structure tradeoffs to optimize its human capital toward long-term CTF success across the joint force. Integrating and leveraging the existing finance-related capabilities and authorities across the ASCCs and TSOCs with those of interagency partners offers outsized return on investment that decision-makers must not ignore.

Shareholder Equity through Full-Spectrum Counterthreat Finance

Deterring adversaries from exploiting vulnerable partners through financial vectors, as well as compelling behavior change to align with U.S. interests, requires new ways to affect their decision calculus in daily competition. Preventative and disruptive CTF measures provide one such way—through full integration of Army conventional forces, ARSOF, and interagency partners.

With the Army's focus on multidomain operations, the theater army—as the ASCC for its assigned combatant command, is the principal Army formation

"responsible for deterring or defeating an adversary's malign influences and overt aggression below armed conflict within the theater."[49] Reconceptualizing how the Army sets the theater—specifically with an *irregular CTF approach to deny adversary financial access,* strengthens the Army's contributions to integrated deterrence and expands the aperture of multidomain operations to the financial arena.

The CTF approach to deterrence also supports efforts to institutionalize irregular warfare lessons learned from past conflicts.[50] Adapting CTF activities today against proxies, corrupt powerbrokers, and SOEs employed by China and Russia toward financial access denial would capture and build upon lessons from CTF in the decades-long counterterrorism struggle. Enhanced with intelligence fusion, the integration of ASCC and TSOC crossfunctional teams further advances the conventional and SOF integration, interoperability, and interdependence established over nearly twenty years of counterterrorism operations.[51]

Finally, money and financial flows do not recognize military and civilian bifurcations. While Chinese infrastructure spending through BRI is qualitatively and quantitatively different than threat finance in Iraq, adapting those tools and enhancing the scale and scope of interagency tools like those found in the Treasury and Commerce Departments could prove critical to deterring adversary gray zone behavior. Re-envisioned CTF will enable broader U.S. economic statecraft and help the DOD strengthen integrated deterrence through a comprehensive military *irregular–conventional–nuclear* deterrence triad. We cannot afford to forego this opportunity to change, or else risk moving closer to our own checkmate. ■

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35. For an example of a PMESII/ASCOPE matrix, see Joint Publication (JP) 3-24, *Counterinsurgency* (Washington, DC: U.S. GPO, 25 April 2018), IV-6, accessed 19 September 2022, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_24.pdf; and JP 5-0, *Joint Planning* (Washington, DC: U.S. GPO, 16 June 2017), IV-11. PMESII–PT: political, military, economic, social, information, infrastructure–physical environment and time; ASCOPE: areas, structures, capabilities, organizations, people, and events. This construct of assessment developed by Capt. Jon Bobb in the finance corps working group.

36. The Department of Defense considers the basic elements of national power: diplomacy (D), information (I), military (M), and economic (E) with additional instruments of power such as financial (F), intelligence (I) and law enforcement (L)—DIMEFIL.

37. Robert Blackwell and Jennifer Harris, *War by Other Means: Geoeconomics and Statecraft* (Cambridge, MA: Harvard University Press, 2016), 223.

38. Clemens, *Special Operations Forces Civil Affairs in Great Power Competition*, 65.

39. Ibid., 87.

40. Ibid., 65.

41. Christopher Balding, "Why Democracies Are Turning against Belt and Road: Corruption, Debt, and Backlash," *Foreign Affairs* (website), 24 October 2018, accessed 19 September 2022, https://www.foreignaffairs.com/articles/china/2018-10-24/why-democracies-are-turning-against-belt-and-road. For a fictional vignette of a Special Forces/civil affairs/psychological operations (PSYOP) cross-functional team operational control to Special Operations Command Africa (with reachback to the 8th PSYOP group's information warfare center at Fort Bragg, North Carolina), disrupting Chinese economic activities in Africa, see 1st Special Forces Command

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44. Sara Dudley et al., "Evasive Maneuvers: How Malign Actors Leverage Cryptocurrency," *Joint Force Quarterly* 92 (1st Quarter, 2019), accessed 19 September 2022, https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-92/jfq-92.pdf.

45. Danny Vincent, "One Day Everyone Will Use China's Digital Currency," BBC News, 24 September 2020, accessed 19 September 2022, https://www.bbc.com/news/business-54261382; Andrew Work, "China's DCEP Will Be the World's Sputnik Money Moment," Forkast, 10 August 2020, accessed 19 September 2022, https://forkast.news/china-cbdc-digital-currency-e-rmb-launch-preview-andrew-work/; Helen Partz, "Bank of Russia Issues Consultation Paper on Digital Ruble," Cointelegraph, 13 October 2020, accessed 19 September 2022, https://cointelegraph.com/news/bank-of-russia-issues-consultation-paper-on-digital-ruble.

46. Graphic created by authors, adapted from framework developed by Nathan Leites and Charles Wolf, *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts* (Santa Monica, CA: RAND Corporation, 1970), 35, accessed 11 October 2022, https://www.rand.org/content/dam/rand/pubs/reports/2006/R0462.pdf.

47. This construct builds on the systems framework developed by Leites and Wolf in *Rebellion and Authority*.

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Military Review
WE RECOMMEND

In "The Evolution of Economic Compliance," Christopher Sims, PhD, describes how the economic aspect of national power has long been used to protect national interests, influence the behavior of other actors, and achieve objectives in the international arena. To read this article from the July-August 2021 *Military Review*, visit https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/July-August-2021/Sims-Economic-Compellence/.

In "Economic Sanctions," Dr. Mark Duckenfield describes how economic sanctions are one method of coercion that states use to pursue their international political objectives, whether to deter an action, compel a change in behavior, or punish another state. To read this article from the September-October 2022 *Military Review*, visit https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/September-October-2022/Duckenfield/.

Russian reserve sergeants test for their final certification 5 August 2021 during the final stage of their training at the military training center at Tambov State University. (Photo by G. R. Derzhavin, Tambov State University)

Through the Looking Glass

Missing the Mark by Mirror-Imaging Competitors' Reserve Forces

Col. Andrew Jacob, Massachusetts Air National Guard
Cmdr. Christopher Wear, U.S. Navy Reserve
Lt. Col. Alexi Franklin, Maryland Army National Guard
Lt. Cmdr. Spencer Willig, U.S. Navy Reserve

Our system was expressly designed to ensure the Army can't go to war without all three components, which requires the support and involvement of our country as a whole. Armies don't win wars; nations win wars.

—Gen. Mark A. Milley

Prior to Operation Desert Storm, the United States Joint Reserve Force (JRF) was envisioned as a strategic force. In support of Desert Storm, each of the military services' Reserve Components (RC) provided limited operational warfighting or logistical capability. After Desert Storm, each service resumed a strategic RC operational support posture—until 11 September 2001. September 11 fundamentally changed the JRF model. By necessity, each service reoriented its RC to augment the Active Component in Global War on Terrorism operations. This new structure provided functionally trained personnel in a rapidly evolving and unpredictable environment, and the JRF gained tactical and operational expertise through regular mobilizations in support of the wars in Iraq, Afghanistan, and elsewhere.

In 2018, the Department of Defense's (DOD) *National Defense Strategy* refocused on great power competition, prioritizing a "2+3" construct of China and Russia as principal strategic competitors, with Iran, North Korea, and violent extremist organizations as secondary threats. Secretary of Defense Lloyd Austin further focused the DOD with his 4 March 2021 message to "Prioritize China as the Pacing Challenge."[1] This refocusing clearly has implications for the JRF. U.S. force structure planners are contemplating the man, train, and equip challenges associated with the potent capabilities posed by the restructuring of Russia and China's active-duty forces. In reviewing China as the pacing challenge in theory, and as we actively oppose Russian malign influence in the field, DOD analysis should also include a closer look at our RC model and our opponents' reserve force capabilities and goals.

In recent years, China and Russia have continued significant force structure reforms in their active forces, downsizing from large conscript armies with a defensive, regional, and strategic conflict focus to a more flexible, complex hybrid of active and reserve volunteer forces augmented by militias, foreign proxies, and contractors. This structure is far from a mirror image of our own; accordingly, strategists must understand the fundamentally different conceptual approaches that China and Russia are taking—different from the United States, from their Cold War models, and from each other. While Russia employs a more colorful, free-wheeling confederation of rogues as their "secondary forces"—neo-Cossacks, Chechen militias, international motorcycle gangs—the emerging Chinese model is far more controlled at the state level.[2] The recent growth and employment of China's maritime militia to press the advantage in disputed territorial waters is relatively well known and studied.[3] However, emerging research and reporting reveal that China is expanding its land-based militia operations in restive regions, emphasizing the role of technical militia units, and establishing a burgeoning private military security industry.[4] In the aggregate, these developments portend an increasingly complex opposing force landscape, the details of which are ignored at the peril of U.S. national security.

The U.S. Reserve Model

Both in response to U.S. battlefield success and due to their own internal dynamics, China and Russia are reforming their militaries to mirror the U.S. military in many respects. Both nations have downsized their standing conscript armies to shift toward smaller, higher-tech, professional volunteer forces and secondary forces as an economy of force measure, to calibrate escalation and deterrence, and to confound American notions of opposing force doctrine, tactics, order of battle, and the applicability of the law of war.[5] Within the DOD, U.S. military reserves are viewed as an essential strategic and operational reserve that enable sustained expeditionary operations. In the past twenty years, U.S. RC forces have been used extensively during the Global War on Terrorism. Currently, the DOD is attempting to pivot back to preparing for large-scale combat operations with China and Russia as potential opponents. With only 1.3 million active-duty service members, the United States would rely heavily on reserve forces in a large-scale combat operation against China or Russia. Given the massive reduction in their active-duty numbers since the end of the Cold War—Russia's active forces number nine hundred thousand and China's number two million—it is reasonable to assume Russia and China would also rely on their reserves.

Newly mobilized Russian reservists train on a rifle range 4 October 2022 in Rostov region, Russia. (Photo by Sergey Pivovarov, Reuters via Alamy Stock Photo)

China and Russia are peer military competitors with one another and the United States. Both nations possess large and capable conventional, active-duty military forces that have rough parity with one another. As a result, the capacity of those nations' reserve forces is particularly cogent. Any extended combat operation undertaken by these nations will implicate their reserve force structure, with success determined in no small part by their reserve components. However, Russia and China have taken a significantly different approach than the United States and from one another regarding secondary force development. China has a robust formal reserve but also relies on a militia system—interwoven with towns, villages, and corporations—that encompasses civil defense, cyberwarfare, and provocative actions on the high seas. In contrast, Russia has a small formal reserve but has relied on a complex collection of militias, mercenaries, contractors, proxies, and criminal gangs that de facto augment their uniformed reserve component.

For both China and Russia, to the extent that any literature discusses these forces, they are treated as footnotes or oddities as opposed to the integral part of Chinese and Russian military strategy that they have become. Furthermore, it is important to understand both on their unique terms. Existing U.S. military doctrine is insufficient in training leaders to fight the complexity of these evolving forms of force structure. In recent years, the U.S. Army updated its training doctrine to reflect the changing nature of war. Training Circular (TC) 7-100, *Hybrid Threat*, seeks to "describe hybrid threats and summarize the manner in which such future threats may operationally organize to fight U.S. forces."[6] While significant, the updated doctrine fails to fully capture the nuances of Russian and Chinese integration of "secondary forces" into their military operations. In TC-700, the hybrid threat is described as consisting of two or more of the following: military forces, nation-state paramilitary forces, insurgent groups, guerilla units, and criminal organizations. However, a companion manual—TC 7-100.4, *Hybrid*

Threat Force Structure Organization Guide—provides a different framework.[7] In TC 7-100.4, "threat forces" are those directly controlled by the nation-state, including active-duty armed forces, reserves, paramilitaries, and police forces. "Irregular forces" consist of insurgents, guerillas, criminals, and "noncombatants." In turn, "noncombatants includes armed and unarmed noncombatants," including "private security contractor organizations."[8] Of note, contractors are not mentioned at all in TC 7-100, a notable omission given the Wagner Group's extensive ground combat operations in Syria and Ukraine.[9] Continuing on in TC 7-100.4, "noncombatants" includes criminals and militias, both of which were already included in the TC as part of the irregular or threat forces categories. To further confuse matters, an additional category—"other combatants"—that was not in the introductory paragraph of the "irregular forces" section later appears in the body of the larger chapter, with categories yet again overlapping with other previously enumerated categories.

Perhaps related to this type of confusion, some have begun to criticize the "hybrid warfare" term. Some suggest that "hybrid warfare" both erases the nuance of contemporary Russian operations and ignores the long history of asymmetric warfare by Russia.[10] If the "hybrid threat" concept is internally inconsistent within U.S. Army doctrine, and if "hybrid warfare" is considered a weak term of art within academia to describe Russian doctrine, it likely fails to adequately prepare U.S. Army leaders to face complex Russian threats. Furthermore, it is undoubtedly inadequate as an umbrella concept with which to additionally describe the fundamentally different approach to secondary force structure utilized by another peer competitor—China.

Alternative constructs do exist to better comprehend complex opposing force structure. Vladimir Rauta categorizes irregular forces regarding their "relational morphology" and "relational embeddedness"

Col. Andrew Jacob, Massachusetts Air National Guard, is the commander of the 104th Operations Group and a command pilot with over 2,600 hours in the F-15C. His assignments include tours at Kadena Air Base, Japan; Tyndall Air Force Base, Florida; Nellis Air Force Base, Nevada; and Barnes Air National Guard Base in Westfield, Massachusetts. Jacob holds a BS in civil engineering from Clarkson University, and he is a graduate of the U.S. Air Force Weapons School and the School of Advanced Air and Space Studies.

Cmdr. Christopher Wear, U.S. Navy Reserve, is the deputy commander of NSWG-11. His assignments include multiple tours in support of Operation Iraqi Freedom, Operations Enduring Freedom and Infinite Justice in Afghanistan, and Operation Onward Liberty in Liberia. A Harvard Kennedy School Senior Executive Fellow, he holds a BA from the University of Oklahoma and an MA from the Naval War College.

Lt. Col. Alexi Franklin, Maryland Army National Guard, recently concluded an assignment as the National Guard liaison officer for Joint Task Force–National Capital Region/U.S. Army Military District of Washington and assumed command of 1st Battalion, 175th Infantry Regiment. His previous assignments include platoon leadership in the 173rd Airborne Brigade and command of the 244th Engineer Company; 253rd Engineer Company; and Company C (LRS), 1st Squadron, 158th Cavalry Regiment. A National Defense University CWMD Graduate Fellow, he holds master's degrees from Johns Hopkins University, Mount Saint Mary's University, and Missouri State University.

Lt. Cmdr. Spencer Willig, U.S. Navy Reserve, is a federal prosecutor in Vermont and the deputy operations officer of Navy Reserve U.S. Africa Command J-2. His military experience includes an individual augmentee deployment with the Joint Information Support Task Force (Special Operations) and various roles supporting the Naval Criminal Investigative Service and Office of Naval Intelligence. A former Fulbright Fellow to the Kyrgyz Republic, Willig holds an undergraduate degree in Russian from the University of Pennsylvania, a master's in international studies (Russian concentration) from the University of Pennsylvania Lauder Institute, and a JD from the University of Pennsylvania Law School.

Three alleged Russian mercenaries (*right*) are shown in an undated photo from a French military handout taken in northern Mali. Russia has engaged in clandestine military operations in at least half a dozen countries in Africa over the past decade using the Wagner Group, a mercenary force with the reputed aim of expanding Russian influence in strategic areas globally. (Photo by the French Army via Associated Press)

to the nation-state actor.[11] "Embeddedness" relates to the degree to which a secondary force is integrated into state-actor force structure, and "morphology" relates to the degree to which secondary forces replace state-actor force structure or provide a novel capability the state actor otherwise lacks. As a result, he designates secondary forces as "auxiliary," "affiliate," "surrogate," or "proxy" forces. Presumably, the relationship to the state actor is less malleable and more relevant than the "type" of secondary force involved in each conflict. As a result, this construct is potentially more helpful for intelligence gathering and operational targeting. Rauta uses Russian-aligned forces in the Russo-Ukrainian war as an example. In Ukraine, he details how auxiliary, proxy, affiliated, and surrogate forces became involved in the conflict in sequence. While a strictly linear relationship is far too simplistic to describe the events of the Russo-Ukrainian war, the events offer a potential map for the "road to war" that a peer competitor might use as it employs "secondary forces" in sequence.

While there is a general understanding that opposing forces will integrate secondary forces into their overall campaign, U.S. Army doctrine treats these organizations as separate and distinct entities at the operational level. The on-ground reality is more complex. The active integration of proxies into primary tactical-level formations is an overlooked aspect of contemporary Chinese and Russian military power. To that end, Phillip Karber's work in Ukraine is invaluable and insightful. He found that in Ukraine, when Russian battalion and brigade formations deployed to Ukraine, the headquarters and leadership structure left their conscripts back in Russia, with Ukrainian separatist and Chechen militias filling out those formations' ranks.[12] Karber's observations reveal a significant way in which the employment of Russian forces significantly diverge from U.S. "hybrid threat" doctrine.

However, Karber's recommendations ultimately lean toward the practical and tactical and less toward the abstract and strategic. Karber's focus is one of immediacy—how do we win?—versus the larger question: how did we get here? To that end, Volker Franke's "Decision-Making under Uncertainty: Using Case Studies for Teaching Strategy in Complex Environments" and Celestino Perez's "Errors in Strategic Thinking: Anti-Politics and

Members of Sansha City's maritime militia receive weapons training in 2013 in the Hainan Provincial Military District, People's Republic of China. (Photo courtesy of China National Radio)

the Macro Bias" discuss the importance of case studies to inform military education and training.[13] This stands in contrast to the intent behind the U.S. Army's TC 7-100 manual—a generic, one-size-fits-all approach to opposing forces—and fictional opponents the U.S. Army uses in training exercises. An unsurprising conclusion can be drawn. Rather than using generic "hybrid threat" doctrine to fight "Donovian" or "Atropian" foes, U.S. Army leaders would be better prepared to fight China or Russia with detailed study of the Russian and Chinese secondary force threat.

It is imperative that the DOD gain a better understanding of these forces regarding Chinese and Russian means, ways, risk, and strategic ends. Within the means, ways, risk, and ends construct, we believe China and Russia use "secondary forces" for the following reasons:

- **Means.** For both China and Russia, employing secondary forces is an economy-of-force measure, employing lesser-trained expendable forces in lieu of their primary forces, saving money and materiel.
- **Ways.** For both China and Russia, the very employment of secondary forces is an asymmetric measure that confounds Western media and governments. They also provide an escalatory ladder short of full warfare as their operations can be disavowed more easily than those of primary forces.
- **Risk.** For China and its opponents, risk is significantly lower. Chinese secondary forces—specifically the maritime militia—engage in circumspect operations on the periphery of Chinese territory. In contrast, Russia's secondaries pose a risk both to the Russian state and their opponents. Russian secondaries operate across the globe, are more loosely linked to the Russian government, and even occasionally fight one another.
- **Ends.** While the "ways" still confound opponents, there is little reason to believe the Chinese Communist Party does not closely control the actions of their secondaries. The nature of Russian secondaries undermines the legitimacy of the Russian government, and they may act against Russian interests. Chinese secondaries accomplish the "positive" ends of Chinese foreign policy by pushing territorial claims or achieving international cyberwarfare effects. Russian secondaries accomplish the "negative" ends of Russian foreign

Students attending the 5th National Student Military Training Camp receive a briefing on aviation weapons and equipment at the Engineering University of the People's Liberation Army Air Force. The training camp was held from 31 July to 11 August 2018. (Photo by Lin Congyi, China Military Online)

policy primarily by foiling the foreign policy goals of other nations.

Chinese Secondary Forces

In August 2021, the U.S. Army published, for the first time, Army Technical Publication 7-100.3, *Chinese Tactics*, which effectively captures much of the nuance described below.[14] Whether this information is reflected in military education programs, dynamic wargames, or training exercises waits to be seen. Despite the thoroughness of the publication, China has developed unique solutions in response to the regional and ethnic challenges it faces that evade easy characterization.

The emerging Chinese model for the employment of their reserves and other "secondary forces" is one of tight control at the national level. The People's Republic of China employs multiple security services to enforce internal order as well as potentially project offensive power. The Ministry of Public Security is the primary domestic civil police force. People's Armed Police (including the Chinese Coast Guard) are the national paramilitary forces capable of augmenting the People's Liberation Army, which has a sizeable, multidivision reserve component. Additionally, China has a massive land- and sea-based militia force and a burgeoning private security contractor industry, both of which are evolving and must be considered when evaluating the Chinese threat.[15]

As of 2011, China's active-duty forces fielded thirty-five armor and infantry divisions and thirty-nine separate ground combat brigades. The reserves provide an additional seventeen infantry divisions and infantry brigades, as well as seventeen antiaircraft artillery divisions, eight antiaircraft artillery brigades, two artillery divisions, and eight artillery brigades. While only one-third of a reserve unit undergoes thirty days of training in a given year and only 1 percent of the defense budget goes to China's reserves, in sheer numbers alone, this force structure significantly

extends China's military capabilities and competitive advantage.[16] In recent years, China has adopted many U.S. military concepts such as embracing jointness, a geographic combatant command structure, and even a National Training Center-like institution.[17] Much like the United States views the RC as an inviolable component of national defense, China is likely to invest more in its reserve components as it reduces its active forces.

China presses its advantage in disputed territorial waters with the maritime militia. Originally founded in the aftermath of the Chinese revolution, the Chinese People's Armed Forces Maritime Militia (PAFMM) was conceived and employed in the same vein as their land-based counterparts—a grassroots, people's force, with their strength in numbers and zeal in lieu of materiel, tactics, or training.[18] Defensively focused, their initial purpose was defeating any invasion attempts launched from Taiwan by Nationalist Chinese forces.[19] However, the maritime militia also has a history of offensive operations that have been occurring with increasing frequency. The first notable offensive use of the PAFMM came during the 1974 Battle of the Paracel Islands, as militia vessels transported hundreds of Chinese troops in an amphibious operation.[20] Since then, the militia has participated in the harassment, encroachment, or seizure of the Senkaku Islands (1978), Mischief Reef (1995), USNS *Impeccable* (2009), USNS *Howard O. Lorenzen* (2014), Ogasawara and Izu Islands (2014), Scarborough Reef (2012), Second Thomas Shoal (2014), Senkaku Islands again (2016), the Sandy Cay shoal (2017), Paracel Islands (2018), Malaysian exploration vessels (2020), and Whitsun Reef (2021).[21]

China has historically established militia units in villages and factories, and new efforts are underway to establish technically inclined militia units specializing in cyber operations, operating unmanned aerial vehicles, or missile maintenance, albeit with mixed results.[22] Research and reporting reveals that China recently employed its land-based militia in an offensive role, sending five squads into an area disputed with India called the Eastern Ladakh region, potentially portending an emerging land-based analogue to the PAFMM's operations.[23]

Active in Xinjiang since the mid-1950s, the Xinjiang Production and Construction Corps is a vast quasi-civilian, paramilitary force that number over 2.7 million personnel that is equal parts militia, internment force, and multi-billion-dollar business entity that controls multiple cities across the restive region. While the Xinjiang Production and Construction Corps is essential to the repression of the Uighurs, it is possible that this sizeable force could be mobilized to support contingencies elsewhere.[24] Such policies are not ancient history; according to a Tibetan independence organization, currently "78% of all Tibetan students from ages six to 18" are schooled in residential boarding schools, described as "military-style boot camp[s]."[25] Since the 2020 border standoff with India, China has been actively recruiting among underemployed Tibetan youth to form border defense militias to oppose the Indian Army, reportedly due to the difficulty that Chinese recruits had fighting in extremely high altitude combat.[26] The first militia contingent of one hundred personnel—operating without uniforms or ranks—has allegedly been deployed to the Chumbi Valley region where China shares a border with India, Nepal, and Bhutan.[27]

By analyzing Chinese government speeches and white papers, the year 2049 as the self-imposed, mythological deadline the Chinese government has given itself to reclaim Taiwan.[28] China's ability to develop and leverage a multitude of groups across a vast spectrum of readiness, multiple warfighting domains, and even with a targeted ethnic dynamic should give U.S. planners pause. While mass amphibious warfare is what the Chinese military has been overtly preparing for, it is highly likely that the first strike against Taiwan will not come from an easily observable conventional military force, but from a little-understood secondary force. In both a military and civilian context, China has proven adept and unembarrassed at integrating technology and techniques from foreign powers to gain any advantage it can. Given Russia's success in the hybrid warfare conquest of Ukraine, it is equally likely that a "beached" maritime militia vessel or the "emergency landing" of a Chinese civilian airliner filled with paramilitary police will establish the initial pretext and beachhead for a Chinese invasion force.

Russian Secondary Forces

Russia's reserve force management and structure reflects the Russian government's continuing struggle to balance strategic depth and operational readiness—all against the backdrop of unpredictable budgets,

shifting cultural views on national service, and a dated, Soviet-era conscription system. Despite years of attempted reforms, the Russian military has failed to achieve strategic depth or operational capability within the uniformed, traditional reserve component. Proxy and paramilitary organizations outside the purview of the Ministry of Defense have accordingly represented important manpower pools enabling some surge capability, though these also seem to have limited utility as strategic reserve forces in a great power competition context.

Soviet manpower models were grounded in a compulsory draft, which provided active-duty manpower and trained reservists comprising ex-conscripts who had completed their service.[29] Economic and cultural crises put enormous pressure on this model, culminating in major reforms (coinciding with the Russian Great Recession) in 2008–2009. Among other things, brutalization of junior draftees by senior conscripts led Russian youths to take extraordinary measures to avoid service. By 2001, 88 percent of eligible men had a deferment or exemption.[30]

But attracting and retaining professional service members has proven difficult, expensive, and controversial within a military establishment designed around the conscript model.[31] The difference in cost between a conscript and a professional volunteer is striking, with the latter costing thirty-one times as much as the former in monthly salary.[32] These tensions have yielded a hybrid force mix of conscripts serving twelve-month terms and professional "contract" soldiers filling Russia's authorized active-duty end strength of about one million service members, with about nine hundred thousand recently discharged veterans available for recall as reservists.[33]

Simultaneous with this shift to a more professional active-duty force, Russia has repeatedly over the past decade announced its intention to create a Western-style reserve system capable of fielding operationally deployable units. Those efforts have failed. Despite plans to create a large-scale operational reserve modeled after the U.S. National Guard program, Russia's operational reserve as of 2020 comprised about six thousand troops organized into two or three units of dubious quality.[34] Significantly, these units are designated as "territorial defense battalions" intended to free up active-duty units by assuming limited rear-area security missions.[35]

On paper, Russia can mobilize and train reservists until they reach the age of fifty for one two-month period of active duty every three years, not to exceed twelve months over their total period of reserve service.[36] Official communications describing large-scale exercises emphasize reservist participation, highlighting reservists supporting both combat support and combat-arms units.[37] But many reservists simply ignore active-duty orders due to weak job protections for those called to active duty and minimal consequences for skipping exercises.[38] Others have noted that official descriptions of reserve unit training events do not mesh with known manning and retention data, likely overstating the number of reservists available to participate in such exercises.[39] Even Russian sources have conceded that reserve centers intended to provide regular refresher training have not yet been stood up.[40] Significantly, Russian sources tend to emphasize reserve support to Army units; the Russian navy was apparently only beginning to contemplate forming an operational reserve in the spring of 2018.[41] With regional press reporting as recently as fall 2021 that Russia was still "forming" combat reserve forces, it appears Russia has made no meaningful progress toward standing up a U.S.-style reserve system.[42]

In lieu of an effective formal reserve, Russia has cultivated a range of proxy and paramilitary forces: Chechen militias, the Night Wolves motorcycle gang, and private military companies such the Wagner Group along with a hodgepodge of Soviet-style and even pre-Soviet paramilitary organizations have developed, from the "Young Pioneers"-style "Yunarmii" youth group to semiofficial "Cossack" formations.[43] These groups do not appear to offer reliable replacements for military units or internal security forces; their prevalence may reflect limited government security resources more than a conscious effort to foster a reserve capability.[44]

In 2013, Russia created "reserve component commands," mandated to develop and deploy military units in times of conflict.[45] In 2014, one of those units—the 12th Reserve Component Command of Russia's Southern Military District (later reorganized as a "territorial troops center")—established, organized, recruited, manned, and equipped Ukrainian rebel armed forces.[46] The 2014 Military Doctrine of the Russian Federation called for the "formation of territorial troops to provide protection and defense

of military, state and special facilities, critical infrastructure, including transport, communications and energy, as well as potentially hazardous sites."[47] According to recent Ukrainian analysis and reporting, Russia began an ambitious campaign to recruit reservists in August, in which reportedly "only a month is given for the selection of personnel for two armies."[48] While much attention has been paid to active-duty Russian troop deployments and maneuvers along the Ukrainian border, the active Russian military cannot seize and hold a significant portion of Ukraine by itself. In retrospect, the Russian government's inability to rapidly man, train, and equip a sizeable reserve force in the Southern Military District can be viewed as an unacknowledged predictor of the failure of Russia's second invasion of Ukraine.

Conclusion

To an extent, China and Russia view U.S. reserve forces as the model to emulate. Their nations' respective military RC forces lack the robust capacity the U.S. RC offers. However, both nations will likely continue to support a complicated array of proxies, militias, gangs, and private security forces regardless of further indigenous development of a formal reserve component. Russian and Chinese secondary forces pose a complex challenge that presents an asymmetric threat, confounds Western understanding of the law of war, and defies easy integration into strategic, operational, or tactical doctrine. Chinese and Russian secondaries have fought and won Russian and Chinse conflicts, are engaged in escalatory actions across the globe, and are already partly pre-positioned in key areas that China and Russia want to influence. The new nature of Chinese and Russian warfare poses a broader intellectual challenge beyond a narrow operational one.

The existence of these secondary forces raises a host of questions, some of which have been addressed above but all of which require further study and analysis: Why do China and Russia involve such disparate groups? What are their contrasting goals for these groups? How do they pose a particular problem for Western democracies that adhere to the international rule of law? How can the United States design an operational approach to defeat these forces? What does the employment of these secondary forces say about the nature of Chinese and Russian power, and how they seek to align means, ways, and risk to meet their strategic ends? How might China and Russia employ these forces in future conflicts? How can the United States defeat these forces? What Russian or Chinese operational and organizational models could the United States co-opt?

Instead of focusing solely on active Chinese and Russian forces, the United States must adjust to the pacing threats during great power competition in an environment where China and Russia may have already staged proxies, contractors, or criminal gangs; deploy reservists; or raise militias prepared to act across the entire spectrum of armed conflict. Without taking these steps, we may find ourselves unprepared to conduct phase zero—and beyond— operations in great power competition. ■

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"We cannot enter into alliance with neighboring princes until we are acquainted with their designs. We are not fit to lead an army on the march unless we are familiar with the face of the country—its mountains and forests, its pitfalls and precipices, its marshes and swamps. We shall be unable to turn natural advantages to account unless we make use of local guides."

—Sun Tzu, Book 11, *The Nine Situations*
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Soldiers from 5th Battalion, 4th Air Defense Artillery Regiment fire a Stinger missile from the Maneuver Short Range Air Defense (M-SHORAD) system on 7 October 2021 at a Bundeswehr range on the Baltic Sea coast of Germany. (Photo by Maj. Robert Fellingham, U.S. Army)

Once More unto the Breach

Air Defense Artillery Support to Maneuver Forces in Large-Scale Combat Operations

Col. Glenn A. Henke, U.S. Army

In William Shakespeare's *Henry V*, the titular king motivates his army on two memorable occasions. The second occasion is the famous Saint Crispin's Day speech: "We few, we happy few, we band of brothers."[1] The first instance invokes the speech from which this article takes its title. The 1989 Kenneth Branagh film adaptation portrays this scene as an event in which most are eager to participate following the king's speech, despite the steep odds against them as they attack a determined defender: "Once more unto the breach, dear friends, once more."[2] The air defense artillery (ADA) branch currently finds itself reattacking ground it previously held as it determines how to support maneuver forces in a multidomain fight with divisions as the primary unit of action. This requires a critical look at command relationships and authorities, the role of Maneuver-Short Range Air Defense (M-SHORAD) and the Integrated Air and Missile Defense Battle Command System (IBCS) supporting corps and divisions, and how best to train and equip ADA forces for large-scale combat operations (LSCO).[3] The task to reintroduce air defense capability into a multidomain Army occurs amid the backdrop of a growing experience gap; the captains who deactivated the divisional SHORAD batteries are now colonels, and their senior NCOs are almost all retired. As a result, branch leaders must develop the capability as part of an integrated learning campaign to inform immediate outcomes at the unit level while simultaneously supporting critical combat development activities impacting Army 2030.

The experience gap is also an opportunity to look at the challenges of ADA support to maneuver forces with fresh eyes. This perspective is critical, since the tactics and procedures from the 1990s and early 2000s may not be entirely suitable on a battlefield with a proliferation of air threats that diminishes the utility of broad categories like short-range and high-altitude systems. The further development and fielding of the IBCS makes the SHORAD and high-to-medium air defense distinctions even less meaningful. If this article argues anything effectively, it is that ADA support to maneuver is much greater than the creation of SHORAD units organic to divisions and instead involves nearly the entire ADA portfolio of weapons systems. From a training perspective, this will be most visible in the Mission Command Training Program (MCTP) exercises for corps and division commanders supported by ADA brigades, as well as the Roving Sands series of exercises conducted by 32nd Army Air and Missile Defense Command (AAMDC).

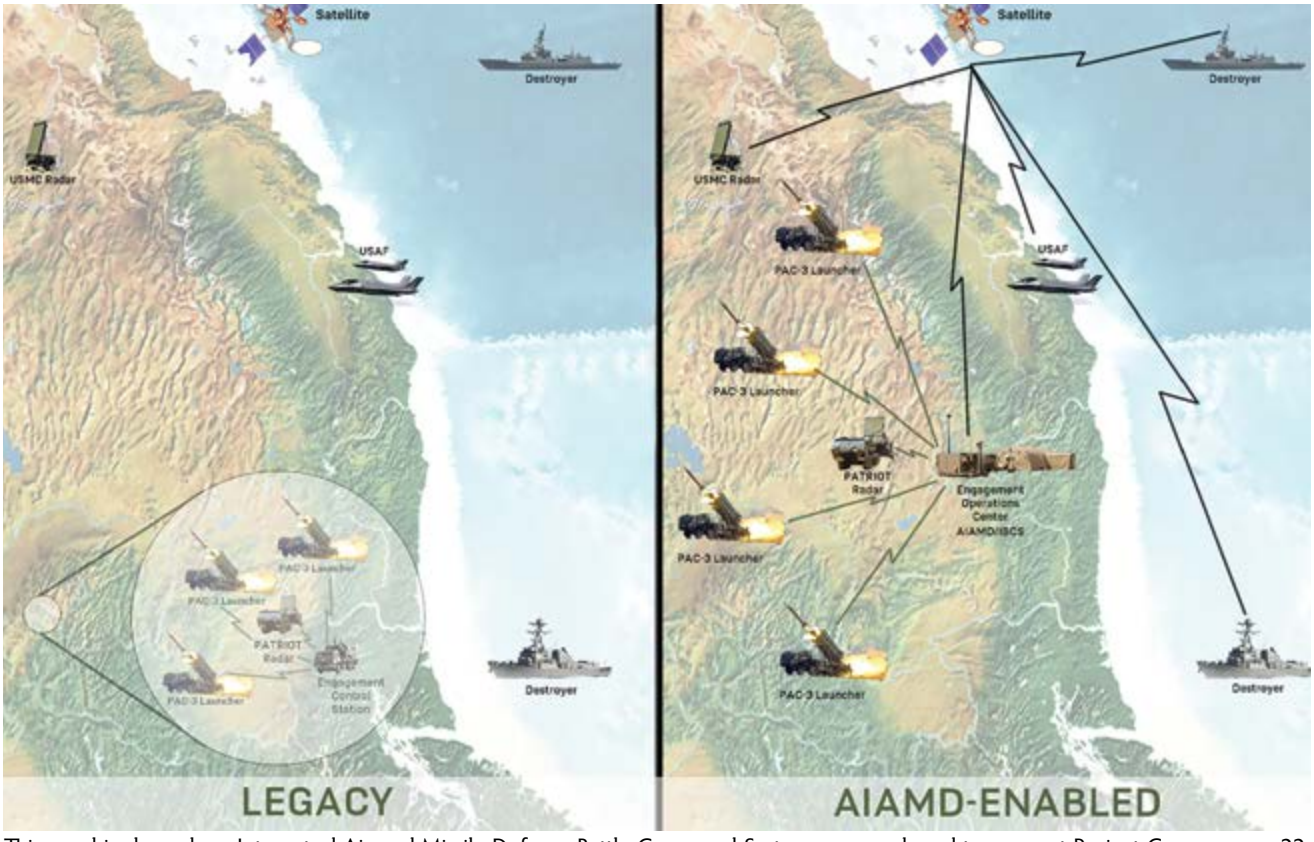
A final opportunity presents itself in how the branch leverages the training approaches of the past two decades that have enabled sustained operations across the globe. The ADA branch has sustained continuous readiness by forward-stationed units, maintained an enduring rotational presence in the U.S. Central Command area of responsibility since 1991, and generated ready units for global employment without interruption. While most of these missions have been fixed or semifixed site defense, much of what the branch knows can be applied or used as the starting point for support to the multidomain fight the Army envisions.

My ultimate purpose is to support discussions among experienced professionals who may disagree on how to address the challenges presented. Although this article makes recommendations that may not be adopted, I will judge this effort a success if the work that follows informs and supports the debates leading to the ultimate solutions.

Part 1: Fighting the Air and Missile Threat in LSCO

Command, support, and authorities. One of the most critical tasks in any military operation is establishing the relationships that enable commanders at echelon to successfully execute their assigned missions. These include the normal command relationships (operational control [OPCON] and tactical control [TACON], primarily) and support relationships (direct, general, etc.). For ADA units, a discussion of command relations (COMREL) must also include the authorities granted within the joint force commander's area air defense plan (AADP). The combination of command relationships,

Col. Glenn A. Henke is the deputy commanding officer of the 32nd Army Air and Missile Defense (AMD) Command. His recent assignments include commander of the 35th Air Defense Artillery Brigade; CJ38 AMD Division chief for U.S. Forces Korea and Combined Forces Command; and assistant chief of staff, G-3, 32nd AMD Command.

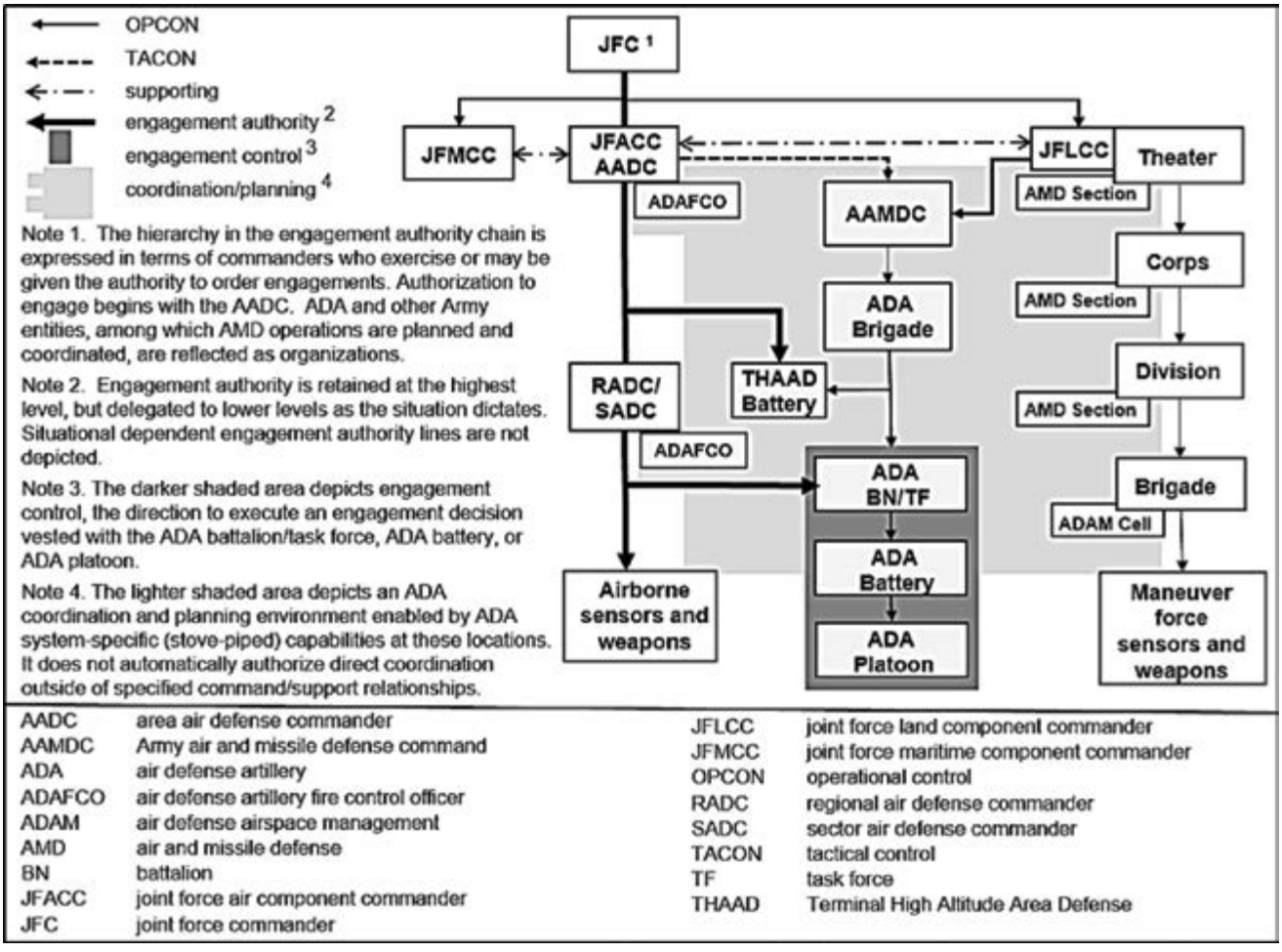


This graphic shows how Integrated Air and Missile Defense Battle Command System was employed to support Project Convergence 22, hosted by Army Futures Command at Yuma Proving Ground, Arizona, from 19 September to 18 October 2022. Project Convergence is the Army's campaign of learning, experimentation, and demonstration aimed at aggressively integrating the Army's weapons systems and command and control systems with those of the rest of the joint force. (Graphic courtesy of the Air and Missile Defense Crossfunctional Team, Army Futures Command)

support relationships, and AADP-granted authorities establishes the framework for decision-making and is in most cases the single most important part of any plan. Experience shows that leaders with the right authorities and a firm understanding of the commander's intent will be more successful than equally talented leaders operating under overly restrictive or unclear command and control structures.[4]

Existing doctrine described in Field Manual (FM) 3-01, *U.S. Army Air and Missile Defense Operations,* provides a useful starting point for describing a COMREL structure that enables ADA commanders to achieve their missions within the existing joint constructs.[5] The joint nature of the air defense mission is a critical factor and must be addressed in exercises when ADA brigades support maneuver forces to avoid building unrealistic expectations in what division and corps commanders can expect from their air defenders as well as understanding their own authorities.

The structure described in FM 3-01 places the AAMDC as OPCON to the coalition forces land component commander (CFLCC) and TACON to the combined forces air component commander (CFACC). The TACON relationship is typically for the purposes of controlling ADA fires (see figure 1, page 71). Although not described in doctrine, the AAMDC may also be in direct support of the CFACC. Since the CFACC is doctrinally (and in general practice) both the area air defense commander and the supported commander for air and missile defense, an explicit command relationship between the AAMDC enables the CFLCC to meet the requirements of the joint force commander. The ADA brigades are in turn OPCON to the AAMDC, with fire control coordinated and controlled through the air defense artillery fire control officers (ADAFCO) collocated with a U.S. Air Force Control and Reporting Center (or similar organization). This structure varies by theater, most



(Figure from Field Manual 3-01, *U.S. Army Air and Missile Defense Operations*, December 2020)

Figure 1. Theater Air and Missile Defense Command Relationships

notably on the Korea Peninsula, but the basic structure generally remains in place at the theater level.

During Roving Sands 22 as well as recent MCTP Warfighter exercises, the ADA brigade was placed OPCON to the corps commander, deviating from Army doctrine. While this was primarily done to facilitate exercise design and minimize the need for a robust AAMDC High Command response cell, it had two effects that hampered execution. First and most critically, it divorced the ADA brigade from the theater fight by effectively severing links to the joint structures that execute AMD operations. Second, it created expectations with maneuver commanders that they have a freer hand than joint operations will usually provide during real-world operations. Given the difficulty in imagining a scenario where the CFACC would not be the supported commander for air and missile defense, this omission is a significant shortcoming and rather questionable from the perspective of joint doctrine. As a result, this should be avoided in training.

The use of support relations provides an effective way to bridge this gap. The CFLCC can place specific ADA brigades into direct support of a corps commander while maintaining the OPCON link to the AAMDC. This enables the AAMDC to execute and synchronize the theater AMD fight while ensuring the corps commander has the air defense support required to enable their own mission accomplishment. From a practical perspective, the differences between TACON and direct support are negligible for ground-based units. This is not necessarily true for capabilities operating in the air or maritime domains, which could explain the general reluctance of those component

The U.S. Army conducted a successful intercept test with the Integrated Air and Missile Defense Battle Command System 12 December 2019 at White Sands Missile Range, New Mexico. (Photo by Luke Allen, U.S. Army)

commanders to rely on support relationships when receiving or providing support.

Since joint doctrine is extant, meaning that it describes the accepted and agreed practices for joint operations, it functions somewhat differently than Army doctrine. Army doctrine provides a significant degree of flexibility to drive change in how the Army fights; this is not the function of joint doctrine. As a result, Army capabilities like ADA that are closely integrated with joint mission areas (like air defense) must operate within the construct of joint doctrine. The joint counterair framework cannot be overlooked for the convenience of exercise design. This requires a firm appreciation for the AADP by Army leaders, as well as an appreciation by the CFACC and joint force commander for the authorities required by Army units.

The discussion of authorities described in the AADP becomes critical when it relates to fire control of ADA forces supporting maneuver units. In general, maneuver commanders require permissive fire control for SHORAD forces and are best served by local engagement authority for unmanned and rotary wing threats below the coordinating altitude. This requires explicit delegation of engagement authority to local commanders codified in the AADP since the coordinating altitude does not by itself provide engagement authority. The protection of ground forces will require commanders to assume risk to friendly unmanned platforms when those systems are operating in a manner consistent with hostile criteria. This is less of a challenge for Patriot units as well as IBCS-enabled units that can engage well above the coordinating altitude and are already tied to the ADAFCOs and the joint fire control structure. While existing SHORAD platforms have limited ability to engage above commonly used coordinating altitudes, this will not always be the case, and therefore, fire control must be included in the organizational design of these units. The wide adoption of IBCS as the mission command platform provides a potential solution to this problem, given the flexibility of the system. Regardless of platform, all these authorities must be outlined explicitly in the AADP, and the Army would be well served to ensure future iterations of Joint Publication 3-01,

Air defenders from 5th Battalion, 4th Air Defense Artillery, conducted a culminating field training exercise with both their legacy Avenger and new Maneuver Short Range Air Defense systems at Grafenwoehr Training Area in Germany, 17–21 October 2022. (Photo courtesy of 10th Army Air and Missile Defense Command)

Countering Air and Missile Threats, communicate these requirements to the joint force.

Another critical requirement for both maneuver and ADA commanders is positioning authority. Like engagement authority below the coordinating altitude, this cannot be assumed since AADPs in practice often withhold this authority at the theater level. While this approach has merit when ADA units are exclusively focused on a theater-level defended asset list (DAL), this is overly restrictive when ADA units are defending a corps or division-level DAL. This also points to the need for the AADP to explicitly establish the authority for CFLCC subordinate commanders to establish their own local DAL without a requirement for CFACC approval. The AADP must establish the authority for positioning these units by the supported maneuver commander or the ADA commander in direct support. While all of this is consistent with existing joint doctrine, an AADP for a LSCO fight requires more detail in the AADP (usually within an authority's matrix) than is currently practiced in training and current operations. At a minimum, AADPs and orders for MCTP exercises and Roving Sands should explicitly define these authorities.

Brigades supporting corps and divisions. The theater structure described in the previous section should serve as the starting point for routine support to MCTP exercises and Roving Sands. To recap, this structure would place an ADA brigade in direct support to a corps with OPCON retained by the AAMDC. While the current doctrine is in no way comprehensive, nor does it cover the numerous variations that may arise, the approved Army doctrine should at least serve as the starting point for exercise design. While some maneuver commanders may desire to exercise OPCON of all capabilities supporting them, this direct support arrangement is hardly unprecedented in our previous and current operating environments. This structure will likely continue as the Army leverages capabilities following COMREL to other combatant commanders, such as U.S. Cyber Command and U.S. Space Command. Fortunately, Army doctrine on

support relationships provides supported commanders considerable authority over supporting units in the accomplishment of their missions, and ADA units are no different.

In addition to the COMREL, an ADA brigade supporting a corps-level MCTP exercise requires an exercise AADP with sufficient authorities to achieve mission success, as also described in the previous section. This requirement for authorities in the AADP also applies to SHORAD units assigned to maneuver units. The exercise AADP must address engagement authorities of local commanders, the authorities inherent below the coordinating altitude, and positioning authority.

Once a workable framework for decision-making is established for the exercise, a credible threat is required to drive the commander's training objectives. As the OPFOR units at the combat training centers have demonstrated for decades, Army units challenged by dynamic and thinking enemy forces will achieve higher levels of proficiency than units fighting a less aggressive or capable foe. The replication of the air and missile threats is no different, and the emerging operating environment provides numerous examples of how our adversaries may employ capabilities to defeat or disrupt Army forces. For training purposes, corps and divisions should encounter a threat that can employ increasingly accurate ballistic missiles, cruise missiles, groups 1-3 UAS, along with traditional rotary and fixed-wing threats.[6] These threats should be replicated and appropriately moderated in federated simulations with corresponding effects adjudicated against training units. If the Nagorno-Karabakh conflict of 2020 and ongoing hostilities in Ukraine are any indicators, these threats should be replicated regardless of whether the unit has dedicated ADA units to counter them, though to varying degrees based on the training unit's ability to defeat them.

One argument against presenting a realistic threat, particularly when ADA capabilities are lacking, is that this would prevent the corps or division commander from achieving their training objectives during MCTP exercises. It is unlikely our adversaries will see this the same way. A realistic threat will also drive the changes the Army has already identified as critical to success in multidomain operations, to include camouflage, command post disaggregation, and other passive defense measures. A "pushover" threat will not help build the combat proficiency required by Army forces. A moderated threat can be dialed up or down to drive training objectives and ensure units address all four pillars of air defense, particularly when a supported unit lacks active defense capabilities. Since some of the systems with the capability to defeat these threats prior to launch reside at the theater level, corps and divisions will also gain training on how to leverage required joint capabilities.

> "A 'pushover' threat will not help build the combat proficiency required by Army forces."

The return of ADA brigades and eventually M-SHORAD battalions to MCTP exercises provides the branch an opportunity to validate and refine doctrine as commanders and their staffs solve the military problems that unfold during the exercises. One example of this is where air defense as a mission belongs within the framework of warfighting functions (WfF). Staffs continue to struggle with the confusion stemming from the ADA branch as part of the Fires Center of Excellence while the air defense mission resides in the protection WfF. The question of whether the mission "belongs" to a given WfF is only problematic if one takes a dogmatic view of WfFs as a construct. The WfFs are a means to organize missions and associated functions, and the Army tends to be more practical regarding these matters, particularly for well-understood capabilities. The lack of a "maneuver" cell or comparable working group in a division headquarters demonstrates this practicality. Likely, units conducting MCTP exercises will develop

new practices that enable mission success, and the WfFs will eventually sort themselves out. Through this evolutionary process, we may determine whether a protection working group structure facilitates the air defense mission or restricts it too narrowly. Commanders of ADA brigades and battalions supporting these exercises play a critical role in building this understanding and establishing best practices.

Corps and divisions executing MCTP exercises will need dedicated education on fighting with ADA units as part of the leader training program along with the organized academic sessions that precede a Warfighter. This is also true for brigade combat teams executing combat training center (CTC) rotations with ADA formations. Just as today's ADA colonels deactivated their batteries and platoons, many of today's brigade commanders last trained with SHORAD forces as lieutenants and captains. TRADOC continues to refine precommand courses, particularly phase 2 that focuses on warfighting, and these revisions should include dedicated discussions of air defense as a mission and ADA as a capability. Part of this education at all levels should include the earlier discussion on COMREL and authorities.

ADA brigade commanders will need to deliberately train their staffs to support maneuver commanders during MCTP exercises. The Roving Sands exercises held by 32nd AAMDC provide a CTC-like experience that trains brigades and battalions to execute sustained field operations in support of a maneuver fight. Since Roving Sands is only held every two years due to the complexity and scale, only one in four Forces Command (FORSCOM) ADA brigades will have this training experience in a two-year Roving Sands cycle. Aside from the training opportunities that may arise from the joint exercise program, ADA brigades require home-station training scenarios that challenge staffs and provide commanders the means to assess their formations. The MCTP team provides leader training as part of the exercise cycle, and most divisions and corps conduct a series of command post exercises that precede the Warfighter. These events will continue to provide the best training opportunities for ADA brigade commanders and their staffs. For contingency operations, the FORSCOM ADA brigades entering a Global Force Management Allocation Plan response-force mission period will continue to execute a culminating training event supervised by the 32nd AAMDC. The scenarios for these events must evolve to ensure that units are prepared for global employment as the operating environment evolves.

Integrating maneuver SHORAD. Prior to the Army's transformation to brigade combat teams as the primary unit of action, divisions had assigned SHORAD battalions. Batteries habitually supported specific brigades in a direct support role, while the battalion commander and staff supported the division (G staff) headquarters. The battalion S-2 (intelligence officer) supported G-2 analysis of air threats, the S-4 (logistics officer) advised the G-4 on missile allocation and parts, and the S-3 (operations officer) worked with the G-3 for plans and operations. Additionally, each SHORAD battalion provided a small cell in the division G-3 to support plans and operations, a precursor to current Air Defense Airspace Management (ADAM) cells. In this way, a SHORAD battalion commander had responsibilities equivalent to the AAMDC commander's responsibilities to the CFLCC as theater army air and missile defense coordinator. In most cases, the ADA battalion commander was dual hatted as the division air defense officer.

As the Army rebuilds divisional SHORAD capacity with M-SHORAD units, these battalion commanders will resume these traditional roles while supporting MCTP exercises and CTC rotations alongside their division-level counterparts. These division-level responsibilities require the branch to look at how it develops battalion commanders and field grade officers since none of these officers have direct experience with a pre-transformation divisional structure. Just as Baron von Steuben advised on the careful selection of NCOs in the Continental army, the selection and development of M-SHORAD battalion commanders is a task that cannot be overestimated in importance.[7] This training program would benefit from sending selected commanders as observers to CTC rotations and MCTP exercises. Much of the course work for ADAM cells is also applicable and can be integrated into precommand training.

Another talent management challenge will be sourcing observer controller/trainers (OC/T). The ADA branch has long recognized the need to select high-performing officers and NCOs for duty at the CTCs and MCTP. Given the projected growth of the branch in the coming years and the associated demands

Soldiers practice assembling the Mobile Low, Slow, Small Unmanned Aerial Vehicle Integrated Defense System outside of Camp Buehring, Kuwait, 22 January 2022. (Photo by Spc. Damian Mioduszewski, U.S. Army)

to fill other critical requirements while also building a cadre of joint-qualified officers eligible for brigade command slating, OC/T duty positions will continue to be challenging fills, particularly at the field grade and senior NCO levels. For officers, this will likely drive the need to focus broadening assignments to the most critical requirements. The NCO corps will have to balance OC/T requirements with other critical fill requirements like drill sergeant and recruiting billets. Given the growth of ADA warrant officer positions and roles since 2003, the branch will also have to look at how this cohort should support CTCs and MCTP manning.

Consistent with the previous discussion on threat representation in MCTP exercises, realistic training demands a credible and lethal threat representation at the CTCs. The advances and proliferation of threat capabilities requires a flexible model that allows the CTCs to modify the threats presented at the speed of relevancy. Home station training will likely be constrained by local airspace restrictions and the ability to replicate threats, so the first real "red air" a soldier might see will likely be at the CTC. An installation-level red air team employing groups 1-2 UAS may partially mitigate this gap by providing critical training opportunities prior to a CTC rotation or overseas deployment. This capability would be beneficial at all installations with MTOE units, not just those with assigned M-SHORAD forces.

Fire control and engagement authority for M-SHORAD forces presents topic for considerable debate as the branch decides how it will design these forces and the supporting structures. The solution likely lies within a continuum. At one extreme, engagement authority rests with each individual crew, while at the other extreme, all fires are controlled by ADAFCOs. As the defense of the National Capital Region demonstrates, local conditions and risk acceptance levels can drive a high-control solution.[8] Given the anticipated need to operate in a communications-disrupted environment while simultaneously reducing friendly electronic signatures to increase survivability, a distributed fire control is probably more desirable and ultimately more feasible. This reinforces the earlier discussion on the Army's need to favorably shape authorities

described in the AADP. Army Service component commands have a critical role in shaping this discussion with the supporting theater air components, and we have seen recent successes in delegating engagement authorities for the counter-small unmanned aircraft system (C-sUAS) fight. This should also reinforce the need to focus on division ADAM and joint air ground integration center training to shape the airspace control measures required to support divisions. The ultimate fire control solution and authorities must also account for the continued fielding of C-UAS capabilities operated by soldiers outside the ADA branch. The ADA branch will likely remain the proponent for training and certification of C-UAS platforms regardless of who operates them.

The future fielding of IBCS-enabled units drives additional tactical considerations, given the inherent flexibility of the system to integrate multiple sensors and effectors. Experimentation has already shown how IBCS can integrate joint sensors; conceivably, an IBCS-enabled M-SHORAD battalion could have attached Patriot launchers and IBCS fire control network nodes receiving joint sensor tracks (e.g., F-35) defending a division-level asset. A system as flexible as IBCS in turn requires a fire control model that provides equal flexibility to maximize the weapon system effectiveness. Further joint experimentation is critical in developing this model.

The fielding of M-SHORAD units to divisions will take place over many years, and in the interim, corps, division, and maneuver brigade commanders will continue to rely on their ADAM cells. Based on available ADA officers and warrant officers, these cells are currently undermanned across FORSCOM. The growth of M-SHORAD battalions will further stress the ability to align talent with ADAM cells. Each new M-SHORAD battalion has the same number of ADA captain authorizations as the ADAM cells in one and one-third divisions, and enough ADA warrant officer authorizations to zero out all but one slot in a division. These talent management challenges come as division and brigade commanders become increasingly reliant on their ADAM cells to integrate the unit air picture into the joint air pictures and emerging C-UAS capabilities, as demonstrated by recent experiences by maneuver commanders supporting Operation Inherent Resolve and Ukraine support operations.[9] The 108th ADA Brigade has piloted an ADAM cell mentorship program with XVIII Airborne Corps units to bridge this gap and assist maneuver commanders in adapting to the emerging operational environment. Based on the successes and positive feedback from the commanders of the supported corps and divisions, the 32nd AAMDC will expand this program to other FORSCOM units in the coming year. ADAM cells could also benefit from broader exposure to MCTP exercises and Roving Sands in an observer or guest OC/T role.

Part 2: Training and Equipping ADA Units for LSCO

Training and mission essential task lists. A comprehensive view of ADA unit training is a precondition in preparing for large-scale combat operations. The challenge facing the branch is determining how we modify our training while still preserving the best practices that have allowed us to generate sustained readiness over the past few decades. Additionally, the branch must determine how an IBCS-enabled force should train, given the tremendous flexibility in task organization the system enables. Since IBCS fielding is expected to take nearly a decade, the branch has an opportunity

Infantry Battalion METL (IBCT)

1. Conduct Area Defense
2. Conduct a Movement to Contact
3. Conduct an Attack
4. Conduct an Air Assault
5. Conduct Area Security
6. Conduct Expeditionary Deployment Operations at BN level

ADA Battalion METL (Patriot)

1. Conduct Air and Missile Defense Operations
2. Conduct Expeditionary Deployment Operations at BN level

(Figure adapted from HQDA METLs, Army Training Network)

Figure 2. Infantry Battalion and Patriot Battalion METL Comparison

Conduct Air and Missile Defense Operations Task Summary

AAMDC (Task 44-EAC-8040)
1. Conduct Air and Missile Defense theater level planning.
2. Commander serve as the Deputy Area Air Defense Commander (DAADC) when designated.
3. Execute AMD operations.
4. Provide theater AMD coordination teams and liaison forces to the appropriate Joint Operations Area (JOA) elements.
5. Protect systems and capabilities in the JOA.
6. Adjust air defense coverage.

Brigade (Task 44-BDE-8040)
1. Plan air defense.
2. Coordinate air defense.
3. Integrate air defense assets in accordance with the Area Air Defense Plan (AADP).
4. Adjust air defense coverage.

Battalion (Patriot) (Task 44-BN-8040)
1. Battalion XO leads staff to plan air defense.
2. Coordinate airspace control activities with join and subordinate air defense fire units.
3. Provide Early Warning (EW) to supported assets.
4. Utilize weapon systems capabilities to provide AMD coverage to defended asset, protected maneuvering assets, and to protect the force from enemy surveillance, air attacks, and/or ballistic missile threats
5. Protect system and capabilities in the OE.
6. Battalion XO coordinates Battalion sustainment activities.

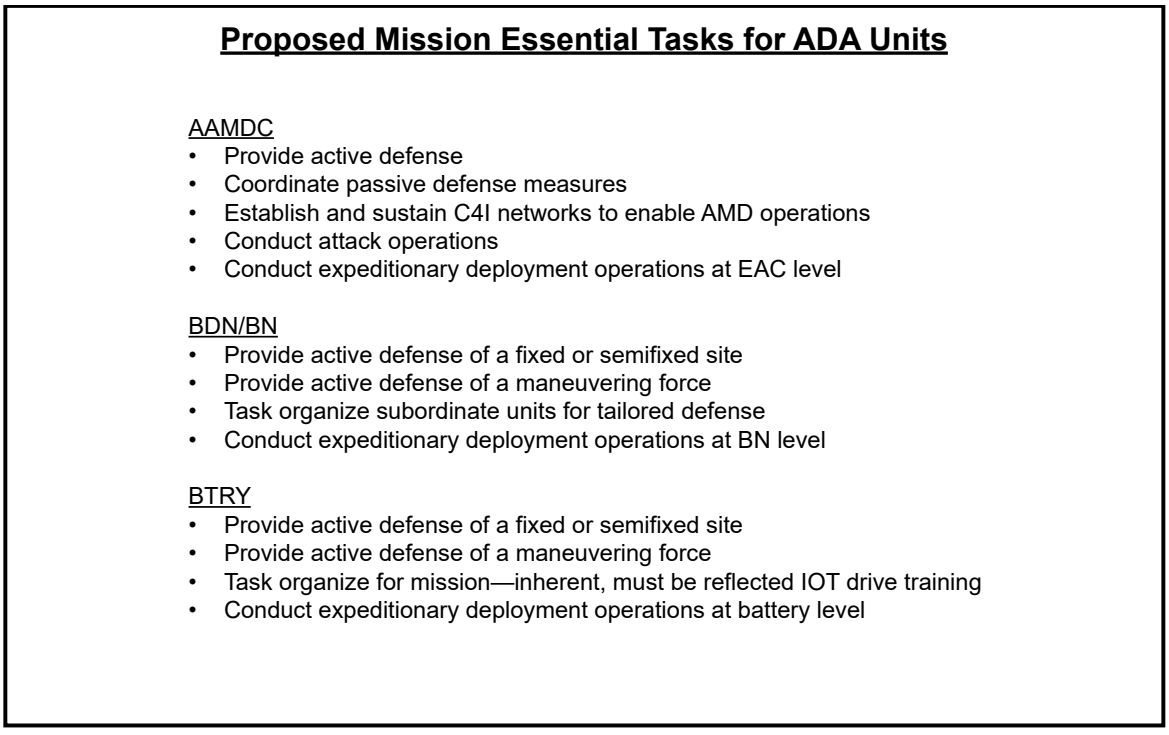
(Figure adapted by author from Training and Evaluation Outlines on the Central Army Registry)

Figure 3. Comparison of Core ADA METL Tasks at Echelon

to iterate training approaches in preparation for the eventual convergence of capabilities.

Army doctrine uses mission essential task lists (METL) to focus training and allow commanders to accept risk in some tasks. The move away from commander-developed METL toward Department of the Army-directed METL allowed standardization across like-units and enabled predictable expectations on what any given unit was trained to do. For ADA units, this standardization has come at the expense of clarity. With only two METL tasks (one of which covers deployment activities), ADA commanders do not have the ability to accept risk on specific tasks since every task described in the supporting training and evaluation outlines is a critical task that must be trained to achieve a "T" in that task. By comparison, an infantry battalion has six METL tasks (see figure 2, page 77). For a Patriot battalion, the single air-defense-related task (Conduct Air and Missile Defense Operations) lists six subtasks, two of which are related to the battalion executive officer and one of which is arguably the responsibility of a brigade or AAMDC commander. Subtask number four covers most of what a Patriot battalion does, but this task does not inform a training strategy and is sufficiently vague to introduce wide interpretations by different commanders (see figure 3).

While the present mission essential tasks may not provide full clarity, the Combined Arms Training Strategy (CATS) should in theory assist commanders in building workable training plans. Using this approach, ADA units building readiness tend to focus almost exclusively on gunnery and mission-specific culminating training events or mission rehearsal exercises. Assuming a unit also trains on its deployment METL task, a



(Figure by author)

Figure 4. Proposed ADA METLs to Support LSCO

Patriot battalion can achieve T1 (trained) following this approach. Recent experiences at Roving Sands 22 demonstrate that neither the current CATS tables nor gunnery tables incorporate every task required to support maneuver forces. As a result, Patriot battalions may achieve T1, but this does not mean they are trained to support a LSCO fight. This gap creates considerable challenges for commanders trying to accurately describe their readiness and for supported maneuver commanders trying to understand what kind of operations a specific ADA unit can support. ADA operations in a multidomain battlefield are too complex to encapsulate in a single METL task. As a branch, we recognize the difference between conducting fixed site defense and defending maneuver units. Units conducting sustained fixed site defense often execute operational readiness evaluations to validate site crews' ability to provide enduring readiness in a combat zone. The use of operational readiness evaluations is not as easily applied (and may not be relevant) to a unit establishing tactical sites for a short period of time before jumping again to support maneuver commanders. Just as an infantry battalion has multiple tasks to cover the range of missions, a METL that differentiates between these missions enables commanders to accept risk and focus on upcoming missions. A unit preparing to deploy to the U.S. Central Command area of responsibility can accept some level of risk on its ability to support a maneuver force, whereas a unit entering a prepare-to-deploy mission must be prepared for a wider range of operations. Figure 4 details a proposed ADA battalion METL that outlines tasks that specifically address supporting maneuver. This approach would allow commanders to make risk decisions on training programs.

Aside from LSCO requirements, the movement toward an IBCS-enabled force could also drive a different approach to training. Given the inherent flexibility in the task organization for specific missions, the standardized fire unit is no longer a given and may not even be desirable. Unit status reporting (USR) must accurately communicate training and readiness levels, which are in term informed by METL assessments. Should the Army choose to organize IBCS-enabled batteries by capabilities (e.g., sensor battery, effector battery, command and control battery) instead of a standard fire unit design, we will have to become masters of building task-organized battery teams for tailored missions. This will

A Patriot Advanced Capability-3 Cost Reduction Initiative missile is launched during the recent successful Integrated Battle Command System flight test 15 July 2021 at White Sands Missile Range, New Mexico. (Photo by Darrell Ames, U.S. Army)

also make the battalion level the first meaningful measurement of readiness from a USR perspective since the battalion commander would be the commander able to task organize subordinates into combat capable battery teams tailored for the assigned mission. This is not necessarily a change from a USR perspective, since the USR communicates readiness of the "AA" unit identification code (brigade headquarters, battalion, or THAAD battery) to the Army, joint staff, and combatant commanders. It does, however, change how battalion commanders must assess their subordinate units' readiness. Battalions will not only have to measure the readiness of the batteries as organized for USR purposes (i.e., by unit identification code), they will also have to measure the readiness of task-organized battery teams for specific missions to effectively describe a meaningful combat capability. This would also drive what joint force commanders request when asking for forces; instead of requesting a certain number of ADA fire units, they will likely continue to request battalions since the specific capability must be task organized at the battalion level to suit the mission. This will remain a challenge for the joint force during the decade the Army transitions from Patriot to IBCS-enabled units. Although IBCS gives the branch the opportunity to solve tactical problems with smaller organizations, the battalion will likely remain the "coin of the realm" when requesting AMD forces.

Current Patriot Battery Gunnery Tables	Proposed Gunnery Table Progression
Table I (Basic System Skills)	• Individual tasks
Table II (Ready-For-Action Drills)	• Individual tasks common to all
Table III (Basic Air Battle Management/Missile Reload)	• System specific individual tasks (e.g., launcher or radar)
Table IV (Basic Gunnery Certification)	• Crew and team tasks
Table V (Air Battle Management/Missile Reload)	• Crew drills on major end items
Table VI (Prepare for Movement and Emplacement)	• Air battle management
Table VII Commander's Assessment (Precertification to Table VIII)	• Reload
Table VIII (Intermediate-Level Gunnery Certification)	• Conduct equipment masking
Table IX (Alert State Assumption/Ready for Action Drill)	• Collective tasks (battery)
Table XI Commander's Assessment (Precertification to Table XII)	• Prepare task-organized battery team for movement and emplacement
Table XII (Advanced-Level Gunnery Certification)	• Conduct air battle
	• Conduct emissions/signals masking

(Current Patriot Battery Gunnery Tables [*left side*] adapted from Training Circular 3-01.86, *Patriot Gunnery Program*. Proposed Gunnery Table Progression [*right side*] developed by author)

Figure 5. Gunnery Table Progression

With regard to training Patriot and IBCS-enabled units to support LSCO, the current Patriot gunnery framework provides a starting point and, with modifications, can continue to provide the foundational readiness required to accomplish assigned missions. This will require a more explicit focus on individual, team/crew, and collective tasks. One of the author's persistent observations as a battalion and brigade commander is that nearly all battery-level leaders and most field grade officers do not think of training in terms of individual and collective tasks; they think of ADA training almost exclusively in terms of gunnery tables. Individual training is often viewed as separate from ADA training, covering common soldier tasks or mandatory training. This drives a centralization of training at the battery level since the first measurable readiness objective is the battery Table VIII. This mindset will not enable the flexibility needed for an IBCS-enabled force, no matter how the Army decides to organize these battalions. Therefore, it is helpful to reframe the gunnery tables as a progression of individual to collective tasks, with particular emphasis on certifying crews on major end items separate from a collective battery-certification event. An IBCS-enabled battalion with batteries organized by equipment type will absolutely demand this approach since the battery collective training event will not describe an employable and discrete combat capability from the perspective of the joint force employing these capabilities. Should the Army retain the fire unit model, this progression model will allow units to realize the flexibility of IBCS by allowing fully certified elements (e.g., launchers or radars) to plug into a task-organized unit. The modified gunnery tables would first address individual tasks, then crew and team tasks, and culminate in collective tasks (see figure 5). The battalion would also need to be able to validate that a task-organized battery is prepared to execute their mission, prompting the need for a battalion-driven collective training event.

This also leads to a critical analysis of the current advanced gunnery tables, which in theory should inform commander's assessments of T levels in assigned METL tasks. Presently, the advanced tables are almost entirely divorced from measuring readiness as reported in USR. While many leaders believe in the merit in conducting Table XII, we have not been able to describe a measurable readiness impact aside from more proficient crews. In other words, we agree we should do it, but we can't quantify what we get from it. We also lack a dedicated table for units fighting in an autonomous mode. Given the demonstrated capabilities to contest the electromagnetic spectrum presented by our most challenging strategic competitors, we must assume that units will fight in a communications-denied environment, which will prevent them from communicating with ADAFCOs. Finally, the advanced tables could be used to more explicitly describe how to achieve "T" in the METL task. This assessment tends to be more qualitative in practice, and while recent efforts to create "Objective T" proved problematic, a more quantifiable assessment criteria based on training can greatly assist commanders assessing readiness.

Given the anticipated electromagnetic-contested environment, unit training will need include operating under electronic attack. It will also need to enable the ability to build flexible crews to support likely task organization options inherent in IBCS enabled units. In addition to air battle training, units will need to be

proficient at how to support a maneuver force in the attack or defense. Another critical task is to enhance maintenance training to account for the flexibility of IBCS that may change current "fix or fight" criteria, given the anticipated geographic dispersion from battalion-level systems maintainers in a LSCO fight.

with a contested communications environment, disaggregating command posts may also require that we disaggregate functions when reliable communications are infeasible. Ongoing development of the IBCS-fire control command posts will certainly inform the ADA branch's answer to this question. The ultimate solution

"It is hardly controversial to suggest that tent-based command posts are ill-suited for LSCO."

Commanders will execute all this while simultaneously building depth in their crews. Given the tremendous opportunity costs of the current Table XII model, the branch must carefully develop a gunnery structure that does not detract from gaining proficiency on what are sure to become fundamental requirements in the operational environment.

Equipping ADA units for LSCO. The future battlefield envisioned by Army leaders drives some equipping considerations beyond the core combat systems undergoing development, testing, and eventual fielding. The ability of enemy forces to detect U.S. systems through signals intelligence, geospatial intelligence, measurement and signature intelligence, and imagery intelligence is already driving Army leaders to reconsider command posts, networks, and camouflage. This section will briefly discuss equipping considerations beyond the major end items associated with IBCS, M-SHORAD, and Indirect Fire Protection Capability (IFPC).

It is hardly controversial to suggest that tent-based command posts are ill-suited for LSCO. In 2022 FORSCOM convened a command post summit with all corps, division, and direct reporting unit commanders, and the unanimous consensus was that command posts must be mobile, masked, and distributed. While discussion of command post modernization tends to focus on the physical structures, the electronic communications infrastructure supporting the command post drives significant timelines associated with emplacement and movement. Units must have the ability to emplace and displace networks quickly and without extensive infrastructure configurations. When combined must ensure the entire staff is accounted for and where they should optimally reside on the battlefield. A disaggregated command post structure must remain sustainable, which necessarily requires a comprehensive organizational assessment. Roving Sands 22 demonstrated the numerous challenges an ADA brigade headquarters faces when employing a tactical command post.

ADA units must also operate on the same mission command systems used by maneuver units. During Roving Sands 22, the 11th ADA Brigade received Command Post Computing Environment (CPCE) to integrate with the 1st Armored Division, which was acting as III Armored Corps. Since CPCE has limited compatibility with the legacy Command Post of the Future systems included in our organic mission command system packages, CPCE was the only way the unit could share mission command data with the supported maneuver unit. The subordinate ADA battalions did not receive CPCE, which limited their ability to communicate with the ADA brigade headquarters. While FORSCOM is advocating for accelerated CPCE fielding for 32nd AAMDC units, an enterprise-level solution is required when those units deploy to support ADA brigade headquarters assigned to European Command and Indo-Pacific Command.

The anticipated operational environment also requires a reassessment of camouflage systems. At some point in the past twenty years, these items disappeared from modified tables of organization and equipment (MTO&E, documents that authorize units' staffing and equipment). While the authorizations for camouflage systems remain on common tables of allowance

(documents that allow items not on an MTO&E) and can therefore be procured, this does not allow the Army to assess supply (S-level) readiness. Additionally, the removal of these systems from the MTO&E also reduced unit organic lift requirements, leading to a reduction in tactical vehicles. It remains to be seen whether a Patriot battalion has the capability to transport all the required camouflage systems, assuming they have them, while supporting maneuver forces. Returning camouflage to the unit MTO&E will allow commands to measure S-level readiness impacts, as well as forcing a reassessment of lift requirements.

Conclusion

As many senior branch leaders have observed in the past few years, there has arguably never been a better time to be an air defender. This is certainly gratifying for those leaders who witnessed the divesture of divisional SHORAD during transformation. The Army fully recognizes the importance of its capabilities in the emerging operational environment. The evolving C-UAS fight has focused the attention of maneuver commanders, and those with recent operational experience in Iraq and Europe have become vocal supporters of the need to address these challenges comprehensively. This trend will certainly increase as MCTP exercises and other training opportunities evolve to ensure Army forces are ready to meet the challenges ahead of us.

The fielding and integration of M-SHORAD battalions is a necessary step but not sufficient to ensure Army maneuver forces can fight and win on a multidomain battlefield. As the branch proved in Operation Iraqi Freedom, nearly all ADA capabilities have a critical role to play in supporting LSCO. This requires the branch to take a holistic view of how it should support these fights. The Army and the joint force have changed significantly since 2003, and the air defense concepts optimized for earlier eras and older Army operating concepts will undoubtedly need adjustment to meet new challenges. These are significant tasks, which include shaping the practical application of joint doctrine to ensure Army ADA forces can have the necessary effects, an enterprise-wide look at training and exercises to reintroduce the entire ADA portfolio of capabilities to the maneuver force, and fundamental unit design activities to ensure that future capabilities can be employed to maximum combat effectiveness.

The branch will execute these tasks while sustaining global operations and continuing to build ready forces for no-notice deployments. Additionally, the branch will begin modernizing Patriot units once IBCS completes testing and achieves initial operating capability. The Regionally Aligned Readiness and Modernization Model will allow FORSCOM ADA units to execute this transformation during the eight-month modernization window, followed by a collective training period and then a mission phase. This will require units to rapidly modernize the materiel as well as the organization and training, which suggests the need to leverage as much existing knowledge as possible in our training approaches while making the required changes to maximize the effectiveness of IBCS-enabled units. Put simply, the branch must reinvent these units quickly and immediately prepare them for deployment.

Experienced leaders will likely disagree on the best approach to address the specific challenges associated with providing comprehensive air defense to maneuver forces. While the disagreements will not be as fierce as the combat we prepare for, there is certain to be strong opinions and passionate debate on the solutions. This debate is critical to the branch's learning campaign since the Army will undoubtedly iterate on these solutions as we determine what works best. Just as Shakespeare's version of King Henry V exhorted his army to "Hold hard the breath and bend up every spirit to his full height," we must enter this debate energetically, and every air defender should be excited to contribute to this effort.[10] ■

Notes

1. William Shakespeare, *Henry V*, ed. Barbara A. Mowat and Paul Werstine (New York: Simon & Schuster, 2020), 225.

2. Ibid., 325.

3. The Integrated Air and Missile Defense Battle Command System (IBCS) will replace the Army Patriot's current command and control system and in time will control most U.S. Army air defense artillery systems. IBCS enables new sensor-to-shooter kill chains through a self-healing network that provides increased flexibility not available to Army commanders.

4. This statement is the author's summary of the broader lessons described throughout Army Doctrine Publication 6-0, *Mission Command: Command and Control of Army Forces*

(Washington, DC: U.S. Government Publishing Office [GPO], 2019). This document defines the elements of command as authority, responsibility, decision-making, and leadership.

5. Field Manual 3-01, *U.S. Army Air and Missile Defense Operations* (Washington, DC: U.S. GPO, 2020), chap. 4.

6. For a detailed breakdown of the Department of Defense categories of unmanned aircraft systems, see ibid., table 3-1.

7. Friedrich von Steuben, *Regulations for the Order and Discipline of the Troops of the United States: Part I* (Philadelphia: Styner and Cist, 1779), 129, accessed 11 January 2023, https://www.loc.gov/item/05030726/.

8. The National Capital Region is defended by ground-based air defense units as part of Operation Noble Eagle. The authority to engage targets is centralized in a single command center under strict rules of engagement to protect civil aviation.

9. Comment extrapolated from multiple after action reviews and assistance visit trip reports for Operation Inherent Resolve and Ukraine support missions.

10. Shakespeare, *Henry V*, 147.

Glossary

AADP	area air defense plan
AAMDC	Army Air and Missile Defense Command
ADA	air defense artillery
ADAM	air defense airspace management
ADAFCO	air defense artillery fire control officer
AMD	air and missile defense
CATS	Combined Arms Training Strategy
CFACC	combined forces air component commander
CFLCC	coalition forces land component commander
COMREL	command relations
CPCE	Command Post Computing Environment
CTC	combat training center
C-sUAS	counter-small unmanned aircraft system
C-UAS	counter-unmanned aircraft system
DAL	defended asset list
FORSCOM	Forces Command
IBCS	Integrated Air and Missile Defense Battle Command System
IFPC	indirect fire protection capability
LSCO	large-scale combat operations
MCTP	Mission Command Training Program
METL	mission essential task list
M-SHORAD	maneuver-short range air defense
MTO&E	modified table of organization and equipment
OC/T	observer coach/trainer
OPCON	operational control
G-2	intelligence officer (division level)
S-2	intelligence officer (brigade level and below)
G-3	operations officer (division level)
S-3	operations officer (brigade level and below)
G-4	logistics officer (division level)
S-4	logistics officer (brigade level and below)
SHORAD	short range air defense
TACON	tactical control
THAAD	Terminal High Altitude Area Defense
TRADOC	Training and Doctrine Command
UAS	unmanned aircraft system
USR	unit status reporting
WfF	warfighting functions

Maj. Amy Thrasher, 18th Military Police (MP) Brigade behavioral health officer, leads yoga for physical training with soldiers from the 194th MP Company April 2021 at Camp Aachen, Germany. Yoga practice has documented benefits to physical and emotional health. It was one of the brigade resiliency team's most requested events. (Photo by Spc. Benjamin Purcey, 18th MP Brigade Public Affairs Office)

Collaboration between Leadership and Behavioral Health

How One U.S. Army Brigade Created a Novel Approach to Suicide Prevention

Col. Timothy MacDonald, U.S. Army
Maj. Amy Thrasher, PsyD, U.S. Army*

Multiple stressors tax Army units routinely. For units stationed overseas, those stressors include frequent short-notice deployments and numerous multinational training exercises, and they have been exacerbated by the COVID-19 pandemic. And many of these stressors are not unique to overseas units. Organizations based in the continental United States also face multiple challenges in operational tempo, resource management, and supply-demand issues. These factors demanded an innovative approach, particularly regarding behavioral health, to adhere to the "Army People Strategy." Through command-embedded behavioral health collaboration, the 18th Military Police (MP) Brigade developed and implemented a novel strategy that prioritized soldier well-being, enhanced suicide prevention programming, and achieved a positive command climate. These successes provide early evidence of an approach that could be scaled or replicated. This approach included the data-driven deployment of an internally sourced resiliency team. Similar approaches are warranted, given more recent societal trends and their deleterious impact on unit readiness.

Col. Timothy J. MacDonald, U.S. Army, is the Chief of Staff of the Army Military Fellow at the Council on Foreign Relations in New York City. He holds a bachelor's degree in sociology from the State University of New York at Cortland, a master's degree in business and organizational security management from Webster University, and a master's degree in national security strategy from the National War College. During his career, he served with the 4th Infantry Division, the 25th Infantry Division, and the 10th Mountain Division, and he commanded the 18th Military Police Brigade in Vilseck, Germany. With multiple deployments to Iraq and Afghanistan, MacDonald most recently served as the director of operations for Combined Joint Task Force-Horn of Africa.

Maj. Amy Thrasher, U.S. Army Medical Service Corps, is a fellow in clinical health psychology at Tripler Army Medical Center, Honolulu. She holds a BA in English and sociology from Augustana College, an MA in counseling from Seton Hall University, and a doctorate in psychology from Adler University. She completed her clinical psychology internship program at Walter Reed National Military Medical Center. She served as the chief of inpatient psychology and deputy chief of the Embedded Behavioral Health Clinic at Womack Army Medical Center, Fort Bragg, North Carolina. Thrasher deployed to Iraq as the behavioral health officer in charge in the western region in 2018. She also served as the brigade embedded behavioral health officer for 18th Military Police Brigade in Vilseck, Germany, from 2019 to 2022. **Thrasher is the primary author of this article.*

Behavioral Health of Soldiers Today: A Leader's Perspective

Suicidal thoughts, behaviors, and events are not unique to the uniformed services. Many in our society, especially teens and young adults, struggle with mental health issues that sometimes lead them to believe the only way out is through self-harm. In October 2021, the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association conjointly declared a national state of emergency regarding youth mental health.[1] According to the National Alliance on Mental Illness, "Suicide is the second-leading cause of death among people age 15 to 24 in the U.S. Nearly 20% of high school students report serious thoughts of suicide and 9% have tried to take their lives."[2] First-time service members fall within this demographic, making it critical for the Armed Services to have awareness of this problem and develop integrated prevention plans. Suicide-related events tragically rip military units apart and can have a ripple effect that extends to future service members and their propensity to serve.

Suicide prevention in the U.S. Army has traditionally involved three major components, captured in the Ask, Care, and Escort Suicide Intervention (ACE-SI) training program.[3] ACE-SI includes one-and-one-half hours of standardized training that provides soldiers with the awareness, knowledge, and skills necessary to intervene with those at risk for suicide. The purpose of ACE-SI is to help soldiers and junior leaders become more aware of steps they can take to prevent suicides and to build confidence in their ability to act in such situations. ACE-SI encourages soldiers to directly

and honestly question any battle buddy who exhibits suicidal behavior. The battle buddy asks a fellow soldier whether they are suicidal (e.g., "Are you thinking about hurting or killing yourself?"), then provides basic care for the soldier (e.g., "I am here for you. I care about you. I'm going to help you."), and finally escorts the soldier to the source of professional help (e.g., to a leader, medical clinic, chaplain, etc.). This training helps soldiers reduce their fear and discomfort around suicide.

Background: Brigade Embedded Behavioral Health

In 2012, following years of extensive validation, the Department of the Army directed replication of the EBH model of health-care delivery across all deployable units.[4] The EBH transition provided a single point of entry in the behavioral health system for soldiers and leaders. Doctrinally, embedded behavioral health refers to the system of health-care delivery in which units are assigned to specific clinics and certain providers. This allows for continuity between leadership and behavioral health staff. The model also includes the creation of an internal embedded brigade behavioral health team. Structurally, the behavioral health team falls under the brigade surgeon cell and is composed of two behavioral health officers (one psychologist, one social worker) and two behavioral health technicians (military occupational specialty 68X). Most Army psychologists and social workers receive two weeks of training on the role of embedded behavioral health during their initial entry training. Once embedded, the brigade EBH team—especially the BHO—becomes the de facto behavioral health subject-matter expert and primary point of contact for the brigade commander.

> It is important here to articulate the limited training in suicide prevention and behavioral health support that leaders have before assuming command.

Additionally, it helps govern appropriate actions to prevent suicides when confronted with actively suicidal battle buddies.

The ACE-SI program, while extremely valuable in training soldiers and leaders, is geared toward intervention rather than prevention. As the brigade commander and behavioral health officer for 18th MP Brigade, we recognized the limitations of ACE-SI and sought to go beyond policy. It is important here to articulate the limited training in suicide prevention and behavioral health support that leaders have before assuming command. Commanders, like all soldiers, are required to attend the ACE-SI training annually, but they receive no additional education beyond this standard. This is not to say that the Army does not prepare leaders to assume command at the brigade level. New brigade commanders receive over four weeks of precommand training that includes topics regarding the morale and welfare of soldiers and aspects of suicide prevention. But effective suicide prevention requires expertise beyond general training. For that, leadership and the behavioral health team of the 18th MP Brigade collaborated with multiple special staff sections to develop an effective suicide prevention program (see section titled "Developing a Novel Approach"). Because leaders rarely receive training and education in the role of embedded behavioral health (EBH), many do not know what the EBH team has to offer until their first office call with the brigade Behavioral Health Office (BHO). Therefore, the discussion of command-EBH integration must start with an explanation of EBH teams and functions.

The BHO has three functions: treatment, prevention/outreach, and consultation (see figure 1, page 88). Treatment includes conducting evaluations, providing therapy, documentation, attending meetings, and essentially all activities related to clinical care. It is often assumed that the treatment function is the entirety of the BHO's job. In practice, however, clinical care should be no more than 50 percent of the BHO's duties. It is important that commanders and leaders understand this and utilize their EBH teams for more than just treatment. BHOs divide the remainder of their time between the other functions.

The prevention/outreach function refers to all health-promotion activities implemented outside of the clinic. These activities include psychoeducation, skills training, and general wellness activities. The

(Figure by Maj. Amy Thrasher)

Figure 1. Brigade Embedded Behavioral Health Team Capabilities, 2020

concept is that if soldiers receive some training and knowledge in managing emotional sequelae early and efforts are made to promote wellness, they are less likely to develop behavioral health disorders in the future. These efforts, in turn, contribute to resilience and force readiness.

Consultation refers to the direct interactions between the BHO and leaders throughout the organization. It takes the form of formal meetings (e.g., high-risk trooper meetings, command and staff meetings, planning conferences, and community health promotion councils). It also takes the form of one-on-one touchpoints with various leaders, primarily the brigade commander. Together, the brigade commander and BHO work toward improving the health of the force.

Leveraging BHO Functions to Support the Army People Strategy

The Army has rightly emphasized the importance of its people and the necessity to build cohesive teams. This is the genesis of the "Army People Strategy" (APS). The APS outlines four critical enablers to achieving the Army's strategic outcomes. They are Talent Management, Quality of Life, Army Culture, and Resources and Authorities.[5] The brigade BHO is uniquely qualified and prepared to support the Quality of Life and Army Culture enablers within the brigade structure.

Quality of Life refers to "the full range of Army care, support, and enrichment programs, with an initial focus upon: Housing and barracks; Healthcare; Childcare; Spouse Employment; and Permanent Change of Station (PCS) moves."[6] BHOs leverage their role as consultants to assist the brigade commander in developing and implementing programs aimed at these efforts. Assistance ranges from simple consultation on a specific soldier (e.g., the commander has concerns about a high-risk soldier and asks the BHO for their input on safety plan and disposition) to formal programming (e.g., a suicide stand-down conducted conjointly with the brigade chaplain). Such outreach efforts are based on the needs of the audience and determined in consultation between the brigade leadership and BHO. A one-size-fits-all model of psychoeducation does not work. Here, the BHO and command team discuss trends across the brigade. The BHO then recommends interventions based on those trends. These are specific ways in which commands can leverage BHO support to enhance the lives of soldiers and support critical enabler #2 of the APS.

Likewise, the BHO supports APS critical enabler #3, Army Culture. Army Culture refers to the "foundational values, beliefs, and behaviors that drives an organization's social environment, and it plays a vital role in mission accomplishment."[7] At the organizational level,

culture manifests in the brigade's command climate. BHOs have unique talents and insight to help commanders establish and maintain a healthy command climate. If a commander is open to learning more about leadership style or communication, the BHO has the expertise to assist either in one-on-one coaching or in a leader professional development (LPD) group setting. For example, a battalion commander might request the BHO present an LPD on emotional intelligence to all senior NCOs and officers in the battalion. This example demonstrates how consultation with commanders can lead outreach activities aimed at promoting healthy culture within the unit.

> Rebuilding trust after a violation requires patience, insight, and skills inherent in the work of BHOs [behavioral health officers].

Another aspect of Army culture is building cohesive teams through trust. Trust is the BHO's essential trait. Behavioral health professionals are highly trained in ways to build trust and rapport. In the Army, that capability translates into building trust with leaders, community stakeholders, and soldiers. And the BHO can help leaders apply the same principles to their formations. This is again where consultation plays a key role.

In addition to standard measures of command climate such as the Defense Organizational Climate Survey, the embedded BHO has the capability to conduct unit needs assessments (UNA). The UNA provides detailed feedback on key indicators of climate and trust. Based on these results, the BHO works with leaders to address gaps in trust. The BHO also assists in preventing and addressing barriers to trust. The APS identifies symptoms of broken trust: "sexual assault, sexual harassment, suicide, discrimination, hazing/bullying, domestic violence, … poor housing, and reckless activities."[8] Rebuilding trust after a violation requires patience, insight, and skills inherent in the work of BHOs. Not only can BHOs help leaders repair or preserve trust, but they can also serve as surrogates for leaders in tenuous situations. If the BHO has the rapport with soldiers, they can assist in delivering the commander's message of trust and care. The Army's focus on "people first" aligns with the goals, purposes, and functions of the brigade EBH team, making the brigade BHO a primary point of contact for improving quality of life and Army culture in the brigade.

Developing a Novel Approach via a Five-Step Problem-Solving Process

Tying the threads of suicide prevention, command-behavioral health collaboration, and the APS together, the authors began a dialogue about innovative ways to support soldiers. We were determined to take a different approach to a problem all units face: suicide prevention. If you are an Army leader, you have been to a commander's conference at some level where suicide trends were discussed. One can recall the numerous times where PowerPoint slides were generated showing suicidal ideations, suicide attempts, and actual suicides by unit, over time, side by side. Each data point was shown in some color of red indicating its negative connotation. It was clear to most that if your unit had a high number of ideations, attempts, or actual suicides, that there was something wrong within that unit. This is sometimes the case. But experience suggests that this approach leads to commanders basing a suicide prevention program on the prevention of statistics, rather than the actual prevention of suicide. This approach can lead to underreporting and stigmatization within the formation and through the chain of command. The lack of attention to detail means potentially missing a soldier's needs. It also ignores critical information regarding suicidal ideations. Any suicide prevention program needs to consider the five Ws of suicide-related incidents.[9] This information can help guide prevention and outreach strategies. At the 18th MP Brigade, we were determined to turn this method on its head and adjust our approach. To ensure we met the needs of our soldiers, we applied a five-step problem-solving process. The steps are engage, track, identify, deploy, and assess.

Engage. Step one, engage, starts with *engaged leadership* that supports soldiers. Leaders must create an atmosphere of openness in which soldiers know they

Table. VA/DOD Clinical Practice Guidelines Definitions

Suicidal Self-Directed Violence	Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself with evidence, whether the implicit or explicit, of suicidal intent.
Suicide Attempt	A nonfatal self-inflicted potentially injurious behavior with any intent to die as a result of the behavior.
Suicide Completion	Death caused by self-inflicted injurious behavior with any intent to die as a result of the behavior.
Suicidal Ideation	Thoughts of engaging in suicide-related behavior. (Various degrees of frequency, intensity, and duration)

(Table from *VA/DOD Clinical Practice Guidelines for Assessment and Management of Patients at Risk for Suicide, Definitions*, 2013)

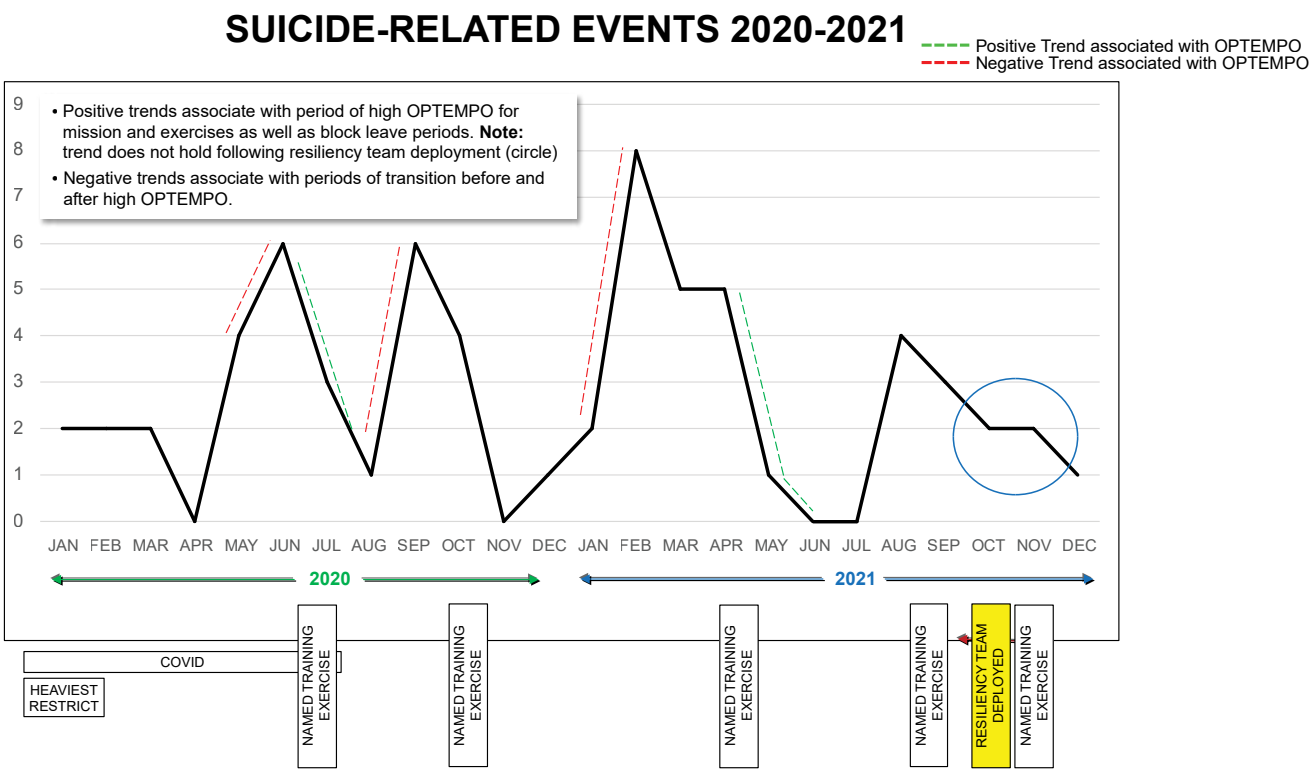
can express their thoughts and concerns. This starts at the top with the brigade command team but must flow down to lowest echelons of leadership. Within the 18th MP Brigade, engagement meant shifting the culture away from any stigma that suicide-related events might create. It started with leadership messaging to soldiers throughout the formation: If you are hurting, if you need help, if you feel helpless, reach out! Reach out to your battle buddy, reach out to your team leader, squad leader, your family, the chaplain, behavioral health, or anyone.

Leaders spoke of their own histories seeking assistance following significant life events. The intent was to destigmatize behavioral health issues and let soldiers know that it was okay to have these thoughts and to ask for help. The EBH team was also important in reducing stigma by spending time shoulder-to-shoulder with soldiers across the brigade. The goal was for soldiers to recognize the members of their EBH team so that they knew who to seek out if they needed support. Furthermore, the objective was to provide help to soldiers and then get them back in the fight. All these engagement activities provided buy-in from leaders and soldiers throughout the brigade.

Track. The second step, tracking, refers to data generation and analysis. Any approach to problem solving must be data driven to be useful. In the military, we constantly track information and assess what information means and how it can be harnessed to boost efficiency, effectiveness, and readiness. In terms of addressing suicide-related events, this meant analyzing the data we had at our fingertips. One of our early tasks was tracking all suicide-related behaviors across the brigade. Suicide-related behaviors include suicidal ideations, suicidal self-directed violence, suicide attempts, and suicide completions (see the table).[10] Brigade policy mandated that every suicide-related event required a detailed serious incident report describing the who, what, when, where, how, and—if known—why of the incident. This information, which included standard demographic and unit information, date of arrival to the unit, date of incident, whether it was the soldier's first duty station, when the incident occurred in terms of weekdays/weekends/holidays, and possible precipitating factors (defined as difficulties in finances, relationships, occupation, health, legal, family concerns, or unknown) was logged and maintained as an internal document.

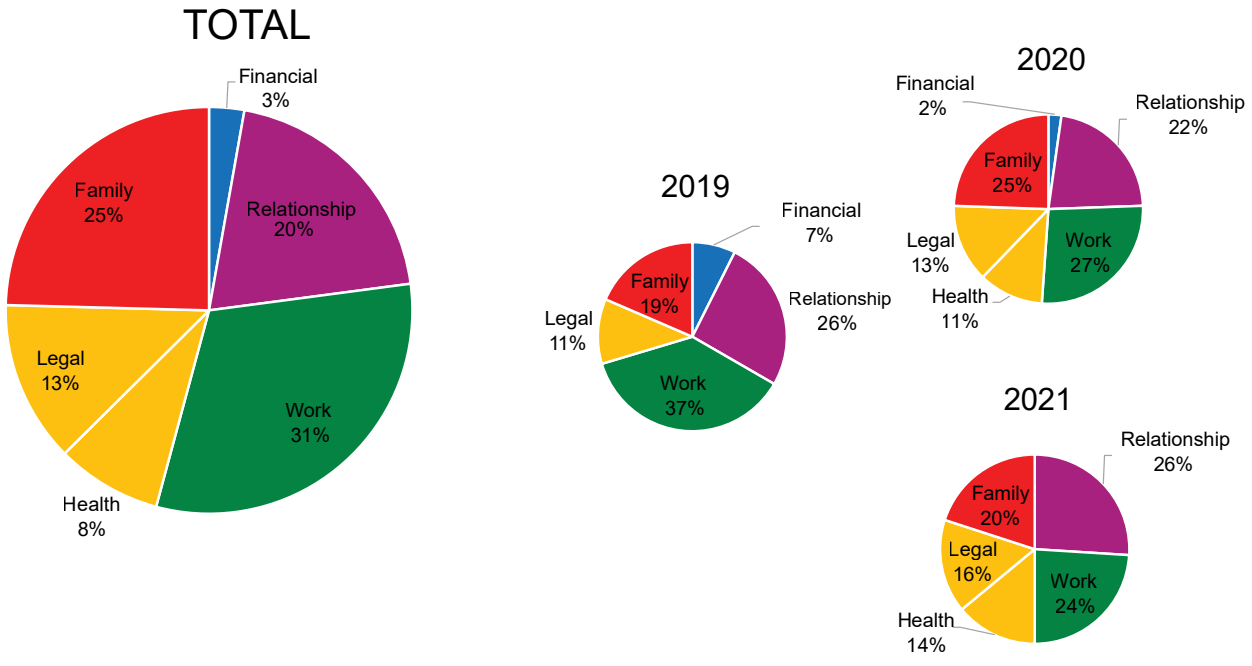
Using this yearslong log, we developed a series of tracking charts (see figures 2 and 3, page 91). These visual aids helped us identify informal trends in suicide-related behaviors and subsequently respond to those trends. From these charts, we determined two foci: time and precipitating factors. Regarding time, we observed increased suicidal ideations immediately before (defined as the two weeks prior to the start of) major training or field exercises. This trend held across three years of data. Regarding precipitating factors, analysis of the data identified several common precursors to suicide-related events: marital distress, family problems, and occupational issues. From that, we hypothesized that the increased stress and burden on individuals and families in the days preceding major training exercises was likely one of the underlying sources of increased suicidal ideations and other suicide-related events. With this hypothesis in mind, we proceeded to the next step: identify.

Identify. Leaders must identify assets and resources available and capable of meeting the demands of the presenting concern. Identification requires collaboration between commanders and unit, garrison, and community stakeholders. It is noteworthy that one's



(Figure by Maj. Amy Thrasher; this figure shows a decrease in incidents following deployment of resiliency team in 2021)

Figure 2. Sample Suicide-Related Behavior Tracking Chart (Incidents over Time)



(Figure by Maj. Amy Thrasher; this figure shows a breakdown of precipitating factors to suicide-related behaviors, 2019–2021)

Figure 3. Sample Suicide-Related Events Tracking Chart

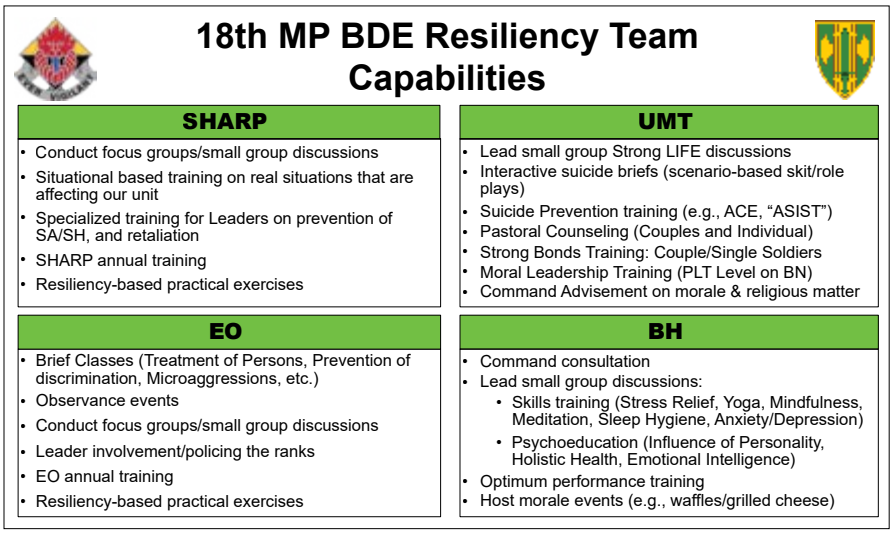
(Figure by Maj. Amy Thrasher)

Figure 4. Composition of the 18th Military Police Brigade Resiliency Team

ability to identify these resources is positively correlated to the level of engagement conducted in step one. The more engaged the leader, the more likely that leader will be able to recognize what assets are available and how those assets can support the mission. As Sergeant Major of the Army Michael Grinston recently noted, "Maybe [Soldiers] seek behavioral health, maybe you can talk to a chaplain … I think when we use all the resources that we have, I think we're all going to be in a better mental state. We can't just use only one resource."[11] Likewise for us in the 18th MP Brigade, it was clear that resiliency did not reside with behavioral health alone. Many of the trends gleaned from data analysis indicated that soldier behavioral health issues stemmed from a variety of precipitants, as previously noted. This analysis necessitated a holistic approach, where specific concerns were addressed with the appropriate expert. The solution was the creation of a brigade resiliency team, dedicated to suicide prevention and soldier wellness. Based on the data and feedback from soldiers and leaders, we identified five key resources: the behavioral health team, the unit ministry team, the soldier and family readiness assistant, the military equal opportunity advisor, and the Sexual Harassment/Assault Response and Prevention program representative (see figure 4). The purpose of the newly formed resiliency team was to conduct resiliency-focused battlefield circulation in which these subject-matter experts deployed to units in the days immediately preceding major missions. With the key resources identified, it was time to deploy them.

Deploy. Deployment, step 4, is the application of resources to the area of concern. This is the inflection point, where leaders can promote growth. For the brigade resiliency team, this was their battlefield circulation. Circulation consisted of formal programming and informal outreach, tailored to the specific needs of the unit, delivered in a timely manner (e.g., hosting a resiliency day in the two-to-four weeks prior to a long field cycle). For example, as one company prepared for a KFOR (Kosovo) rotation, the team traveled to that unit and provided unit-specific training on health and wellness before they left. The goal was to provide additional support and education to soldiers in support of the mission.

In the weeks preceding scheduled circulation, company commanders, platoon leaders, and noncommissioned officers consulted with the resiliency team and selected the specific topics and activities they viewed as most beneficial to their soldiers (see figures 5 and 6, page 93). While visiting these units, resiliency team members also conducted informal circulation, during which they elicited feedback from soldiers. This was the team's chance at further engagement. All this information—formal data collection, feedback from commanders, and feedback from



18th MP BDE Resiliency Team Capabilities

SHARP	UMT
• Conduct focus groups/small group discussions • Situational based training on real situations that are affecting our unit • Specialized training for Leaders on prevention of SA/SH, and retaliation • SHARP annual training • Resiliency-based practical exercises	• Lead small group Strong LIFE discussions • Interactive suicide briefs (scenario-based skit/role plays) • Suicide Prevention training (e.g., ACE, "ASIST") • Pastoral Counseling (Couples and Individual) • Strong Bonds Training: Couple/Single Soldiers • Moral Leadership Training (PLT Level on BN) • Command Advisement on morale & religious matter
EO	**BH**

• Brief Classes (Treatment of Persons, Prevention of discrimination, Microaggressions, etc.)
• Observance events
• Conduct focus groups/small group discussions
• Leader involvement/policing the ranks
• EO annual training
• Resiliency-based practical exercises
	• Command consultation
	• Lead small group discussions:
	  • Skills training (Stress Relief, Yoga, Mindfulness, Meditation, Sleep Hygiene, Anxiety/Depression)
	  • Psychoeducation (Influence of Personality, Holistic Health, Emotional Intelligence)
	• Optimum performance training
	• Host morale events (e.g., waffles/grilled cheese)

(Figure by Maj. Amy Thrasher)

Figure 5. Resiliency Team Battlefield Circulation Menu of Options

soldiers—helped determine the best employment of resources to ensure we were, in fact, putting our people first.

Assess. Having deployed assets to address the problem, the next step is assessment. Just as we need to track data to identify resources, we also need to track data on effectiveness of the deployed program. How has implementation led to change? For the resiliency team, assessment included after action reviews following every outreach event; written memoranda for record from each section; and debriefs with company, battalion, and brigade command teams outlining areas of success and improvement as well as any recommendations from the team. Additionally, we used the ongoing suicide-related incidents tracking log to assess changes in the quantity and timing of incidents. We observed a decrease in suicidal ideations after deploying the resiliency team for the first time (figure 2). The assessment step is ongoing. Any feedback derived from the assessment process leads directly back through the five-step process, where leaders consider how to engage with soldiers, track and analyze data, and redeploy resources. As the resiliency team reassessed their process over time and integrated leader input, circulation activities became more refined and led to a better product.

Prior to implementing this approach within the 18th MP Brigade, on paper and per regulation, we had a healthy suicide prevention program. Our number of trained soldiers met the regulatory requirements. We had a behavioral health team in place. We trained our leaders appropriately and had a positive command climate. But it wasn't enough. Meeting the Army standard served as the foundation, but by going beyond policy, we provided our soldiers much needed access to additional resources and tools, resulting in improved coping skills and greater ability to tackle challenges. This, in turn, enhanced readiness rates both tangibly and intangibly across the formation. And, most importantly, while impossible to prove, it is our belief that this approach saved lives.

Commander's Request/Focus: Preparing Soldiers for upcoming deployment, team building

Schedule of events:

Time	Topic/Activity	Presenter
0630-0730	Yoga/PT	BHO
0730-0900	Personal hygiene/breakfast Resiliency team will host waffle breakfast for those interested	Resiliency team
0930-1000	SHARP pre-deployment brief	SARC
1000-1130	Conflict Styles Class and team exercise	BHO
1130-1300	Lunch	
1300-1400	"A Valuable Deployment" class/brief	Chaplain/SARC
1400-1430	Teamwork activity	MEO
1430-1530	Understanding micro-aggressions/ improving communication	MEO
1530-1600	Q & A with resiliency team	Resiliency team
1600-??	Outbrief/Feedback with Company CMD team	Resiliency team

(Figure by Maj. Amy Thrasher)

Figure 6. Sample Resiliency Team Program of Events

Conclusion

The outreach program outlined above follows the Department of Defense Instruction (DODI) 6400.09, *DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm*, translating guidance to the organizational level.[12] DODI 6400.09 states that leaders take actions to "foster command climates of dignity, respect, inclusion, and connectedness" while implementing data-informed, integrated prevention programs.[13] The point of emphasis is that leaders and subject-matter experts collaborated to develop a program that met the needs of soldiers while providing quality feedback for the command team. At the 18th MP Brigade, "people first" was a mantra long before it was an Army initiative. This program supports the APS critical enabler #2, Quality of Life, by providing tailored support at the right time and place. It also supports critical enabler #3, Army Culture, in that the leadership fostered a climate of openness and acceptance through destigmatization of help-seeking behavior. These initiatives helped build stronger, more resilient teams, and it was done through coordination between brigade leaders and embedded behavioral health. We hope this article serves as an example of how leaders and EBH teams can collaborate for the good of the formation. ■

Notes

1. "AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health," American Academy of Pediatrics, last updated 19 October 2021, accessed 12 January 2023, https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/.

2. Sandy Cohen, "Suicide Rate Highest among Teens and Young Adults," UCLA Health, 15 March 2022, accessed 12 January 2023, https://connect.uclahealth.org/2022/03/15/suicide-rate-highest-among-teens-and-young-adults/.

3. "Suicide Prevention Training," Army Suicide Prevention Program, last updated 28 June 2021, accessed 12 January 2023, https://www.armyg1.army.mil/hr/suicide/training.asp.

4. All Army Activities (ALARACT) Message 186/2012, "Army Implementation of Behavioral Health System of Care (BHSOC) Embedded Behavioral Health (EBH)," 13 July 2012.

5. Michael A. Grinston, James C. McConville, and Ryan D. McCarthy, "The Army People Strategy: Diversity, Equity, and Inclusion Annex" (Washington, DC: U.S. Department of Defense, 1 September 2020), 5, accessed 10 September 2020, https://www.army.mil/e2/downloads/rv7/the_army_people_strategy_2019_10_11_signed_final.pdf.

6. Ibid., 10.

7. Ibid., 11.

8. Ibid., 12.

9. The five Ws refers to the description of who, what, when, why, and where of any given situation or event.

10. The Assessment and Management of Risk for Suicide Working Group, *VA/DoD Clinical Practice Guideline for Assessment and Management of Patients at Risk for Suicide* (Washington, DC: Department of Veterans Affairs/Department of Defense, 2013), 13.

11. Haley Britzky, "Sgt. Maj. of the Army to Leaders: Stop Using Behavioral Health as a Universal Band-Aid for Problems," Task & Purpose, 17 October 2022, accessed 12 January 2023, https://taskandpurpose.com/news/army-behavioral-health-wellness-checks-grinston/.

12. Department of Defense Instruction 6400.09, *DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm* (Washington, DC: Office of the Undersecretary of Defense for Personnel and Readiness, 11 September 2020), accessed 12 January 2023, https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/640009p.pdf.

13. Ibid., 12.


DoD Instruction 6400.09

DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm

Department of Defense Instruction 6400.09, *DoD Policy on Integrated Primary Prevention of Self-Directed Harm and Prohibited Abuse or Harm*

This instruction established and integrates policies and responsibilities to mitigate self-directed harm and prohibited abusive or harmful acts using a career-cycle perspective to promote enduring force readiness.

To view DOD Instruction 6400.09, visit https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/640009p.pdf.

Napoleon (*sitting on the chair*) with his generals near Borodino. Vasily Vereshchagin, *Napoleon I on the Borodino Heights* [in Russian], 1897, oil on canvas. (Image courtesy of the State Historical Museum [Moscow] via Wikimedia Commons)

Coup d'œil and Cognition

How to Build Adaptive Tactical Experts

Trent J. Lythgoe, PhD

Students of warfare have long recognized the importance of *coup d'œil*—a commander's ability to make timely, effective decisions on the battlefield.[1] Although history records the achievements of successful commanders who possessed coup d'œil, it does not explain how coup d'œil works or how to develop it in leaders. Fortunately, recent advances in cognitive psychology and expert performance can provide the explanations that have eluded military historians.

This article advances a scientific understanding of coup d'œil—what it is, how it works, and how to develop it in Army leaders. It argues that coup d'œil is *adaptive tactical expertise*—the ability to apply warfighting knowledge flexibly and creatively to solve novel tactical problems. U.S. Army leaders can develop adaptive tactical expertise through deliberate practice, metacognition, and emotional intelligence.

Coup d'œil in Action

On 21 November 1806, Napoleon Bonaparte walked silently outside Brünn—a small village north of the Austrian imperial capital, Vienna.[2] Months of campaigning in central Europe had left his *Grande Armée* dangerously extended. An ordinary commander might have yielded to prudence and withdrawn. But Napoleon was no ordinary commander. Where others may have sensed danger, Napoleon sensed an opportunity. Throughout October and November, the Austrians and their Russian allies had been content to remain strategically defensive while denying Napoleon the decisive battle he needed to win the campaign. Rather than pursue them and further extend his forces, Napoleon decided to use his tenuous position to lure allies into attacking.

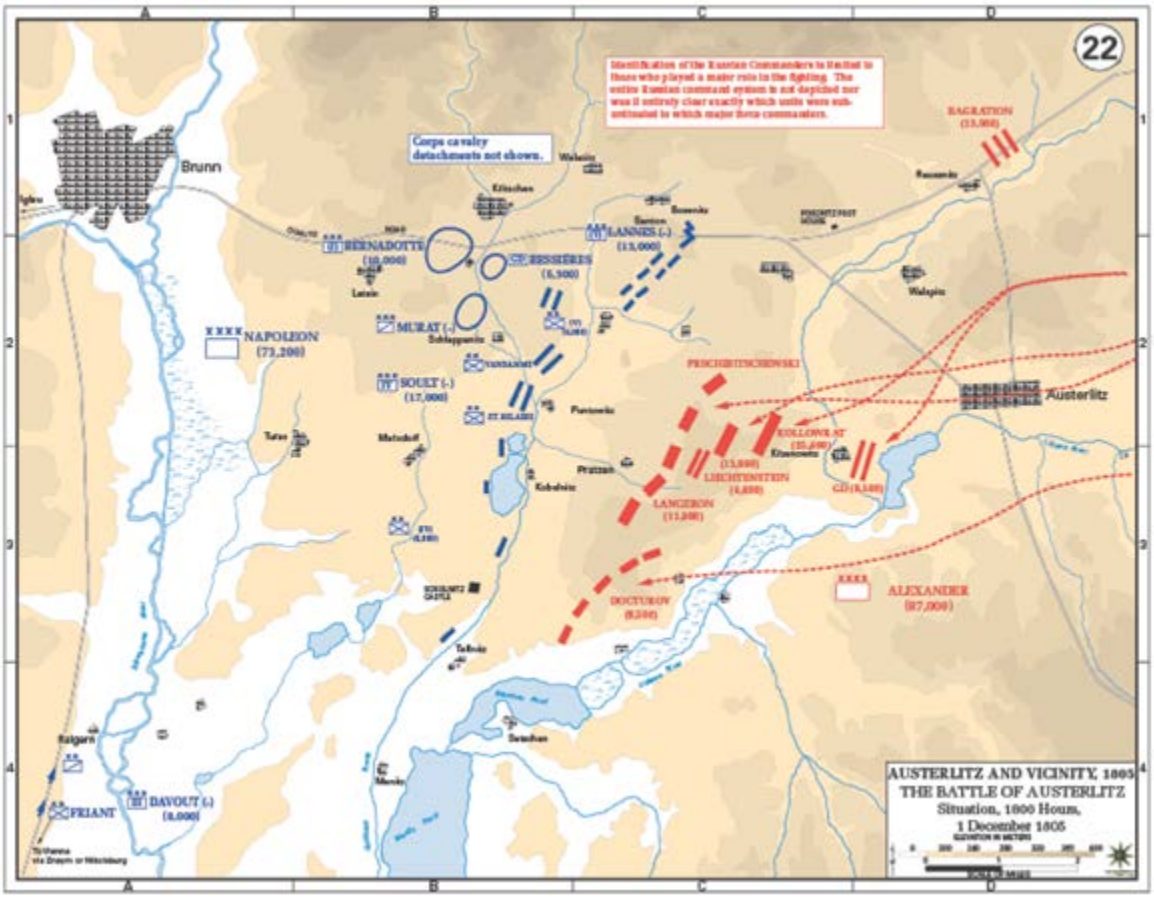
Trent J. Lythgoe is an assistant professor in the Department of Command and Leadership at the U.S. Army Command and General Staff College. Lythgoe earned his PhD in political science at the University of Kansas. His research interests include adaptive leadership, command and control, civil-military relations, and professional military norms.

For the last few weeks Napoleon had feigned even greater weakness than his extended position suggested.[3] Now, looking south toward Pratzen, Napoleon was confident the ruse had worked. The allies would attack. Concluding his silent terrain survey, Napoleon turned to his staff officers and said, "Gentlemen, examine this ground carefully, it is going to be a battlefield; you will have a part to play upon it."[4] His words were prescient. Upon that ground ten days hence, Napoleon won his greatest victory at the Battle of Austerlitz.

Having seduced his enemies to go on the strategic offensive, Napoleon set about laying a tactical trap.[5] Arraying his army from north to south, Napoleon would allow the allies to occupy the Pratzen Heights in the center while intentionally weakening his right (see figure 1, page 97).[6] These tactical moves would reinforce the perception of strategic weakness and entice the enemy to send his main attack against Napoleon's ostensibly weak right wing. Meanwhile, two French divisions would hide in low ground behind the Pratzen Heights. Once the attackers committed to his right, Napoleon would hold fast on the left, reinforce the right if needed, and counterattack what was sure to be his enemy's weakened center.

The battle unfolded much as Napoleon had envisioned. The allies took the field on 1 December, and their initial moves convinced Napoleon that their main effort would be attacking his right wing.[7] December 2 dawned with morning mist and campfire smoke enveloping the battlefield. As Napoleon had anticipated, the day began with enemy columns attacking his right around Tellnitz (see figure 2, page 98).[8] The weakened French line was pushed back and threatened to break. But Napoleon had expected this development. Weeks earlier he had ordered his most trusted corps commander, Marshal Davout, to march toward Austerlitz.[9] The previous evening (1 December), Napoleon had instructed Davout, who by then had marched to within striking distance of Austerlitz, to reinforce the army's right wing the next morning.[10] Just as the allies seized Tellnitz, Davout's corps appeared. Counterattacking from the march, Davout halted the enemy advance and stabilized the French line.[11]

Despite the intense fighting on his right, Napoleon was focused on the center. As expected, column after enemy column marched south.[12] The center was progressively weakening. Napoleon turned to Marshal Soult who would lead the decisive counterattack. "How long will it take you to move your divisions to the top of the Pratzen Heights?" Soult replied, "Less than



(Map courtesy of Department of History, U.S. Military Academy at West Point)

Figure 1. The Battle of Austerlitz, 1805—Situation at 1800 on 1 December

twenty minutes, Sire." "In that case," Napoleon said, "we will wait a further quarter of an hour."[13]

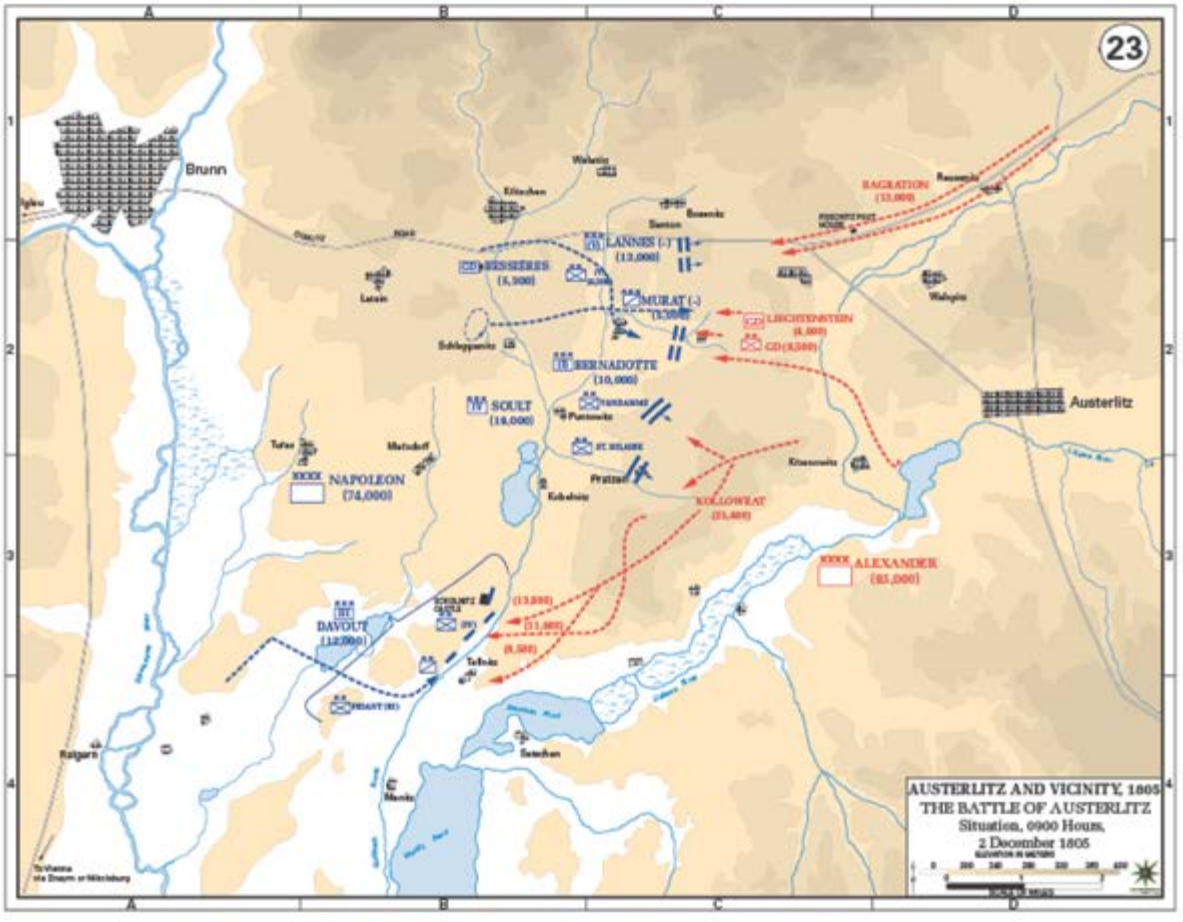
Napoleon delayed patiently until he was satisfied the enemy had fully committed to the right, then unleashed his counterattack.[14] Two divisions emerged from the smokey mist and charged up the Pratzen Heights. Allied commanders, stunned by the sudden strike in the center, frantically tried to reverse their columns. But Napoleon timed the attack perfectly. The allied columns were too far south to reinforce the crumbling middle. Napoleon was on his way to victory.

The Mystery

Austerlitz is the best example of Napoleon's coup d'œil—a French term that translates to "stroke of eye." In military studies, coup d'œil describes the ability to visualize the possibilities a combat situation offers.[15] Napoleon exhibited coup d'œil before and during Austerlitz; he visualized the battle ten days before it happened, lured his opponents into attacking to the south, and perfectly timed his counterattack in the center.

Military leaders and thinkers before and after Napoleon have tried to understand coup d'œil. Influential military theorists—Sun Tzu, Machiavelli, Baron de Jomini, and T. E. Lawrence, among others—analyze coup d'œil in some form.[16] The most influential of these analyses comes from Carl von Clausewitz who argues coup d'œil is an element of military genius—an "inward eye" that enables a commander to reach a "rapid and accurate decision" and quickly recognize "a truth that the mind would ordinarily miss or would perceive only after long study and reflection."[17]

Yet, these analyses of coup d'œil fall short. They describe the battlefield accomplishments of Napoleon and other skilled commanders. However, these descriptions tell us neither *how* they did it, nor critically, how to *develop* coup d'œil in today's military leaders. Fortunately, science offers a way forward. Insights from cognitive



(Map courtesy of Department of History, U.S. Military Academy at West Point)

Figure 2. The Battle of Austerlitz, 1805—Situation at 0900 on 2 December

psychology and the study of expert performance help us understand the scientific underpinnings of coup d'œil and illuminate ways for military leaders to develop it.[18]

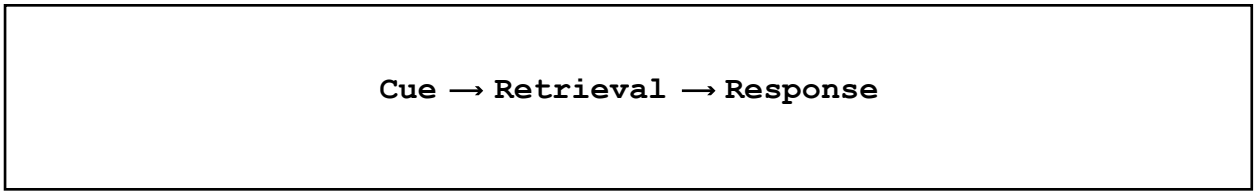
Coup d'œil as Adaptive Expertise

What theorists and historians call coup d'œil, modern science calls *expertise*—"the characteristics, skills, and knowledge that distinguish experts from novices."[19] Expertise is performance-based and domain specific. People are experts if they reliably outperform nonexperts in a domain. Chess grandmasters, for example, almost always win against recreational opponents.[20] As a starting point, then, we can think of coup d'œil as warfighting expertise. It describes commanders who routinely outperform their opponents in warfighting.

Furthermore, coup d'œil is a particular kind of expertise we shall call *adaptive tactical expertise*. *Tactical* expertise is different than operational or strategic expertise. Although descriptions of coup d'œil span all levels of war, we must treat tactical, operational, and strategic expertise seperately.[21] Tactical expertise describes the necessary skills to routinely win battles and engagements, not the skills necessary to win campaigns and wars.

Furthermore, coup d'œil is a type of *adaptive* expertise. Researchers recognize two types of expertise: routine and adaptive.[22] Routine experts can solve familiar problems easily because they have a deep knowledge of established procedures. However, routine experts may struggle to solve unfamiliar problems without proven solutions because of cognitive rigidity. Routine experts can become so efficient at applying known solutions that they are unwilling or unable to change how they think about problems.[23]

In contrast, *adaptive* experts are cognitively flexible and can adapt their expert knowledge to new situations.[24] This ability to adapt stems from three



(Figure by author)

Figure 3. A Simple Sense-Making and Decision-Making Model

characteristics that are unique to adaptive experts. First, adaptive experts understand the deep principles that underpin established solutions. They know how to apply routine solutions, but they also understand *why* the solutions work. Second, adaptive experts can apply known solutions flexibly. Deep knowledge enables them to adapt old solutions to new problems. For example, they can reorder or skip steps in a checklist because they understand the purpose of the steps and their ordering. Finally, adaptive experts are creative. When established solutions fail, adaptive experts can synthesize expert knowledge to invent new ones.[25]

Because every tactical problem has at least some novel elements, tactical experts must be adaptive. Thus, coup d'œil is *adaptive tactical expertise*. It describes commanders who have extensive domain knowledge that they can apply flexibly and creatively to solve novel problems. Adaptive tactical expertise allows commanders, in Clausewitz's words, to quickly recognize "a truth that the mind would ordinarily miss" to make "rapid and accurate decision[s]" on the battlefield.[26]

Having defined what adaptive tactical expertise is, it is important to understand what it is not.[27] Adaptive tactical expertise is not encyclopedic doctrinal or technical knowledge. The distinguishing characteristic of adaptive expertise is not what decision-makers know, but *how they apply it*. Additionally, adaptive tactical expertise is not the same as experience, reputation, or others' perceptions of knowledge and skill.[28] The true measure of expertise is *performance*. An Army leader may have many years of experience, senior rank, a deep knowledge of doctrine, and a reputation as an effective leader. However, if a leader cannot *perform* at a high level, that leader is not an adaptive tactical expert.

Understanding coup d'œil as adaptive tactical expertise gives us a scientific language for analyzing performance in battle. More importantly, it allows us to answer the question that Clausewitz and others did not: How does it work? How do commanders with coup d'œil do what they do? The answer is *expert thinking patterns*.[29] Adaptive tactical experts are skilled at assessing tactical situations and making effective decisions.

To illustrate how expert thinking patterns unlock adaptive expertise, consider the simple decision-making model shown in figure 3. A decision-maker notices cues (chunks of information) in the environment. These cues trigger the decision-maker to retrieve mental models to organize the cues. Mental models help the decision-maker understand what is happening and hypothesize what is likely to happen next. The decision-maker responds to the situation based on the most promising hypothesis.

Although we recognize tactical expertise by the responses (the decisions commanders make), it is the first two steps of the model that describe *how* they do it. Experts have effective responses because they have effective thinking patterns.[30] They pay attention to the *right* cues and retrieve *useful* mental models. In contrast, nonexperts' thinking patterns are less effective. They do not always know which cues are important, and as a result, fail to retrieve helpful mental models. Additionally, because nonexperts often lack experience, they may not have helpful mental models to retrieve in the first place.

An important finding in expertise research is that experts share similar thinking patterns.[31] The way experts *think about* problems—the cues they pay attention to and the mental models they retrieve—tend to be the same from one expert to the next. In contrast, nonexperts' thinking patterns vary widely. Thinking pattern similarities are the key to unlocking how to develop experts. If we can uncover how experts in a domain think, we can train nonexperts to think like domain experts.

Fortunately, the Army Research Institute has uncovered the expert thinking patterns in the tactical domain.[32] Researchers interviewed experienced Army tacticians to understand how they think about tactical

Col. Andrew O. Saslav (*center left*), commander of 1st Brigade Combat Team, 82nd Airborne Division, Fort Bragg, North Carolina, advises his staff 30 January 2019 during a command post exercise. (Photo by Sgt. Solomon Abanda, U.S. Army)

problems. The result was thinking patterns that reflect eight themes:

- Focus on Mission and Higher Intent
- Model a Thinking Enemy
- Consider Terrain Effects
- Use All Available Assets
- Consider Timing
- See the Big Picture
- Visualize the Battlefield
- Consider Contingencies

These eight adaptive tactical thinking themes are the patterns that drive expert tactical performance. The Army can use these themes as a framework for structuring deliberate practice and expert feedback that, as we will see in the next section, are critical components for developing expert tactical performance.

How to Develop Adaptive Tactical Expertise

How can we apply the insights discussed above to develop adaptive tactical expertise in Army leaders? Given the advantage coup d'œil offers a battlefield commander, it is unsurprising that students of warfare have puzzled over how to develop it in leaders. Several authors suggest that study and experience are the key ingredients.[33] Napoleon himself offers this prescription: "Commanders-in-chief are to be guided by their own experience or genius … generalship is acquired only by experience and the study of the campaigns of all great captains."[34] Army doctrine offers a similar recommendation:

> [Army] leaders train for various tactical situations, learn to recognize their important elements, and practice decision making under realistic conditions. They develop these abilities through years of professional military education, self-study, practical training, and operational experiences. These experiences sharpen the intuitive faculties required to solve tactical problems.[35]

That modern doctrine offers little more than Napoleon emphasizes both the enduring significance of coup d'œil and how little progress has been made in understanding its underlying principles and processes.

Soldiers with the 45th Infantry Brigade Combat Team, Oklahoma Army National Guard, fire weapons from a trench during a live-fire exercise at the National Training Center in Fort Irwin, California, 24 July 2021. (Photo by Pfc. Emily White, Oklahoma Army National Guard)

Although study, training, and experience surely contribute to coup d'œil, they are nevertheless insufficient. First, ordinary study and training do not produce expert performance.[36] For example, one can study and play chess or a musical instrument for decades without becoming a chess grandmaster or musical virtuoso. Likewise, Army leaders can study warfare and train for combat for years or decades without developing expertise. The reason is that ordinary study and training develops competence but moving from competent to expert performance requires a particular kind of study and training called *deliberate practice*.[37] This idea is discussed below.

A second reason study, training, and experience fall short is that the best domain-relevant experience—combat—is hard to come by. Large-scale wars are thankfully rare. But infrequent application makes it difficult for military commanders to develop coup d'œil through experience. Napoleon began gaining combat experience in 1793.[38] By the time he took the field at Austerlitz in 1805, he had been fighting continuously for over a decade. Today's Army leaders are unlikely to have the same opportunities to learn in battle.

Happily, science offers a way forward. Research suggests three tools the Army can use to build adaptive tactical expertise without relying on direct combat experience: deliberate practice, metacognition, and emotional intelligence.

Deliberate practice. The first tool for developing expertise is *deliberate practice*—an approach to study and training that allows practitioners to move beyond mere competence.[39] Deliberate practice is necessary because, as noted previously, ordinary practice and casual experience do not produce expert performance. It is true that, when faced with a novel task, individuals will make initial performance gains through ordinary practice and experience. However, once their performance is good enough to avoid obvious failures, they will plateau. Additional practice and experience will not improve

performance past this intermediate level. Moving beyond the plateau requires deliberate practice.

Deliberate practice describes the "domain-related activities necessary for improving performance."[40] There are five principles of deliberate practice.[41] First, it is *goal-oriented*—aimed at improving specific skills. Second, it is *repetitive* performance of activities that improve the selected skills. Third, deliberate practice is *focused* on performance improvement and requires deep concentration. Fourth, it requires *feedback* that often comes from an expert coach. However, as discussed in the next section, practitioners can develop the ability to evaluate their own performances. Fifth, deliberate practice requires *motivation to improve* because it is hard work. It takes dedication to repeatedly perform tasks one is not good at while receiving critical feedback.

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Importantly, deliberate practice can produce both routine and adaptive expertise. Because we are interested in the latter, it is necessary to practice under *adaptive conditions*.[42] Practicing under adaptive conditions aids practitioners in developing cognitive flexibility and avoiding cognitive rigidity.

There are four adaptive conditions.[43] First, the practitioner must frequently encounter *novel problems* that have no ready solution or that disconfirm prior knowledge. Second, the practitioner must engage in *dialogical interaction*—for example, debate and reciprocal teaching. Debating or teaching a concept requires the practitioner to use his or her understanding to persuade or inform others, and in the process, examine his or her own understanding. Together, novel problems and dialogical interaction produce *cognitive incongruity*—a sense that one's expertise is inadequate.

Once the practitioner becomes aware of shortcomings in his or her expertise, he or she must be motivated to resolve the inadequacies.[44] This motivation is the aim of the third and fourth adaptive conditions—to get the practitioner to commit to understanding. Getting people to commit to understanding is important because struggling to solve unfamiliar problems is hard work. Consequently, people will not always choose to do the necessary work even if they know their knowledge is inadequate.

The third adaptive condition is *freedom from urgent external needs or rewards*.[45] When people perform to obtain rewards, the reward—not deep understanding—becomes the primary goal. The final condition is *membership in a reference group that values understanding.* Being part of such a group encourages the practitioner to adopt group values and norms that enable deep comprehension.

Together, the four adaptive conditions force practitioners to repeatedly struggle with novel problems. These struggles help practitioners develop learning strategies.[46] Since adaptive experts must solve novel problems with no established solutions, it is critical they are able to rapidly map (determine the boundaries of) the problem space and develop a strategy to gain the necessary knowledge to solve the problem. In other words, adaptive experts must be *expert learners*. Deliberate practice under adaptive conditions produces domain-specific knowledge, but critically, it also develops the learning strategies necessary to adapt to ever-changing demands.

Metacognition. The second tool for building adaptive expertise is *metacognitive awareness and regulation*.[47] Metacognition is thinking about one's thinking.[48] It involves becoming aware of, regulating, and improving cognitive processes.[49] Metacognitive awareness contributes to adaptive expertise in two ways. First, it allows practitioners to leverage the strengths and mitigate the weaknesses of their intuitive and deliberate thinking processes. Second, it allows them to objectively evaluate their own performance, and in essence, become their own expert coach.

Metacognition enables adaptive experts to skillfully use a combination of what noted psychologist Daniel Kahneman calls System 1 (intuitive) and System 2 (deliberate) thinking.[50] System 1 is fast, intuitive, and nearly effortless, while System 2 is slow, deliberate, and effortful. Since our brain has limited processing capacity, we use System 1 for most decisions. System 1 uses simple rules (heuristics) for effortless decision-making. This approach works well enough most of the time, but it has some drawbacks. System 1 tries to use simple rules for complex problems and is prone to systematic errors or biases. System 2 can overcome some of these problems with deliberate processing.

Metacognition enables practitioners to sense when they can trust their System 1 intuition, when they need to use deliberate System 2 thinking, and when their thinking is prone to errors. With practice, experts can develop their System 1 thinking to respond automatically to familiar problems.[51] Critically, however, these automatic responses are only effective in environments with low-task volatility. Combat, however, has high-task volatility. Tactical decision-makers face a combination of familiar and unfamiliar problems. They must understand when they can (or cannot) make an intuitive decision.

Metacognitive skills also enable *self-regulation*—the process of reflecting on performance, setting goals for improvement, and monitoring progress.[52] Recall that deliberate practice requires performance goals and feedback. An expert coach is usually necessary to help the practitioner accomplish these tasks. However, as the practitioner develops metacognitive skills, he or she can monitor his or her own performance and plan deliberate practice based on self-assessment. Self-regulation, then, is the ability to be one's own expert coach.

Emotional intelligence. The third tool for developing adaptive expertise is *emotional intelligence*—the ability to recognize, understand, and manage emotions in oneself and others.[53] For the present discussion, we are interested in emotional self-awareness and self-regulation. These skills are important because emotions can enable effective decision-making or inhibit it. Emotionally intelligent leaders are aware of their own emotions and can regulate them with the aim of making the best possible decisions.

Emotions can affect decision-making in many ways, but the three most important for tactical decision-making are bias, depth of thought, and goal activation.[54] First, emotions can introduce *bias*. A prominent example is risk perception. Fear arising from a risky choice may cause risk aversion, or a decision-maker in a good (bad) mood may be risk acceptant (averse). Second, emotions affect *depth of thought*. For example, high-certainty emotions like anger and pride make decision-makers more likely to use System 1 processing, whereas low-certainty emotions like fear and surprise are more likely to stimulate System 2 processing.[55] Intense emotions can overwhelm thinking processes altogether—a phenomenon known as "emotional hijacking."[56] Finally, emotions can *activate goals*.[57] Anger, for example, is associated with a desire to fight, anxiety with a desire to reduce uncertainty, and sadness with a desire to change one's circumstances.

Although a common belief is that emotions always lead to poor decisions, the truth is that emotions are not inherently good or bad. From an evolutionary perspective, emotions are essential to survival.[58] They cause us to pay attention to important information, motivate us to seek pleasure and avoid pain, and trigger physiological responses to threats. Further, emotions can enable effective decision-making.[59] Fear, for example, helps us avoid high-risk choices. Emotions are tightly linked to intuitive (System 1) decision-making. Both emotion and intuition occur without deliberate thought.[60] Because emotions precede thinking, a decision-maker's intuition may manifest through *gut feeling* about a given choice. If the decision-maker is an expert, this gut feeling can be a reliable guide to action. For example, Hal Moore, noted for his exceptional command at the Battle of Ia Drang, said of decision-making, "If my head tells me one thing and my gut tells me something else, I always go with my gut."[61]

Although emotions can be beneficial to decision-making, they can also be detrimental. As noted above, emotions can bias a decision-maker, reduce depth of thought, or push a decision-maker toward an intuitive or deliberate decision when the opposite approach is best. An effective strategy to mitigate negative emotional effects is to recognize one's emotional reaction to a situation and delay deciding until the intensity of the emotion has lessened—usually a matter of minutes.[62] This strategy can be difficult to practice, however, because the evolutionary purpose of emotions is to motivate immediate action.

The above discussion makes clear why emotional intelligence is necessary for expert performance. Emotions can help or impede tactical decision-making. Thus, it is important that leaders enable the former and avoid the latter by recognizing their own emotions, managing emotional effects, and mobilizing emotions toward desired goals.[63]

Putting It Together

To understand how the three factors discussed above—deliberate practice under adaptive conditions, metacognition, and emotional intelligence—contribute to adaptive expertise, let us consider how adaptive tactical experts would approach a novel tactical problem using the decision-making model introduced earlier (Cue → Retrieval → Response).

Our adaptive experts rapidly establish situational understanding because they focus on key situational cues.[64] They know which information is important and which they can ignore. Like other experts, they organize information around the eight adaptive tactical thinking themes.[65] Next, they compare the cues against a rich library of mental models, allowing them to classify the situation as familiar or unfamiliar. Finally, they develop and implement an effective response. If the situation is familiar, they respond with a known solution. But if the situation is unfamiliar—our experts know it requires a novel solution. They begin to learn by mapping the domain, diagnosing the problem, and seeking additional cues. While none of their mental models fit this situation exactly, they call up several models that seem similar. They use these models to experiment—to see what works and what doesn't. These experiments are a form of learning that allow them to build a mental map of the domain and problem structure. While all this is happening, our experts are continually monitoring their thinking and managing their emotions.

How can the Army develop leaders to be like the adaptive tactical experts described above? The short answer is, the same way it develops leaders now—through the institutional, operational, and self-development domains—albeit with some changes.[66] Institutional development—mainly professional military education (PME)—can provide the tools for developing adaptive expertise that leaders then put to work in the operational domain.

Two complementary efforts are necessary to build adaptive expertise—education and practice. Leaders begin the journey toward adaptive expertise by building an intellectual foundation of the science that underpins expert tactical performance. PME is well-suited to perform this task by bridging science into practice through courses on expertise, decision-making, metacognition, and emotional intelligence. PME institutions can also show leaders how to apply these ideas by structuring practicums, labs, and exercises as deliberate practice and assessing student performance using the adaptive tactical thinking themes.

“Institutional development—mainly professional military education (PME)—can provide the tools for developing adaptive expertise that leaders then put to work in the operational domain.”

Still, although PME plays an important role in setting the foundation for adaptive expertise, real progress is only possible with deliberate practice in the operational domain. Army units must train leaders using deliberate practice under adaptive conditions. To be sure, existing training events are opportunities to accomplish this task. Leaders with a foundation in adaptive tactical thinking can use this knowledge to examine their thinking and their subordinates' during training and in after action reviews.

Yet, existing training is not sufficient to develop adaptive expertise. Army leaders need repetitive practice solving novel battlefield problems. Collective unit training provides these problems but not enough of them. Units simply do not train collectively often enough to give leaders the necessary repetitions to

develop adaptive expertise. Fortunately, leader development can make up the difference.

An effective and flexible tool for developing adaptive tactical expertise is *critical event training*. Critical events are domain-representative situations in which expert and nonexpert performance is clearly distinguishable.[67] The essence of critical event training is to put the practitioner in a situation where they are forced to make a decision or solve a problem. Once they have done so, they receive feedback on their performance from an expert coach. The feedback focuses not on the decision or solution itself but on *the thinking patterns that led to it* (the adaptive tactical thinking themes). The coach helps the practitioner compare how they thought about the situation to how an expert would think about it. The practitioner identifies where their thinking patterns diverged from expert performance, and in the next round of training, focuses on improving these weaknesses.

There are several ways to incorporate critical event training in all domains of Army leader development. As mentioned above, collective training events can be critical event training with a slight shift in focus during after action reviews. However, notional scenarios, historical case studies, and wargames are all low-cost methods that can serve as critical event training. Regardless of method, the leader must receive coaching feedback from an expert on their thinking. However, as performance and metacognitive skills improve, leaders will eventually progress without the help of an expert coach. For example, a leader can apply the principles of deliberate practice to the study of military history as part of a self-development program. Reading about historical battles and engagements can be critical event training repetitions if the practitioner has the foundational knowledge to think through each case as an adaptive tactical problem.

Conclusion

Military theorists, historians, and practitioners have long recognized that a commander's coup d'œil can be decisive on the battlefield. Yet, we have historically lacked the understanding to describe how coup d'œil works and how we might develop it in leaders. In the last few decades, however, advances in the science of expertise and decision-making have provided ways to understand coup d'œil as adaptive tactical expertise.

There are three tools that can build adaptive tactical expertise: deliberate practice under adaptive conditions, metacognition, and emotional intelligence. To develop tactical experts, the Army must incorporate these tools into leader development. Institutional training and PME can provide the intellectual foundation. However, the main effort must be in the operational domain, where leaders can provide the practice repetitions necessary to develop adaptive tactical experts.

Coup d'œil is not an innate talent gifted to a chosen few. Instead, coup d'œil is adaptive tactical expertise. It is a set of cognitive and emotional skills the Army can develop in its leaders. The best part is that the Army can achieve substantial gains in tactical leader performance with only slight changes to PME, unit training, and leader development. ■

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The Combat Studies Institute Staff Ride Team develops and conducts live and virtual staff rides as an educational and professional development tool for Army leaders. To learn more, visit https://www.armyupress.army.mil/Educational-Services/Staff-Ride-Team-Offerings/.

The Centreville Fort in Virginia using "Quaker guns" in March 1862. Military deception is probably as old as war itself, but the earliest photos of dummy weapons date from the 1861–65 American Civil War, when Quaker guns were used by both sides. The "guns" were in fact logs, mounted to give distant, telescope-squinting generals a false impression of firepower. (Photo by George N. Barnard and James F. Gibson via the Library of Congress)

Hiding in Plain Sight

Maj. Tony Formica, U.S. Army
Capt. Chris Pabon, U.S. Army*

An airborne division's staff conducts its final rehearsal before launching a joint forcible entry mission into Donovian-controlled territory. During this process, two crucial staff groups present their plans. The maneuver team showcases the principles of mass and audacity in their plan to rapidly seize an airfield and build up combat power, while the joint fires community presents a simple, coordinated symphony of destruction that will overwhelm enemy antiaccess and area denial capabilities, enabling paratroopers to seize the airfield.

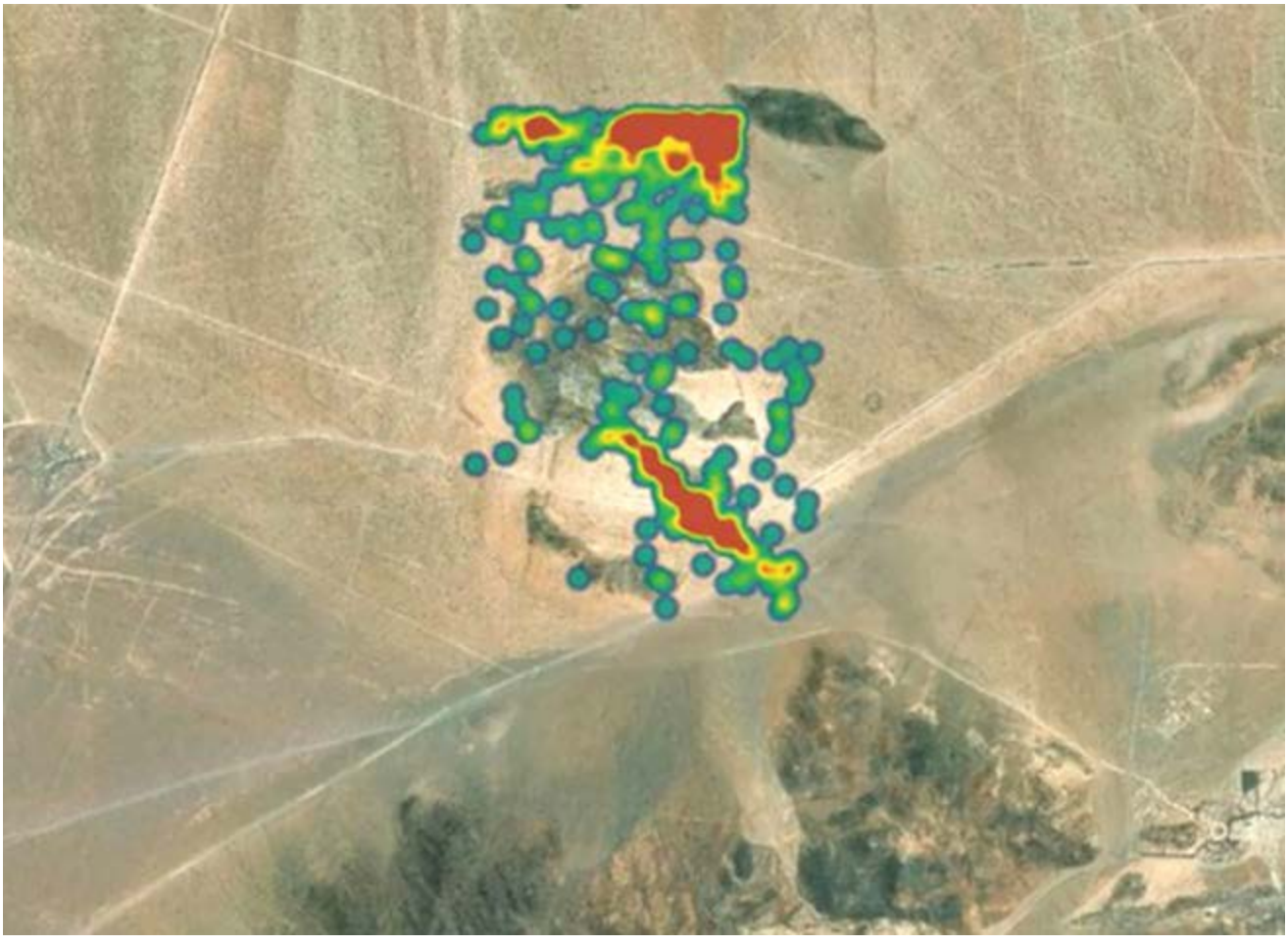
Once the commanding general (CG) has considered the presented information, he turns to a collection of staffers seated alongside the fires team and asks, "How are we going to control what the enemy thinks before and during execution? What will we conceal from the enemy, and what will we reveal to him?"

A passenger car is disguised as a Strela-10 antiaircraft missile launcher May 2022 in Ukraine. Ukraine uses wooden decoys like this that resemble advanced rocket systems to trick Russian forces into attacking them using long-range cruise missiles. Reportedly, Russian drone sensors have had great difficulty in distinguishing Ukrainian decoys from actual rocket systems. (Photo courtesy of Novynarnia)

One officer in the group, a young information operations (IO) captain, stands and begins answering the CG's questions and is soon followed by an electronic warfare (EW) technician. Convinced his division will prevail in seizing the airfield, the CG concludes the rehearsal.

The actual joint forcible entry, which occurs a few days later, confirms the CG's beliefs. Civilian tail watchers have difficulty determining the destination of the C-17s carrying the division's paratroopers, thanks to the division staff's advanced coordination and planning with joint partners and implementation of operational security (OPSEC) measures appropriate for the digital age. The enemy's intelligence, surveillance, and reconnaissance (ISR) assets observe dozens of apparent position areas for artillery and battalion command posts flowing off the seized airfield. The electromagnetic spectrum (EMS) does not help them separate a decoy from what is real as U.S. forces emit dozens of believable electronic signatures, confounding the enemy's best-trained EW technicians and therefore deceiving the opponent into firing on what they believe are real units. Subsequently, in response to their misguided actions, their long-range artillery is targeted and destroyed by the division's higher headquarters.

In this fictitious airfield seizure, the airborne division's information warfare played out almost entirely in the physical dimension and resulted in the opponent commander's disorientation and inability to make timely decisions. The U.S. division seized the initiative in this scenario because it controlled what the enemy commander saw in the air, on the ground, and in the EMS. This, in turn, influenced the commander's behavior in a way that was advantageous for the U.S. paratroopers and their survival in the critical early



A satellite image shows the electronic emissions signature of a battalion-size element training in May 2020 at the National Training Center (NTC), Fort Irwin, California. The highly conspicuous electromagnetic signature illustrates the challenge of concealing modern-day command posts from detection and attack. The opposing force at the NTC uses its electronic warfare systems to generate images like this as training tools to show visiting units what their digital signatures look like in the electromagnetic spectrum. The opposition force also uses them to target those units to be as realistic a threat as possible. (Photo by Col. Scott Woodward, U.S. Army, via Twitter)

hours of the operation. Despite the enemy's plethora of advanced sensors and linked, long-range precision fires, U.S. forces were able to hide in plain sight and force the enemy commander into the unenviable position of either surrendering the initiative or risking his own forces by striking at units that they could not verify as real or fake.

The core concepts of multidomain operations (MDO) and convergence demand that all Army echelons, including tactical formations, be proficient in continually merging effects in both the physical and digital world.[1] However, despite the necessity, the Army's tactical formations—divisions and brigade combat teams (BCTs)—are not prepared to meet this demand in the distinct case of information warfare, nor are they equipped to address information advantage (IA) activities more broadly. These formations must change the way they organize their staffs, equip their formations, and train in their use of information to both survive on and dominate the modern battlefield. Failing to do so will be fatal, whether in Kabul, Kharkiv, or in the large-scale combat operations (LSCO) of tomorrow. Success requires Army divisions to develop the ability to overwhelm an adversary's capacity to perceive reality and make timely decisions, which necessitates the integration of a host of disparate capabilities within both divisions and BCTs.

Clarification of Terms

The effects described in this article are in pursuit of *information advantage*. IA is defined in the draft

form of Army Doctrine Publication (ADP) 3-13, *Information Advantage Activities*, and is intended to replace the Army's current concept of IO. Its proposed definition is "a condition when a force holds the initiative in terms of the use, protection, denial, or manipulation of information to achieve situational understanding, improve decision making, and affect relevant actor behavior through the coordinated employment of relevant military capabilities."[2] IA supports a unit's ability to achieve *decision dominance*, another draft term that describes the ability to sense, understand, decide, act, and assess faster and more effectively than one's adversaries.[3] We are choosing to use these terms because, in line with the Army's MDO concept, they combine the extant capabilities of Army formations into a cohesive doctrinal construct aimed at gaining a position of relative advantage over our adversaries.[4]

Similarly, we employ the draft term *core information capabilities* (CICs) in lieu of the more commonly understood term *information-related capabilities* to describe "forces specifically trained and equipped in the use, protection, denial, or manipulation of information for the purpose of gaining and maintaining an information advantage."[5] It is important to highlight that CICs, especially under the IA construct, include not only military information support and public affairs operations but also prominently feature cyberspace operations and electronic warfare.[6] Division IO planners, brigade cyberspace electromagnetic activities (CEMA) noncommissioned officers, and public affairs officers across echelons are all examples of a division's CICs.

The draft concept of IA paints a vision in which Army commanders, including those at the tactical level, leverage their CICs in conjunction with their organic capabilities along five distinct, logically differentiated lines of effort. The conduct of information warfare and its associated focus on affecting threat decision-making cycles, command and control, and information warfare capabilities is one of these lines of effort.[7]

Information warfare is where we see the greatest risks and opportunities for today's tactical formations and their ability to achieve decision dominance. We believe units that are organized, equipped, and trained to leverage their full suite of CICs in information warfare will thrive in future conflicts. In contrast, units that are not prepared in this fashion will not survive a conflict's opening engagements.

> "The cold truth of multidomain operations, particularly in large-scale combat operations, is that a division cannot prevail in information warfare by selectively applying one or another of its core information capabilities. These must all work together continuously throughout operations to succeed."

Why This Is Necessary: Learning to Hide from a Million Eyes

Today's battlefields are characterized by persistent ISR; widespread electromagnetic sensors; long-range precision fires; and ubiquitous civilian-driven, open-source intelligence reporting fed by commercial satellites, cell phones, and social media.[8] Concealment, surprise, and information protection have never been more difficult for tactical units to achieve. U.S. units will struggle to hide on the modern battlefield because their enemies will be adept at converging advanced sensing capabilities on the ground, in the air, and in the EMS with lethal and accurate long-range fires.

Furthermore, reliable electronic sensor equipment at the brigade level and above in most top-tier militaries means that our adversaries will increasingly and actively look to the EMS to determine where U.S. tactical units' command-and-control (C2) nodes are located.[9] Adversary EW specialists, and the future algorithms that will replace them, will quickly assess whether a suspected U.S. C2 node is real or a decoy on the basis of its electronic emissions alone. Tactical units' ability to conduct information warfare

Soldiers assigned to 1st Squadron, 7th Cavalry Regiment, and 1st Battalion, 4th Infantry Regiment, conduct electronic warfare training during Combined Resolve XV, 23 February 2021 at the Hohenfels Training Area, Germany. Combined Resolve XV is a multinational exercise designed to build readiness and enhance interoperability with allied forces and partner nations. (Photo by Sgt. Julian Padua, U.S. Army)

and affect adversary decisions and C2 systems is at a premium.

All of this suggests that Army divisions must become masters at employing their core information capabilities to dominate their adversaries' decision-making cycles. The primary target audience for division and below CICs is enemy commanders and their understanding of the physical reality—the arrayal, composition, disposition, and strength—of the friendly forces opposing them. Tactical CICs allow commanders to establish that physical reality by controlling what the enemy commander sees through OPSEC measures, planned deception operations, or the employment of CEMA assets to manipulate the EMS.

The cold truth of MDO, particularly in LSCO, is that a division cannot prevail in information warfare by selectively applying one or another of its CICs. These must all work together continuously throughout operations to succeed. For perspective, consider a simple extension of the vignette used to open this essay involving deception operations, which fell within the draft information warfare's IA activity of affecting enemy decision-making.[10]

Part of the U.S. division's success in confounding the enemy commander during the airfield seizure stemmed from its ability to construct decoy command posts that not only looked realistic but also emulated a battalion command post's electromagnetic emissions, which includes everything from radio traffic to satellite uplinks. The fictitious division did this not because it *could* but because it *had to*. Distracting the enemy's attention and causing them to waste time and resources to sift through reality was the only way to survive and ultimately defeat their integrated fires complex.

When applied to real Army operations, deceptive measures like the decoy command post may not fool an

Army Reserve soldiers from the U.S. Army Civil Affairs and Psychological Operations Command (Airborne) participate in Command Post Exercise–Functional 22-02 at the Military Training Center on Fort Leavenworth, Kansas, 28 June 2022 to develop functional expertise in providing civil affairs, psychological operations, and information operations support to a division- or corps-level staff. (Photo by Maj. Xeriqua Garfinkel, U.S. Army)

enemy's national-level capabilities, but it will more than likely fool an enemy battalion or brigade staff who are sleep deprived and under strict time constraints. They may believe that the fake U.S. command post in their ISR feed is real, especially if it looks, moves, and emits frequencies on the EMS in ways indistinguishable from a genuine command post.

Getting to this point requires a significant amount of planning and coordination on the part of a U.S. division. Not only would a division operations officer need to order a subordinate unit to load decoy construction materials onto a plane, but that unit would also need to be proficient in the construction of decoys. Additionally, a whole-of-staff effort would be required to synchronize the establishment of the false command post with the rest of the division's operations. The IO officer would need to prepare and submit a tactical deception packet for approval to higher echelons, while the CEMA chief would have to coordinate with the BCTs' CEMA platoons to integrate emitters capable of replicating a battalion command post's emissions. The division's fires, protection, and maneuver planners would be required to synchronize with both individuals to create a construction and occupation plan convincing enough for the enemy commander to believe. Most importantly, this deception would have to support the division's overall mission of seizing the airfield to allow the buildup of combat power for subsequent offensive operations.

In the vignette, the deception supported the mission because the decoy positions lured the enemy commander into exposing his artillery assets to counterfire when he decided to engage them. Thus, the loss of their long-range fires capability removed the enemy commander's most potent tool for preventing the projection of U.S. combat forces from the airfield over the next several days.

Such a degree of planning and synchronization is imposed on U.S. divisions by the realities of modern, multidomain conflict, especially where information and physical dimensions meet in the form of the EMS. A decoy command post can be visibly indistinguishable from an authentic one, and a battalion can make a convincing show of emplacing the command post with security, but if the decoy does not emit frequencies like

a C2 node, with the same variety of systems that ebbs and flows in communications traffic like a real C2 node, then the deception will fail.

Deceiving enemy commanders is just one of a host of tactical applications of information warfare that divisions will have to leverage going forward. Electronic attack, precision messaging, delivering technical effects, and implementing OPSEC measures are all tasks that will be indispensable to a division's ability to survive on the multidomain LSCO battlefield. Each of these is an extraordinarily complex affair, both from an organizational and technical perspective.

However, it is also important that U.S. tactical formations do not over-appreciate the problem. The difficulties divisions will face in achieving decision dominance are formidable but manageable. More importantly, these same difficulties work both ways and afford U.S. tactical commanders several opportunities to overwhelm their adversaries.

Situations arising when information overload disorients individual decision-making will soon cease to be an academic abstraction and will become a lived experience for company and battalion commanders in not only U.S. but also adversary formations.[11] The sheer volume of data modern staffs are capable of ingesting means that separating truth from fiction can cause significant delays in an organization's ability to make timely decisions based on information. Simple exercises in epistemology can, potentially, bring operations to a standstill. U.S. forces should anticipate this trend and prepare to exploit it to the fullest potential.

Changing the way tactical staffs and maneuver elements currently do business is the only way to effectively implement such a strategy. Staffs must merge their separate CICs, such as CEMA and IO, to gain efficiencies and drive innovation. Fighting formations must acquire cutting-edge technology like our example decoy emitters. Finally, both staffs and fighting formations must go through enough tough, gritty, and realistic training scenarios where the fight for decision dominance becomes instinctive.

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How to Do This: Engineering a Decision Dominance Machine

Senior Army leaders have already recognized a need for division staffs to establish IA-focused entities and have explicitly tied CEMA to that construct.[12] We recommend that division staffs physically combine their IO, CEMA, and space operations core information capabilities under one roof into an information warfare task force (IWTF). Having these technical specialists working together is both valuable and necessary.

The value in placing these CICs into a single staff section is that they gain efficiencies and synergy by working together that they would not achieve if left to their own devices. It has been our experience that when IO personnel are not tied to other core information capabilities, they tend to direct their energies to understanding online sentiment as reflected in social media, typically by aggregating reports and analyses prepared by higher echelons. CEMA personnel focus on fielding new equipment to brigade EW platoons with little leftover bandwidth for thinking through how to meaningfully integrate those capabilities into a battalion or brigade's combat operations. Space/technical operations personnel, meanwhile, are frequently preoccupied with managing their exquisite capabilities and keeping their facilities accredited. This is the staff equivalent of a deadweight loss. While all the above parochial activities are good and essential to the division's operations, they do not optimize each CIC's ability to inform and support the division's aggregated IA activities.

The U.S. Army Communications-Electronics Research, Development, and Engineering Center has identified fifteen soldier-vetted technologies intended to lighten and make more mobile command post infrastructure while also increasing capabilities and lowering the electronic signature. (Image courtesy of the U.S. Army)

As we described earlier, the division's deception professionals—the IO officers—need to have a seamless working relationship with their CEMA counterparts for their deceptions to have any real validity. Likewise, modern-day electronic support activities such as electronic sensing are significantly enhanced by the integration of space-based collection capabilities. The possibilities for cross-domain synergy among division CICs are limitless, but they will not occur through serendipity. Division commanders must make a conscious decision to place them into a single, coherent organization.

This implies a requirement for leadership. An IWTF must be headed by an officer who has both peer access to staff primaries and who can demystify the highly technical nature of the core information capabilities for the rest of the staff. It is easy to be intimidated by the technical jargon that typically accompanies most CICs' work. Discussions of waveforms, frequencies and amplitudes, orbital mechanics, and multiacronym program names are inseparable from CIC tradecraft. However, IA is commanders' business, and that means that commanders' staffs must be able to quickly understand the capabilities CICs bring to bear on the fight.[13] Having a clearly identified individual who can interact with staff primaries as an equal and who can rapidly translate CICs into operational timelines and graphics will enable staffs to relentlessly pursue decision dominance.

All the staff brilliance in the world, however, will not materially increase divisions' capabilities to achieve IA at the tactical level. This is why combining the CICs into an IWTF-like structure is vital. Tomorrow's U.S. tactical formations will employ a host of technical capabilities that operate on the principle of concealing through revealing that are actively under development through the federated Department of Defense research and development enterprise. Whether flooding the EMS with multiple plausible U.S. signatures, spoofing adversary radars with the appearance of seemingly dozens of aircraft, or employing unmanned robotics to jam enemy communications, tomorrow's brigades and battalions will compete for decision dominance using technologies fundamentally designed for information warfare.[14] Somebody will need to think critically about not only evaluating these emerging technologies, but integrating them into the organization, doctrine, and

training of division formations. We recommend that the IWTF fill this role. Nobody else in the division staff is better postured, by virtue of both formal training and inherent roles and responsibilities, to test, evaluate, and integrate technologies such as decoy emitters into tactical formations with an eye for decision dominance than the division's IO, CEMA, and Space CICs.

Russia's frustrated information warfare campaign in Ukraine, particularly regarding its underwhelming efforts to control the EMS, further suggests that staffing and equipping are necessary but insufficient.[15] Robust training environments are indispensable for making staffs seamless in their processes and fighting formations proficient in the complex collective tasks they will be required to perform in combat.

Division staffs must learn to not only set up their command posts and displace but also figure out who is responsible for setting up decoy command posts to prevent the enemy from drawing a target on their location. Brigades and battalions must utilize their CEMA platoons as opposition forces (OPFOR) to deliberately jam their own units during squad and field training exercises. Units should only be able to fly their unmanned aircraft system platforms beyond line of sight if they successfully locate and destroy the jammers that would deny them this capability in LSCO environments. Denied, degraded, and disrupted communications and geolocation technologies must become a fact of life in home-station training: our staffs and the soldiers they support need to learn to fight through the foggy information environment that is characteristic of MDO. BCTs will require multiple experiences against a thinking, adaptive enemy to become experts in leveraging their core information capabilities to both survive and prevail in a contested information environment.

The combat training centers (CTC) have their own work to do in preparing and validating tactical formations as ready for future conflict.[16] Their OPFOR must be equipped to impose a contested EMS on U.S. formations, and they must similarly become adept at obscuring their composition, disposition, and strength through the combined use of OPSEC, deception planning, and decoy electronic emitters. Brigade and battalion commanders can no longer get a pass on competing in the information environment by merely having their IO officers present them with the top social media trends in the simulated information dimension of the CTC. An IO officer who has read *LikeWar* and who spends a CTC rotation trying to tweet at the enemy is likely doing very little to affect the enemy commander's decision-making process.[17] CTCs need to help staffs break out of this habit by making it possible and necessary for them to directly attack OPFOR command and control systems, kill chain timelines, and perceptions of reality using the CICs organic to their own formations.[18]

Conclusion: A Culture Committed to Information Advantage

We have focused our arguments and recommendations chiefly on the implications that modern and future battlefields portend for U.S. formations and their ability to wage information warfare. This does not obviate the requirement for a comprehensive assessment of how to staff, equip, and train our tactical units for all the activities that are required to truly gain and maintain IA. How, truly, do U.S. divisions protect friendly information in an age of ubiquitous cell phones and commercially available satellite imagery? Is the payoff worth the effort for a U.S. brigade to try to meaningfully influence foreign audiences? How do U.S. formations remain relevant and timely when informing the American public in an age of media echo chambers?

Each of these are important questions with profound implications for the ways U.S. tactical formations prepare themselves to deploy, fight, win, and survive in future conflicts. We do not propose to have the answers, but we believe that the best universal action the Army can take is to change its culture. IA activities, and all the highly technical core information capabilities that support them, need to become part of the basic operating objectives of platoons and companies as much as they need to become a muscle memory for division and brigade staffs. Whatever changes to their organization and equipment divisions make, continuous validation in tough, gritty, and realistic training will drive the habits of heart necessary to compete for and gain decision dominance.

The surest sign that tactical formations have fully internalized the importance of IA activities will not be found in a staff replete with brilliant technicians, or in a BCT replete with and proficiently trained on the latest EW equipment. It will be found on the flight line of the fictitious U.S. airborne division we saw at the beginning of the article, when a young squad leader deliberately

prioritizes the loading of his platoon's decoy emitters on an aircraft because he knows he will need these to stay alive and win on the airfield he is about to seize. ■

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Maj. Tony Formica, U.S. Army, serves as the operations officer for 2nd Battalion, 501st Parachute Infantry Regiment, in the 82nd Airborne Division's 1st Brigade Combat Team. He served previously as the chief of the 82nd Airborne Division's Information Warfare Task Force and deployed twice with the division headquarters in that capacity, most recently to Poland in response to Russia's aggression in Ukraine. He holds a BS from the U.S. Military Academy and an MA from Yale University's Jackson School of Global Affairs, which he obtained through the Downing Scholars Program. Formica deployed in support of Operation Enduring Freedom with 1st Stryker Brigade Combat Team, 25th Infantry Division, and in support Operation Atlantic Resolve-North as a company commander with the 173rd Infantry Brigade Combat Team (Airborne). He has also served as an observer-controller at the Joint Readiness Training Center.

Capt. Chris Pabon, U.S. Army, serves as the 82nd Airborne Division's Information Warfare Task Force deputy and deployed with the division headquarters once in this capacity to Poland in response to Russia's aggression in Ukraine. Pabon also deployed in support of Operation Enduring Freedom with the 1st Battalion, 502nd Infantry Regiment, 101st Airborne Division. He has served multiple tours of duty in the 3rd U.S. Infantry Regiment (The Old Guard). Pabon holds a BA in criminal justice from American Military University and an MS in global studies and international relations from Northeastern University. **He is the main writer for this article.*

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Maj. Gen. Bryan Owens (*third from left*) , U.S. Army Alaska commander, receives an operations order back brief 20 July 2016 from Col. Kevin Lambert (*second from left*), 1st Stryker Brigade Combat Team, 25th Infantry Division "Arctic Wolves" commander, in the brigade tactical operations center near Fort Greely, Alaska. (Photo by Marion Basiliali, JPMRC-ITACSS)

Assessing the Modern Fight

Lt. Col. Mitchell Payne, U.S. Army

One of the most important aspects of operating an automobile is the driver's ability to look through the front windshield to see and understand where the vehicle is going. The driver's ability to use the side and rearview mirrors to gain situational awareness is important, but the critical aspect of driving is the ability to look forward to see where one is headed. This ability to look ahead allows the driver to adjust behavior—to speed up, slow down, or change lanes—to arrive at the intended destination.

Leading an organization and driving a car are two categorically different topics, with leadership being—in several orders of magnitude—a far more difficult task. This analogy is admittedly simplistic; most military

vehicles have more than one person. But to move from the simple analogy to the complex operation, both driving a vehicle and organizational leadership require an awareness of the environment, a forward-looking vision, and a clear understanding of the destination at hand to be successful. The military assessment process is how staff and commanders achieve a shared understanding of their surrounding environment and their way forward to reach the necessary military end state.

Every single commanding general across multiple Warfighter exercises (WFXs) and mission command training sessions has highlighted the importance of getting assessments right. Sadly, this author has personally heard every single one of those commanding generals also express their concerns and frustration that their organizations are not getting the assessment process "right." The unanimous expression of concern across multiple general officers suggests either a gap in organizational assessment doctrine or a lack of clarity in how to apply assessment doctrine.

One reason why commanding generals may express frustration with the assessment process is that all too often the process narrowly focuses on the enemy battle damage assessment (BDA). When an organization limits the assessment process to focus entirely on the effects the organization is having on the enemy, subsequent assessments cannot inform the commander of their ability to look ahead. Focusing on BDA is like driving forward by only looking in the rear-view mirror; operational assessments must be forward-looking to inform the commander's ability to visualize, describe, and direct the operation.[1]

This article attempts to bridge the gap between the doctrine on organizational assessments and the friction arising from applying the doctrine during large-scale combat operations (LSCO). Understanding the history and doctrine of operational assessments may help us to understand the problems and friction of assessments in a new light and may suggest tangible actions that divisions and corps can take to use the assessment process to inform the commander's visualization and rapid decision-making process.

Lt. Col. Mitchell Payne is an observer coach/trainer with the U.S. Army Mission Command Training Program at Fort Leavenworth, Kansas. His research areas include human resource development, organizational behavior, ecclesial leadership, and organizational culture. He has previously served as a battalion/task force commander, 3rd Infantry Division; brigade and battalion executive officer, 188th Infantry Brigade, First Army; and battalion and squadron executive officer, 1st Stryker Brigade Combat Team, 25th Infantry Division.

History and Doctrine of Organizational Assessments

The U.S. military doctrine supporting operational assessments—both Army and joint doctrine—provides a robust framework to understand and apply assessments to organizations. Admittedly, however, there may be a disconnect between doctrine and the application of organizational assessments. Recent doctrinal publications address some of this disconnect. Chapter 8 of the recently published Field Manual 5-0, *Planning and Orders Production*, discusses the organizational assessment process. The doctrinal update ties the assessment processes to all steps of the operations process.[2] Despite this helpful update, however, evidence from multiple recent WFXs shows that at both the division and the corps level, there is still a gap in the application of our doctrine.

Assessments are such a fundamental aspect of warfare that often they take place informally without any fanfare. Almost every commander asks a simple question like "How are we doing?" or "Are we winning?" when returning to their command posts. Yet the history behind the formation of operational assessments is a little more complicated.

The Vietnam War offered the first true systematization of operational assessments. Then Secretary of Defense Robert McNamara came from a background at Harvard Business School, the Army Air Forces Statistical Control Division in World War II, and Ford Motor Company.[3] This quantitative-focused background helped formalize the military assessment process by emphasizing numerical metrics—munitions expended, body counts, hamlets pacified—as a definition of "success" in Vietnam from 1966 to 1968.[4]

In the wake of Vietnam, the military focus shifted to large-scale combat against the Soviet military for the remainder of the Cold War. This focus was marked by

a staccato of numerous small-scale or limited military operations. The vacillation between quantitative and qualitative assessments to some degree also reflected the shifting focus.

The onset of counterinsurgency operations in the post-9/11 era saw an initial return to numerically based assessments. Many senior leaders may remember the broad swath of "stoplight" charts and heaps of statistics assiduously tracking the number and progression of each member of the Iraqi and Afghan military forces.[5] In hindsight, the comfort of forward progressing quantitative numbers buoyed false confidence in the *qualitative assessments* of such partnered units, as evidenced in the wholesale surrender of Afghan military forces in the wake of the Taliban resurgence in the summer of 2021.[6]

The mid-2010s, however, saw a holistic reexamination of Army doctrine and strategic capabilities. After more than a decade of small-scale counterinsurgency operations, the Army returned to LSCO. The return to a decisive-action focus at the combat training centers and WFXs forced training audiences to reckon with a near-peer and free-thinking enemy.

This short history lesson in organizational assessments is important because it shows within the assessment process the military has a foundational bias toward quantifiable metrics. As military leaders, we think that if we can somehow assign a specific number or percentage to an assessment, then that quantifiable is inherently better or more scientific. In terms of the operational assessment process, however, the ghosts of data-driven assessments raised their visage again. Commanders and, more importantly, their staffs became once again fixated on the quantifiable aspects of assessments that feed directly into the division targeting process.[7]

The implications of this numeric fixation often mean leaders relegate the assessment process to the intelligence and fires warfighting functions (WfF), seeing organizational assessments as simply a means of feeding the next targeting cycle. While integrating assessments into targeting is extremely important, unfortunately, it may come at the cost of a broader qualitative assessment and understanding of the organization's ability to achieve the operational end state. If an organization is only looking rearward at what effects it has on an enemy force, it will not look forward and see or adjust to the curves in the road ahead.

Defining Assessments

Surprisingly, the doctrine on assessments does not explicitly focus on quantifiable metrics. Rather, U.S. Army doctrine defines an assessment as "the determination of the progress toward accomplishing a task, creating a condition, or achieving an objective."[8] Inherent in this definition is an understanding that assessments are tied to mission objectives. The joint doctrine makes it even more clear. Commanders use the assessment process to "assess the progress of the operation toward the desired end state."[9]

Army doctrine also notes the complexity of getting the assessment process correct. "There is no single way to conduct assessments. Every situation has its own distinctive challenges, making every assessment unique."[10] The nebulous nature of organizational assessment helps one to understand why assessments have traditionally swung between a hard focus on quantitative evaluation and qualitative assessment.[11] Doctrinally, assessments involve three main activities—monitoring, evaluating, and recommending.[12] Another friction point occurs when the assessment team fails to balance all three critical aspects. Often, organizations will default to equating assessments with evaluations at the cost of monitoring and recommendations.

Finally, the leaders in the assessment process must have a solid understanding of the intended audience (internally, higher, subordinate, and adjacent), how those agents receive information, and what the intended end state or objective is for each of those audiences.[13] These complexities contribute to a "failure cycle" in which the lack of organizational advocacy and command disinterest converge with a poorly defined assessment process and inadequate assessment products.[14] Despite these complexities, one way to avoid assessment failure and help simplify the assessment process is to break it down into two broad categories: combat assessments and operational assessments.

Combat Assessments

The term "assessment" has become synonymous with a singular focus on assessing the effects that one has achieved on the enemy at hand. "How many of the enemy did we kill?" "What effect does that have on the enemy?" "Do I have to reengage the enemy?" These questions are critically important to understand how a unit's actions impact the operating

environment and comprise the elements of combat assessments.[15] Combat assessments are presented in doctrine as a subset of the targeting process and include munition effectiveness and reengagement recommendations. These two elements are germane to the targeting discussion but may have little impact on the overall assessment discussion outside of the specific targeting decisions. Far more critical to the larger assessment process is the first component of combat assessments—BDA.

Simply stated, BDA is how organizations understand what they did to the enemy. BDA is, at its most fundamental level, a collection of individual data points. "We destroyed XX pieces of long-range artillery." Doctrinally speaking, BDA "includes known or estimated enemy unit strengths, degraded, neutralized, or destroyed enemy weapon systems, and all known captured, wounded, or killed enemy personnel during the reporting period."[16] But each one of those components is merely an individual data point—the simple "what." It is only when one adds a layer of analysis—the "so what"—can people connect and weave those specific data points into a coherent narrative. Therefore, doctrinally speaking, BDA is primarily an intelligence responsibility.[17]

Once again, however, the quantitative/data-focused nature of BDA combines with the military's bias toward numerical assessments. This all too often leads to the presentation of data apart from the analysis. Moreover, the focus on ensuring 100 percent fidelity with data accuracy may come at the cost of analytical capacity about what it means. It is immaterial to know how many of one specific weapon system we have effectively destroyed if one is unable to put that data in context. The question of "what" is only important as it feeds the "so what," but the "so what" is only marginally important unless it allows the intelligence analyst to predict what the enemy will do.[18] The problem with using BDA as the singular metric for organizational assessments is that staff members will exclusively focus on getting BDA correct at the cost of analyzing what the data means seventy-two to ninety-six hours from now. The role of the intelligence team in combat assessments is to capture the BDA on the enemy and use that BDA to predict the enemy's courses of action in an event template and matrix.[19] The event template is the singularly most important document the intelligence team produces; it leads us directly to the other half of organizational assessments: operational assessments.

Operational Assessments

Returning to the doctrinal definition bears reemphasizing that the assessment process is inherently tied to operational end states.[20] At the most basic level, operational assessments simply ask, "Are we on track to achieve our end state?" Continuing with the driving analogy, if BDA is like looking in the side and rearview mirrors, then operational assessments are akin to looking through the windshield and asking, "Am I on track to get where I want to go?" This question of intended destination—or end state—draws a parallel to operational art.

One of the main functions of operational art is to ensure that tactical actions occur under the most advantageous conditions possible.[21] Operational art has many elements, but the first is understanding the end state and desired future conditions. Other pertinent intersections between operational art and the operational assessment process are decisive points, tempo, operational reach, and risk. Each of those aspects, as well as end states and conditions, requires continuous monitoring (i.e., assessing) to evaluate progress and changing conditions in the operational environment that may result in differentiated end states.

Tying operational assessments to operational art suggests two distinct points. First, the assessment process must be fully integrated across all WfFs.[22] The assessment process cannot be relegated to one or two WfF representatives with an operations research and systems analysis (ORSA) officer in tow. To achieve the desired end state, organizations must apply all elements of combat power toward achieving this goal. If we have observed anything from recent operations in Ukraine, the most aggressive maneuver plan in the world may become irrelevant if the maneuver forces outrun their logistical capabilities. The operational assessment process cannot be relegated to the intelligence and fires community—it must involve all other WfFs.

Second, the operational assessment process must take place in a larger context. The organization's assessment process must feed some type of plans update brief to the commander to reframe (as necessary) the ground maneuver plan. Failure to do so results in wasted staff effort and truncated planning timelines for staff and subordinates.

Table 9. Six Assessment General Questions	
Question	**Details**
How has the operational environment (OE) changed?	The staff must document key changes in the OE. Their focus is on understanding the impact of friendly and enemy operations and the impact of activities conducted during the previous reporting period. Answering this question determines if the mission, tasks, and activities executed impact decisive conditions in a positive or negative way.
How much discernable progress exists in accomplishing our operational objectives?	Answers to this question help determine progress or lack of progress along measurable objectives. When progress is difficult to measure, using standards-based bins allows the staff to qualitatively relate if there is or is not discernable progress.
What do we think caused progress or lack of progress in achieving our objectives?	Analysis will enable the staff to posit why they think changes in the OE occurred. Professional military judgment enables critical thinking on attributing causality, but the staff should maintain caution during this effort to avoid common biases. Leveraging a theory of change or a causal diagram can assist the staff in determining complex changes in the environment.
Do the changes in the OE cause a change to operations and plans?	Answering this question queues the staff to implement branches or sequels to the plan, ensuring the current plan possesses a clear path to achieve the end state or objective.
What are the resource gaps to accomplishing our objectives and what are the risks associated with the current resourcing?	Gaps are an important product of the analysis step because they lead to solid recommendations that the commander can take action on by either reallocating resources or requesting additional resources from a higher headquarters (HHQ). Clearly articulating the risk to the operation relays the criticality of the resource allocation decision. *See Chairman of the Joint Chiefs of Staff manual 3105.01, Joint Risk Analysis*, for standardized risk definitions.
How does this assessment nest with HHQ assessments and incorporate lower level assessments?	The assessment informs the commander by articulating progress and if that progress causes a change to the mission, but it also is an important communication tool for the commander and staff because it provides a detailed list of capacity, authority, or capability gaps and associated risk in a common language to relay to their HHQ. The details from subordinate headquarters must provide relevant information that informs the evaluation of progress, incorporating their gaps and risk if relevant to the higher mission.

(Table from Army Techniques Publication 5-0.3, *Multi-Service Tactics, Techniques, and Procedures for Operation Assessment*, 2020)

Figure 1. Six Assessment General Questions

All too often during WFXs, observer coach/trainers have witnessed a division targeting decision board devolve into a wargaming session because the ground maneuver plan had changed so much such that the original end state was unachievable. As the staff leaders assess the operation and determine that decisive points are (or are not) able to be achieved given the operating environment, someone must tell the commander.[23] Tying the assessment working group within a critical path that feeds the planning and targeting process is a critical step to ensure the staff can enable the commander to visualize, describe, and direct the organization.[24]

Assessment Working Group Framework—A Way

If one accepts the premise that the assessment process must be integrated across WfFs and within the larger planning process, then one can extrapolate further implications and conclusions. The division or corps assessment working group (AWG) is the meeting where, by doctrine, those WfF staff representatives gain a shared understanding and provide pertinent information for the commander.[25] Army doctrine also outlines six general questions for members of the AWG to discuss within the AWG.[26] Figure 1 lists the general assessment questions.

Here, however, experience indicates that there may be a gap in the assessment doctrine. While the general assessment questions are helpful in broadly shaping the staff's understanding, junior staff members may find them *too broad*. The lack of specificity within those general questions may not lead to the desired level of shared understanding across all WfF elements, and some degree may contribute to the overall frustration with the assessment process. Subsequent assessment doctrine on the AWG also suggests multiple analytical tools such as graphs, charts, and pivot tables—all of which still approach assessments from a quantitatively biased perspective.[27]

A slight departure from doctrine may be beneficial to add a greater degree of specificity by WfF to the AWG

AWG Meeting Framework: A Way

WfF	Input	Assessment	Risk (F / M)	Output	Endstate	Feeds
INT	• BDA • Current ENY SITEMP	• What effects did we have on the ENY? • What is the new ENY task & purpose?	• (M) What if the ENY does something different?	• ENY EVENTEMP (next 24 - 96) • Recommended IC Plan Changes	**1. Can we reach our original endstate?** **2. What endstate can we achieve?** **3. What critical events must we execute to reach this endstate?**	• IC Working Group • Targeting WG / DB • OPSYNC
M2	• Current Combat Power • Current Unit Locations • Anticipated Combat Power (next 24/48/72) • Adjacent Unit Location	• Am I where I need to be? • Where do I want to be in the future? • Do I have the Combat Power to execute necessary tactical tasks (COFMS)? • What are my adjacent unit's plans? • What are the CDR's decisions?	• (F) Where do we lose the most combat power? • (M) How does our plan affect higher and adjacent units?	• Necessary Combat Power & TASK ORG needed to achieve Operational Endstate • Position, Time/Distance Analysis from current location to future location • Refined OPS Graphics & Graphic Control Measures • Refined Operational Timeline		• Plans Update Brief • Targeting WG / DB • G3 Sync • OPSYNC
FIRES	• Combat Power • Unit Locations • Target Ranges	• What effects did I have on the ENY? • What targets do I need to shape? • Can I range them?	• (M) What are we not targeting? Range / Priority?	• Updated Targeting Guidance • Updated PAA repositioning • Updated Enabler Integration		• Targeting WG / DB • OPSYNC
SUST	• LOGSTAT • Replacement Flow • MEDCOP	• Do I have the logistical reach to sustain the decisive operation?	• (F) Who are we not supporting? Range / Priority?	• Reprioritization of Support based on critical commodity status and unit • Reconstitution Prioritization • Recommended to move logistical nodes		• Sustainment WG / DB • DIV Movement Board • OPSYNC
PRO	• Location and Capability of Protection Assets (Internal, Higher)	• How should we re-prioritize protection assets (what & where)? • What do we have to protect it from?	• (F) What are we leaving vulnerable? Range / Priority?	• Refinements to PPL • Updated Risk Assessment		• Protection WG • DIV Movement Board • OPSYNC
C2	• COMS architecture	• How are we communicating with each other?	• (M) What are our COMS gaps?	• Repositioning C2 nodes • Repositioning COMS nodes		• Targeting WG • OPSYNC
Lower Units	• Subordinate Assessments	• Can I achieve my assigned tactical task on time with my combat power?	• (F / M) What risk do you see?	• Refined Guidance • Refined Task Org • Updated RFIs		• G3 / S3 Sync • OPSYNC

(Figure by author)

Figure 2. Assessment Working Group (AWG) Meeting Framework

process. Figure 2 offers an AWG meeting framework as "a way" to frame the problem of organizational assessments with a greater level of specificity.

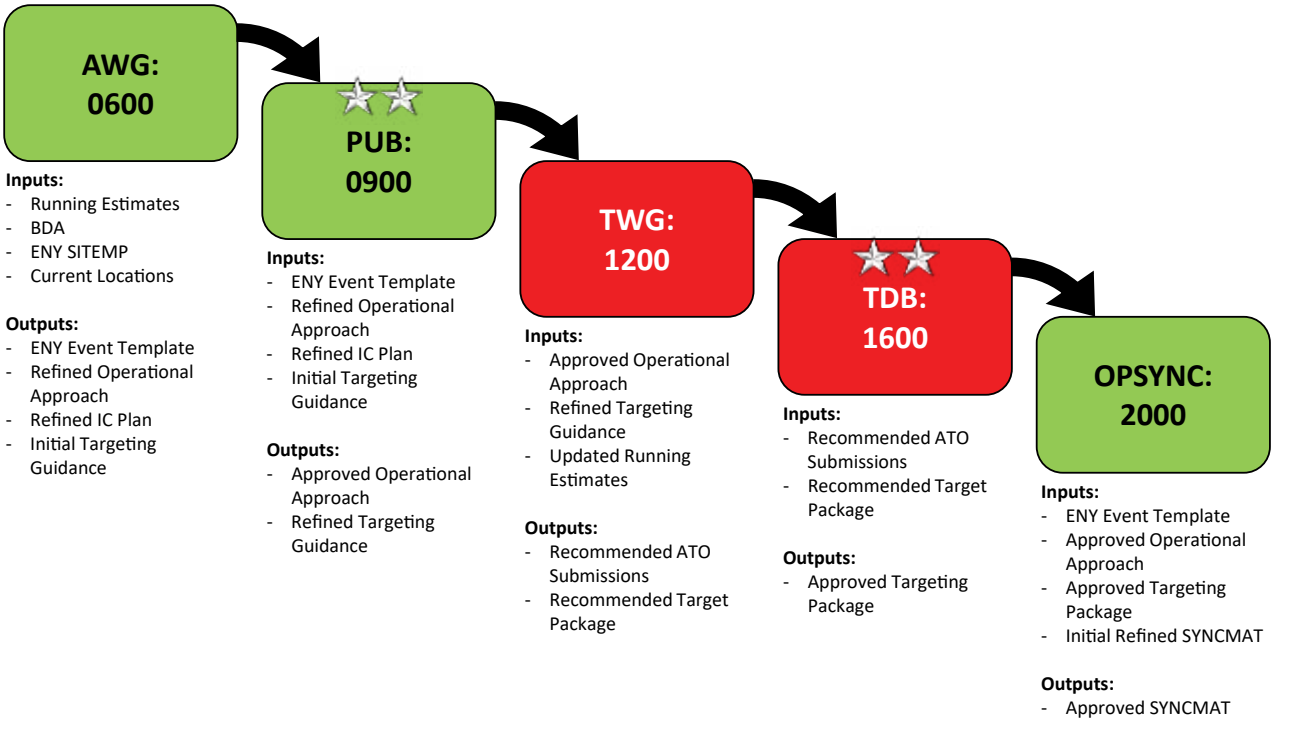
The first column, "WfF" offers an integrated approach to the assessment process and incorporates subordinate unit feedback. The "Inputs" to the meeting are broken down by each WfF and generally consist of their running estimates. The "Assessment" column suggests various questions that each WfF representative must consider and communicate to the group writ large. "Risk" is broken down by risk to force (F) and risk to mission (M). "Outputs" are tangible products that must be updated based on the assessment and risk, all of which drive a shared understanding across all WfFs as to the feasibility of the current and future end states. Finally, the last column, "Feeds," indicates how the outputs from each WfF logically flows into follow-on meetings such as the plan's update brief, the targeting working group, and even the protection and sustainment working groups. This figure captures much of the prevailing joint and Army doctrine.[28]

While this list is in no way meant to capture every single aspect that could be assessed, to some degree it offers an integrated framework to help each WfF understand how it must contribute to the overall operation. Irrespective of what specific questions or assessments each WfF representative asks, the general framework applies as updated intelligence drives adjustments to the maneuver plan. Fires must shape their targeting based on the maneuver plan, which also affects protection, sustainment, and the command-and-control architecture.

Placing the AWG In the Critical Path

The placement and timing of the AWG on the unit's critical path is another critical factor that bears consideration. The fact that many of the outputs of the AWG in turn feed other critical organizational meetings suggests that the AWG is best served to take place in the early morning periods. This is also supported by the fact that

AWG In The Battle Rhythm: A Way



(Figure by author)

Figure 3. Integrating the AWG into the Critical Path

in LSCO, many major operations take place at night; scheduling the AWG in the early morning allows all WfF representatives to gain a shared understanding of the results of the previous night's operations (on both enemy and friendly units). Figure 3 suggests the placement and timing of the AWG in a unit's battle rhythm.

To the degree possible, the outputs from each meeting become the inputs to the next meeting. This model introduces the plan's update brief to the organizational battle rhythm. The intent behind this meeting is to back brief the commander on recommended updates to the maneuver plan, with the meeting output as the approved maneuver plan. Approving the maneuver plan prior to the targeting cycle allows a more focused discussion on how to best use targeting to support maneuver, and results in greater organizational efficiency within the targeting working group and decision boards. Additionally, the introduction of the plan's update brief in the morning helps focus the commander on thinking about the deep and future fight early in the day before battlefield circulation, giving commanders more time to reflect on their intent and end state prior to the targeting decision board.

Meetings with the commander are annotated with two stars. The meetings highlighted in green are generally aligned and led by operations personnel, whereas the meetings in red represent meetings that are generally led and chaired by the fires community. While every battle rhythm must be adjusted to fit within the context of the specific operation and higher headquarters, the recommended timings are based on multiple observations across multiple WFXs.

In many ways, the planning and operations critical path represents a daily iteration of the military decision-making process. In this framework, the assessment working group is akin to a daily mission analysis, whereby staff and commanders gain a shared understanding of the changes in the operating environment that may cause the

organization to deviate from reaching their operational end state. Hence, the placement of the AWG at the start of the daily military decision-making process cycle generates a common logical foundation to resynchronize organizational maneuver planning and integration of enabler assets in support of the updated maneuver plan.

Reducing Friction in Operational Assessments

While this article has highlighted the relevance of qualitative assessments in LSCO, the fact remains that quantitative assessments are also a tool in the organizational assessment process. Whether it is the calculation of the destruction of enemy combat power or the use of a correlation of force and means calculator to determine necessary combat power at a given place and time, quantifiable data adds a degree of scientific methodology to organizational assessments. At the division and higher levels, the proper integration of the ORSA can add a powerful tool to the assessment process, but only if the ORSA is used properly. ORSAs are like a highly calibrated torque wrench—if used properly they add a great deal of value, but a torque wrench can be ruined if used as a hammer. ORSAs can use power statistical analyses to determine relationships between variables, but the organizational assessment process (and operational assessments in particular) cannot be reduced to mere numbers on a spreadsheet. In addition to a bias toward quantitative data, two other biases add to friction in the context of assessments: groupthink and confirmation bias.

Groupthink. Psychologist Irving Janis coined the phrase "groupthink," recognizing it as a psychological phenomenon where people are too deeply concerned about remaining within a cohesive in-group.[29] The in-group's desire for unanimity overrides their motivation to "realistically appraise alternative courses of action."[30] This is different from "yes-men" who simply tell the commander what they want to hear. In groupthink, everyone wants so much to be a part of the team that the thought of suggesting any alternatives becomes unthinkable. No one wants to rock the boat, so they fail to mention the giant iceberg ahead of them.

Confirmation bias. Confirmation bias is another cognitive trap that all members must actively search for. Confirmation bias occurs when individuals only seek out (whether consciously or unconsciously) the data that builds their one-sided case.[31] To some degree, this is the flip side of groupthink in that people come to the table with their preconceived ideas and then look for the data to back them up. One cannot see the icebergs ahead if one does not look for them.

The solution to both groupthink and confirmation bias is for leaders to actively seek out differentiated opinions. Simple techniques such as appointing a staff member as the "Red Team" leader during meetings can help combat these cognitive biases. Leader actions such as simply asking "what are we missing?" before the end of each meeting can have a powerful impact on developing an organizational culture that combats these biases.

Conclusion

Organizational assessments are difficult because LSCO is chaotic. Free-thinking enemies present dilemmas to organizations at every level, and the complexity of knowing when and how to synchronize all elements of combat power in time and space at a decisive point is a daunting task at any echelon. Assessments are hard because combat is hard, but assessments are important because winning is important. Military organizations must put into place systems that integrate organizational assessments across all WfFs and into the proper place and time in the unit's battle rhythm. Organizations must learn to understand both how combat assessments inform the operating environment and operational assessments describe and shape the future end state. Doing one without the other is in the best case driving recklessly in your environment, and in the worst-case driving the car forward by looking in the rearview mirror. ■

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Soldiers with the 24th Composite Truck Company and Task Force Spartan work together to change tires on an M1000 Heavy Equipment Transporter semitrailer 24 December 2021 during Operation Provider Caravan in Saudi Arabia. The operation, conducted with elements of the armed forces of Saudi Arabia and Kuwait, exercised some of the logistics capabilities within the U.S. Central Command area of responsibility to ensure U.S. and partner forces have the resources and flexibility to deliver supplies and materiel wherever needed. (Photo by Sgt. 1st Class Mary S. Katzenberger, U.S. Army)

Sustaining Multidomain Operations

The Logistical Challenge Facing the Army's Operating Concept

Maj. Bryan J. Quinn, U.S. Army

Strategy, like politics, is said to be the art of the possible; but surely what is possible is determined not merely by numerical strengths, doctrine, intelligence, arms, and tactics, but, in the first place, by the hardest facts of all: those concerning requirements, supplies available and expected, organization and administration, transportation and arteries of communication.

—Martin Van Creveld, *Supplying War*

In 2014, Russia caught the United States and its European allies flat-footed when it invaded Ukraine's Donbas region and annexed Crimea. Using a combination of cyber, hybrid, and conventional warfare, Russia rapidly achieved its objectives before the United States and its NATO allies could react, underscoring a fundamental time and space challenge the United States faces in responding to any overseas conflict. Exacerbating this challenge is Russia's pursuit of antiaccess/area denial (A2/AD) capabilities consistent with a layered standoff strategy, which aims to challenge U.S. force projection and European theater access.[1] Meanwhile, in the Pacific, China is pursuing an antiaccess strategy similarly designed to exploit U.S. time and distance limitations and counter U.S. maritime and air advantages, calling into question U.S. ability to deny either adversary's objectives in future conflict.[2]

In response to this challenge, the U.S. Army developed the multidomain operations (MDO) concept to mitigate adversarial A2/AD approaches in competition and defeat this strategy in conflict.[3] However, despite MDO's attempt to counter antiaccess strategies, the concept is limited by a sustainment architecture optimized for past conflicts in Afghanistan and Iraq and a dependence on emerging, unproven logistical capabilities to solve inherent logistical challenges. As a result, the United States' ability to achieve objectives in future conflict, consistent with MDO's theory of victory, may be at risk.

To resolve MDO's logistical shortfalls requires a more resilient and effective sustainment architecture capable of reliably sustaining ground forces in conflict within antiaccess environments. As a result, the Army must reexamine both the implementation and design of MDO's concept of support. First, the Army must reassess *how it sustains* ground forces in MDO to reduce risk and ensure success in future conflict. Second, it must reconsider *how it organizes and equips* sustainment forces to better align MDO's concept of support with the character of future war. "More absorbing than the final outcome are the perfection of the tools and the mastery of the components and maneuvers that form part of the undertaking," Fred Iklé wrote in 1971 of the United States' conduct of the Vietnam War.[4] In a similar way, MDO's narrow focus on the tactical and technical requirements required to defeat the antiaccess problem set comes at the expense of logical coherence and logistical feasibility, limiting its ability to enable success in future conflict. To better assess the Army's new operating concept first requires consideration of past military conceptual and technological advancements, subsequent responses, and a clear understanding of how MDO intends to address similar challenges today.

MDO's Historical Parallels

The fundamental problems facing U.S. force projection today, principally of access and freedom of action, are not new. Although its most recent A2/AD incarnation leverages a higher-tech mixture of weaponry including cyber, long-range precision fires, and integrated air defense systems, preventing or disrupting adversarial action has long been a goal in war. Exacerbating this age-old tension between offense and defense is the development of new or emerging technologies, which can disrupt the balance between firepower, mobility, and protection.[5] In turn, this disparity can result in either military stalemate or one side obtaining an overwhelming advantage, prompting a rethinking or adaptation of operational concepts to account for new platforms, tactics, or changing operational environment.

Both the desire for each side to limit an opponent's freedom of action as well as the cyclical nature of firepower enhancement and the survival from that weaponry has played out on the battlefield for centuries.[6] For instance, World War I's infamous deadlock between Entente and Central Powers resulted in the advancement of protection and mobility for

Maj. Bryan J. Quinn, U.S. Army, holds an MS from the University of Mississippi and is a graduate of the College of Naval Command and Staff. He currently serves as an Army strategist in the U.S. European Command J-35.

ground forces that countered the immobility imposed by trench warfare and other defensive tactics that restricted offensive action.[7] Similarly, during the interwar period, the same desire to circumvent enemy defenses drove the United States, Germany, and others to push the boundaries in the air domain, developing airborne capabilities, tactical aircraft, and strategic bombing campaign concepts.[8] These advancements subsequently resulted in the advancement of the radar, antiaircraft weapons, and other defensive capabilities, demonstrating the pendulum swing between offensive and defensive tactics and technology.[9]

Like their early twentieth-century land-force counterparts, the naval fleet also became paralyzed as a result of new offensive technologies including the torpedo and submarine. To regain freedom of action and break the maritime stalemate, Britain developed a concept to penetrate German coastal defenses known as the Baltic Project.[10] In a close parallel to modern doctrinal solutions, Britain planned to seize key German coastal terrain through closely synchronized naval and amphibious operations in the face of a layered defense of coastal artillery, mines, and submarines; an early twentieth-century A2/AD equivalent.[11]

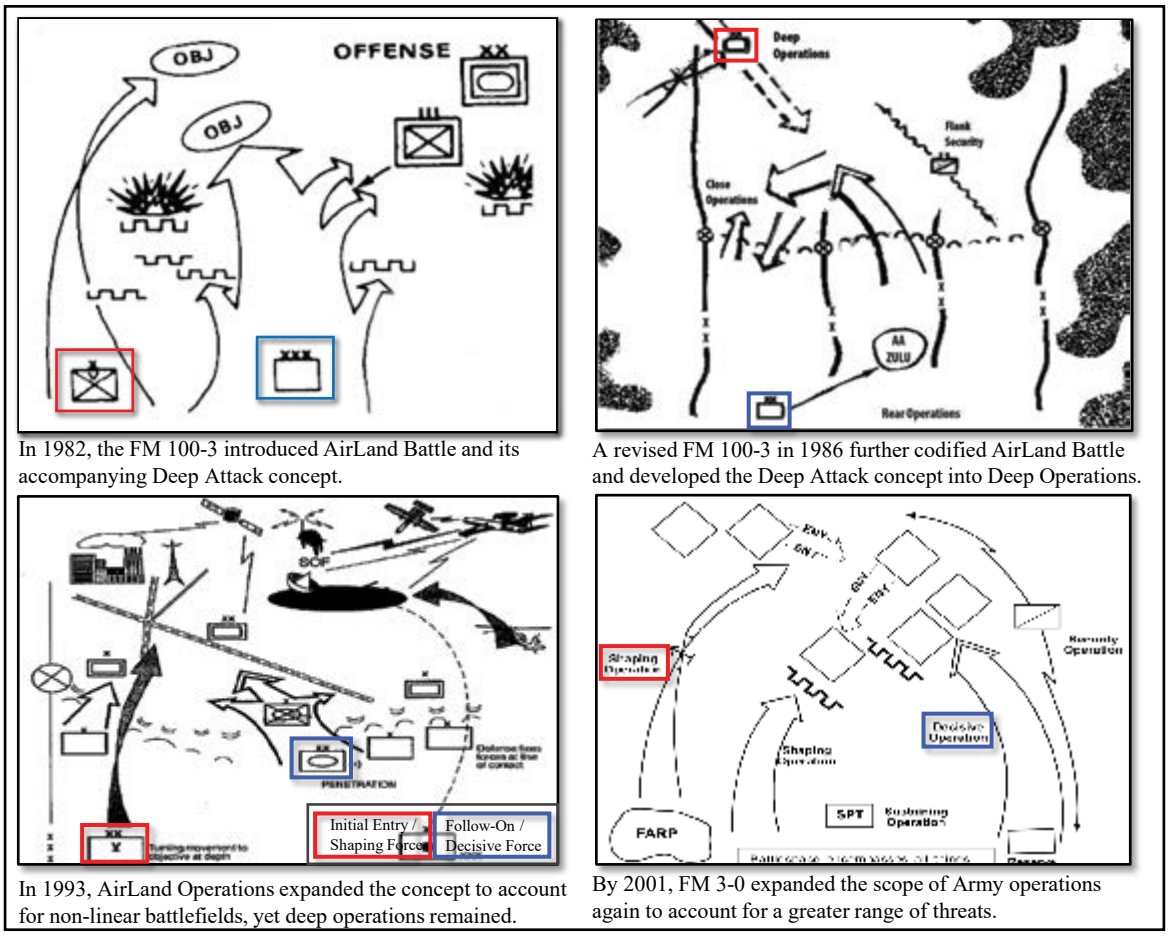
Late in the Cold War, the United States and its NATO allies again found its freedom of action restricted due to Soviet numerical and battlefield geometry superiority. In response, the United States and its allies advanced a new concept known as deep attack.[12] Like its doctrinal predecessors, deep attack leaned on emerging technologies to counter Russian defensive advantages but retained the central tenets of its precursors; employing initial entry forces to gain the initiative but relying on large-scale, follow-on forces to ultimately achieve strategic objectives.[13] Like previous technological and concept advancements, this strategy shift precipitated an imbalance between NATO and Soviet forces requiring Russian reaction.[14] In turn, Russia responded by increasing its antiaccess capability that, precipitated by recent cyber and fires advancements, again demands U.S. offensive adaptation.[15]

As each historical case demonstrates, the cycle of conceptual and technological innovation, driven by the pendulum swing between offensive and defensive tactics, is not unparalleled. While technology may alter conflict's character, its nature remains unchanged. As a result, past solutions can provide an invaluable blueprint for future doctrinal and force design modifications. Regardless of the specific operational or technological challenges of any one evolutionary example, each adheres to a common thread of logic. For example, as demonstrated by figure 1 (on page 131), the United States historically employs expeditionary (initial entry) forces to enable larger, follow-on forces to secure lines of communication and exploit initial success for greater operational objectives.[16] As ground forces today remain similarly restricted in scope, scale, and duration due to logistical limitations, their application should likewise remain consistent. Therefore, the solution to today's antiaccess challenge, while adapting to meet wars changing character, should follow a similar thread of logic as the physics of war, namely time and space, remains largely unchanged.

Sustaining MDO

Like its doctrinal predecessors, MDO seeks to leverage U.S. technological superiority through coordinated cross-domain forces to project power, enable operational reach, and defeat enemy defenses designed to limit U.S. freedom of maneuver.[17] However, while previous concepts employed expeditionary forces as a means to achieve positional advantage or facilitate employment of conventional follow-on forces, expeditionary, or "inside" forces constitute MDO's main effort.[18] Consistent with the MDO concept, once "inside forces" are inserted through a brief window of superiority, these forces undermine an opponent's A2/AD approach by simply operating within its antiaccess environment, thereby defeating an adversary's standoff strategy.[19] While space, cyber, and other joint effects will be necessary in achieving brief superiority over A2/AD systems, this is only a means by which to insert initial ground forces. Notably absent from this theory of victory, however, is consideration of conventional ground-force formations, considered to be infeasible in future conflict consistent with the chief of staff of the Army's *Army Multi-Domain Transformation* white paper.[20] Yet, by excluding follow-on ground forces, not only does MDO diverge from historical precedent, but it also favors innovation and prioritizes technological capability over sustainment feasibility, calling into question the ability for MDO to succeed in conflict.

Despite its rebranding of initial entry forces, MDO's inside force remains subject to the same



In 1982, the FM 100-3 introduced AirLand Battle and its accompanying Deep Attack concept.

A revised FM 100-3 in 1986 further codified AirLand Battle and developed the Deep Attack concept into Deep Operations.

In 1993, AirLand Operations expanded the concept to account for non-linear battlefields, yet deep operations remained.

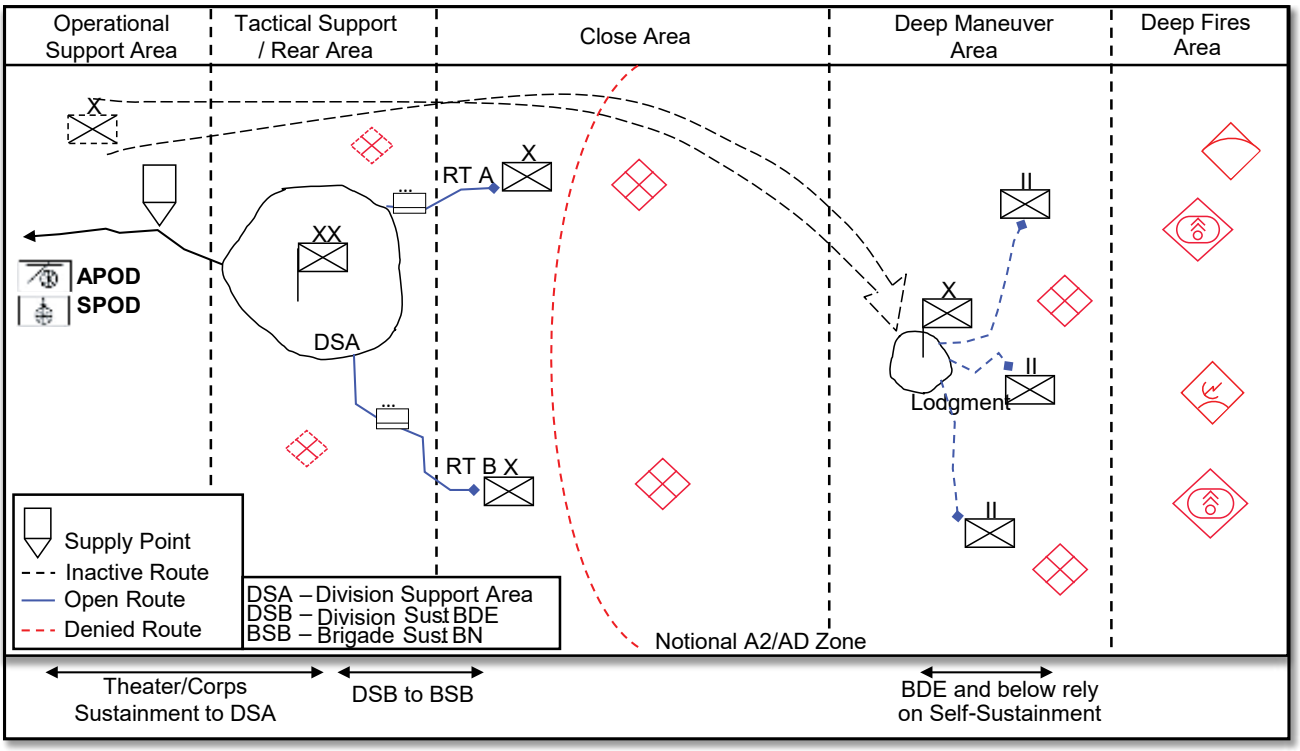
By 2001, FM 3-0 expanded the scope of Army operations again to account for a greater range of threats.

(Figures from Field Manual [FM] 100-5, *Operations* [1982, 1986, and 1993 versions]; and FM 3-0, *Operations* [2001])

Figure 1. Deep Attack 1982; Deep Operations 1986; Deep Operations 1993; Operational Framework in the Offense 2001

logistical and sustainment challenges and culmination risks as any other deep maneuver force. Comparatively, Britain ultimately abandoned its World War I plan to penetrate Germany's coastal defenses, not because of the incredible risk of securing initial lodgment in the face of overwhelming defensive firepower, but because it could not feasibly hold or sustain forces following initial success.[21] Without a credible concept of support, British leadership could not logically link initial operational success to larger military objectives in Europe. MDO faces a similar challenge today. Absent follow-on forces, MDO lacks the ability to secure lines of communication, and, as a result, the feasibility of expanding initial lodgment or exploiting success without a resilient connection to the support area remains in doubt.

To address the challenge of sustaining ground forces in the deep maneuver area without reliable air or ground lines of communication, the Army's Training and Doctrine Command and Army Futures Command developed MDO's functional concept for sustainment, depicted in figure 2 (on page 132). This supporting concept is clear on its solution to MDO's sustainment challenge, principally by employing "precision logistics" that provide a "layered, agile, and responsive sustainment capability necessary to support operations."[22] This capability is subsequently enabled by a "predictive decision support system," a "real-time common operating picture," and "demand reduction" across the force to "lessen delivery requirements by 50%."[23] In short, to solve MDO's logistical challenges, the sustainment warfighting function aims



(Figure by author)

Figure 2. Current MDO Brigade Combat Team Self-Sustainment Model

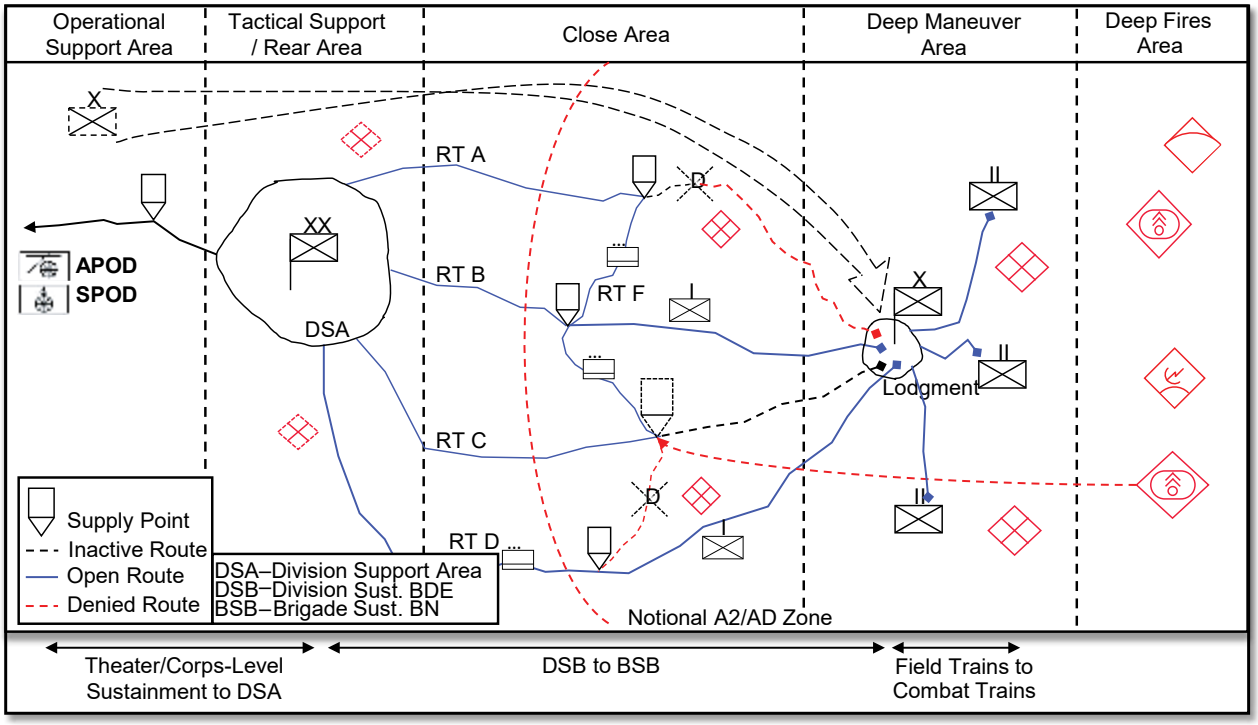
to reduce demand by minimizing uncertainty, an elusive and ambitious goal in warfare as well as commercial logistics throughout history. However, while these aspirational capabilities may drive sustainment toward a more efficient solution, the future operating environment and adversarial threat requires a sustainment architecture that prioritizes effectiveness and resiliency over efficiency.

Across other warfighting functions, supporting concepts similarly envision the sustainment of "cross-domain maneuver [through] reduced logistic demands, organic power generation, autonomous resupply, and additive manufacturing."[24] However, none of these solutions are proven at scale, and technology alone is not a strategy. While the ability of combat units to self-sustain is an ambitious long-term goal, relying on the scalability and reliability of unproven emerging technologies is equivalent to wishing the problem away. For the foreseeable future, combat units will continue to be sustained the way they have always been, through the physical movement of large amounts of supplies primarily along ground lines. Without solving the challenge of credibly sustaining operations into denied, hostile territory, U.S. forces cannot begin to challenge an adversary's A2/AD network, fundamental to MDO's theory of victory.

Sustainment Reassessment

Ultimately, without a feasible concept of support, MDO remains limited in its ability to deter adversaries in competition and enable combat forces in conflict. As a result, MDO must resolve two central challenges. First, an overreliance on unproven technology to solve sustainment challenges places the sustainment of MDO forces in doubt. Second, a dependence on a legacy distribution network designed to support previous counterinsurgency and counterterrorism missions is ill-equipped for the future fight. To address these challenges, MDO's concept of support requires greater effectiveness, driving requirements for a more resilient and redundant sustainment network, and a sustainment organization better postured to enable success in line with the expected character of war.

Operations can be sustained in one of two ways; either through self-sustainment or over a line of communication.[25] While MDO currently relies on the former,



(Figure by author)

Figure 3. Proposed MDO Concept of Support and Theater Framework

this method can only sustain combat operations for as long as a unit's basic load allows, usually no more than a few days before culmination.[26] Although captured sustenance, foraging, and technological advancements may extend endurance, limitations of many classes of supply as well as maintenance of proposed advanced capabilities ultimately limit how long a unit can operate independently. Moreover, enemy antiaccess weapons preclude large-scale aerial resupply commonly relied on in previous conflicts. As a result, MDO's deep maneuver forces must sustain across ground lines extending from the rear area to the deep maneuver area. Without this linkage, expeditionary forces are isolated and place at risk the ability to achieve strategic objectives.

Consistent with the future operational environment, MDO's concept of support must provide a more resilient and redundant sustainment architecture. To achieve this resiliency, supply lines must be shortened through additional sustainment nodes and the number of lines must be increased to allow for dynamic redirection and prevent disruption. Future formations can no longer rely on a handful of large main supply routes to link combat forces to the support area. Just as recent global supply chain disruptions led to a reassessment of the balance between effectiveness and efficiency, threats within the operational environment must drive that same balance for logistics in future conflict.

To solve logistical challenges, MDO's concept of support borrows heavily from recent commercial and private sector trends, relying on supply chain innovation and efficiency enabled by emerging technologies. However, fueled partially by massive global disruptions over the past year, it excludes other more recent and applicable developments. For example, commercial vendors have recently shifted from a reliance on large regional fulfillment centers, popularized by Amazon and others, to a last-mile delivery strategy.[27] This approach results in a proliferation of smaller logistics nodes to link the vendor and its supply chain to the consumer.[28] By redirecting efforts toward smaller terminals and delivery stations that store limited high-demand supplies and dispatch them directly to the consumer, vendors reduce both delivery time and supply chain disruption.[29]

Likewise, to ensure the sustainment of dispersed inside forces, a similar approach can be applied to

in future conflict to reduce the risk of large supply nodes and ground-line disruptions. By expanding the number of sustainment nodes and supply lines from the rear support area to the deep area, MDO can ensure a more resilient and responsive connection between ground forces and the sustainment network, represented in figure 3 (on page 133). This approach enables sustainment flexibility by shortening the length of ground lines of communication, accelerating sustainment responsiveness, and by allowing routes and nodes to dynamically open and close as they are disrupted or denied, thereby increasing the sustainment architecture's resiliency and redundancy. While dispersing formations along multiple routes may result in less efficiency, greater effectiveness can increase resilience and reduce risk resulting in a more robust sustainment network.

Consistent with the cyclical nature of military advancement, the concept of supporting expeditionary forces through additional, intermediary sustainment nodes already exists in both Army and joint doctrine. The intermediate staging base (ISB) is a logistics node central to sustaining joint forcible entry operations by providing a "temporary location used for staging forces, sustainment, and/or extraction into and out of an operational area."[30] Critical for sustaining inside forces, this sustainment node increases points of entry and ensures sustainment capacity is kept directly out of the area of operations but close enough for immediate support, thereby increasing redundancy and reducing risk to sustainment forces.[31] Even current doctrine acknowledges the importance of intermediary logistical nodes, stating that the ability to "maintain continued pressure in the face of [A2/AD] is reduced significantly" without the ISB.[32] Likewise, integrating an ISB-like capability into MDO's concept of support can similarly enable the persistent sustainment of ground forces from the tactical support area, thereby increasing the redundancy and resiliency of MDO's sustainment architecture. As a result, MDO's sustainment solution may already exist, requiring small modification to existing concepts developed over decades versus the current attempt to revolutionize military sustainment.

> As a result of two decades of conflict in Iraq and Afghanistan, the Army incrementally reduced its sustainment force structure, favoring efficiency at the expense of effectiveness.

Second, to sustain MDO forces, the Army must reassess how sustainment units are organized and equipped to better match the expected character of war. As a result of two decades of conflict in Iraq and Afghanistan, the Army incrementally reduced its sustainment force structure, favoring efficiency at the expense of effectiveness.[33] As a result, the structure of organic tactical-level, as well as separate, task-organized sustainment units are the result of an organizational evolution in response to counterinsurgency and contingency operations. A conflict where the United States maintained a sizable advantage against its adversary relied heavily on contracted support down to the tactical level and operated from static locations. Yet, the character of the war must determine the logistics response.[34] Therefore, as the operational environment and adversarial threat shifts, Army senior leaders must also reassess its current sustainment force structure to optimize for MDO and the future threat environment.

Outside of MDO's current force structure changes, limited to the multidomain task force and subsequent intel, cyber, electronic warfare, and space units, the Army largely intends to fight the next war with the force it built for the last one. That is, most requirements identified within the MDO concept are modernization, innovation, and technologically based capabilities intended to amplify current capabilities and old tactics. Yet, the force structure across warfighting functions, including sustainment, is largely unchanged from the modular brigade combat team (BCT)-centric structure developed over the past twenty years. Retired

Soldiers from the 230th Sustainment Brigade work together to organize critical supplies required to support all Tennessee Guardsmen in Fort Hood, Texas, as they conduct an eXportable Combat Training Capability exercise 19 July 2021. (Photo by Pfc. Everett Babbitt, U.S. Army)

Brig. Gen. Huba Wass de Czege notes as much in his 2018 response to Gen. David Perkins, then commanding general of the U.S. Army Training and Doctrine Command, on MDO's credibility, arguing that the concept focused too narrowly on technological shortfalls of current Army structure and failed to question its suitability in a different context.[35] Consequently, the Army must rebalance its sustainment architecture to favor the effectiveness required of MDO over the efficiencies of previous conflicts.

For example, a standard BCT's brigade support battalion facilitates supply distributions from the brigade to its battalions. Yet, this organization maintains only a single distribution company and a single transportation platoon to complete the sustainment mission.[36] Likewise, an Army division's organic sustainment, responsible for sustaining subordinate brigades from the division support area through the close area and into the deep maneuver area, is made up of a single division support brigade. Within that organization, a single division service and support battalion and truck company maintain sole responsibility for division sustainment.[37] Consequently, neither the BCT nor the division is currently equipped with the appropriate sustainment architecture to sustain a future large-scale or MDO envisioned fight.

Likewise, to support MDO's dispersed and independent operating concept, tactical-level support units, including forward support companies and brigade support battalions, must also be equipped to operate in a more distributed environment. Future sustainment operations will require hardened communications, robust maneuver support capability, air defense, and other protection capabilities to operate across deep maneuver and support areas. Therefore, MDO must also emphasize greater organic protection to harden the sustainment structure against enemy disruption. While protection assets can be task-organized to sustainment units, MDO's sustainment architecture must bias toward a purpose-built solution consistent with the expected threat and operating environment. As a result, integrating these platforms

Soldiers of the 3rd U.S. Infantry Regiment participate in a Joint Tactical Aerial Resupply Vehicle (JTARV) exercise on Fort A. P. Hill, Virginia, 22 September 2017. During the exercise, the JTARV demonstrated its potential for soldiers on the battlefield to execute autonomous resupply. However, the JTARV is significantly restricted by range, capacity, and signature. (Photo by Pvt. Gabriel Silva, U.S. Army)

more closely with support units from a conceptual level can increase effectiveness over ad hoc, task-organized units in a future environment demanding greater synchronization and integration.

Ultimately, an increase in sustainment redundancy and resiliency to create a more robust distribution network in support of MDO and the future fight comes at a cost. As adversarial A2/AD approaches force longer, more at-risk lines of communication requiring greater logistical redundancy, sustainment formations in turn demand more equipment, resulting in greater maintenance, sustainment, and manpower costs. Simply, MDO and the future operating environment demand an increase in the ratio between combat, support, and protection assets. Even Army Futures Command recognizes this dilemma, stating that "without significant technological advancement and a reduction in demand, BCT requirements will result in a significant reinvestment in sustainment force structure and capacity."[38] In line with this concession, to enable a more effective and resilient sustainment architecture, the Army must optimize sustainment forces to operate independently and distributed consistent with the expected environment.

Concluding Remarks

Following the 2022 release of Field Manual 3-0, *Operations*, MDO replaced unified land operations as the Army's operating concept. By elevating MDO into doctrine, the Army has ensured that the concept will drive programs, force structure, force design, and doctrine for the foreseeable future. However, before the tenets of MDO can be implemented and its ambitions fully realized, the Army must reassess how it organizes logistics units to best sustain maneuver forces in future conflict. By emphasizing technological means over policy ends, unlinked to a clear idea of how to sustain ground forces or achieve greater strategic objectives, MDO's inside forces become an end in of themselves, and gaining access, strategy.

As in past conflicts, technology will play a significant role in defining the character of the next one and

shape how units are employed in battle. For MDO, technologies that reduce unit signature or speed transition toward greater autonomy while reducing demand can mitigate risk and ease sustainment challenges. However, while technological solutions may present some opportunities to alleviate sustainment and logistical challenges, technology alone cannot substitute for strategy. Likewise, reliance on the technological overmatch of expeditionary forces and the promise of future technology alone risks failure. As a result, how much emerging technology can offset sustainment requirements in future conflict remains in question.

If the point of strategy is to cast a shadow on the enemy's decision-making and strategic calculus, then any operating concept must create doubt in the adversary's mind through a logical and credible theory of victory that calls into question the enemy's object.[39] Yet, without a realistic appreciation of the logistical requirement necessary to conduct operations in line with its new operating concept, the Army's solution to its time and distance problem is incomplete. To correct this deficiency, senior leaders must increase the resiliency and redundancy of MDO's sustainment architecture by reexamining *how to sustain* expeditionary forces and *how to organize and equip* sustainment units consistent with the character of future war. Failure to address these flaws and acknowledge the inseparable nature of tactics and logistics may ultimately result in the inability of U.S. ground forces to achieve their purpose in future conflict.[40] ■

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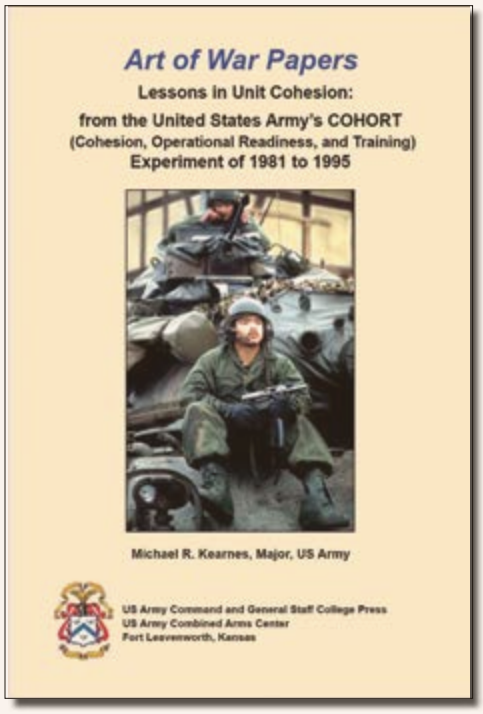

Lessons in Unit Cohesion: From the United States Army's COHORT (Cohesion, Operational Readiness, and Training) Experiment of 1981 to 1995

Maj. Michael R. Kearnes, U.S. Army

In 1981, the U.S. Army experimented with its personnel management philosophy to examine the benefits of a unit-based system over an individual system. In this Art of War series contribution, Maj. Michael R. Kearnes examines the historical background of personnel management from World War II to the Vietnam War, leading up to the COHORT experiment of the 1980s and 1990s. COHORT aimed to build cohesion via stability at the company and battalion levels on a three-year life cycle. Kearnes concludes that personnel stability is a prerequisite to cohesion and unit effectiveness, and that the personnel system ought to focus on building unit cohesion through personnel stability and account for individual concerns when possible in both peace and war.

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Recently arrived French soldiers scan the horizon on 28 February 2013 in search of jihadi insurgent forces operating in Mali. On 11 January 2013, at the request of the Malian government and the United Nations, France sent troops into Mali as part of Operation Serval to stop the advance of jihadist groups toward southern Mali, protect the Malian state, and facilitate the implementation of international decisions. (Photo courtesy of the Defense Communication and Audiovisual Production Establishment)

Looking Outward

Lessons in Security Force Assistance from the French Experience in Africa

Maj. Daniel K. Dillenback, U.S. Army

As the United States reenters an era of great power competition, the ability to develop and maintain a strong network of partners is critical to achieving national interests. Since the Army is the only service with the expertise and sustainment to develop foreign security forces (FSF) on a large scale, Army leaders have a vested interest in ensuring that the service is prepared to develop partner militaries that are competent, capable, committed, and confident.[1] However, experiences with advising and training partnered militaries have varied greatly and have not been aggregated into a reliable model for success. This article presents a case study and its findings after a nine-month research project studying FSF development.[2] The study aimed to capitalize on international experience with training partnered militaries in developing nations by examining non-U.S. examples of nations training and developing partnered security forces. This article summarizes and presents the significant findings from French operations in the Sahel.

When Operation Serval began in January 2013, its objectives were entirely enemy focused. Islamist forces had seized the Malian city of Konna and had placed themselves within striking distance of the capital Bamako.[3] Although France's policy was to avoid unilateral intervention, it decided not to wait for the European Community of West African States to assemble a multinational force. Supported by Chad, France launched an offensive operation into Mali to achieve President François Hollande's stated military objectives to stop the terrorist aggression, secure Mali, in which there are many French citizens, and permit Mali to recover its territorial integrity.[4] France initially saw its intervention as an emergency military stop gap to prevent the fall of the Malian government and give the European Community of West African States time to assemble a force sufficient to execute further operations.[5] But similar to America's invasion of Iraq, France was quickly victorious and found itself unexpectedly thrust into large-scale, long-term FSF development.

In 2014, France consolidated its numerous operations under one command. The new operation, called Barkhane, sought to address the cross-border dimension of the terrorist threat, and focus military efforts on partnership.[6] In a 2020 English-language press release, the French Armed Forces Headquarters stated that Operation Barkhane's approach was meant to support partner nations' armed forces in the Sahel-Saharan Strip, strengthen coordination between international military forces, and prevent the reestablishment of safe havens for terrorists in the region.[7] Since 2014, France has learned and adapted new theories and best practices for what they call *le partenariat militaire opérationnel* (operational military partnership). This concept was developed through the French army's Land Center for Operational Military Partnership (CPMO). The CPMO's study and work adapted its already expeditionary military culture and sees itself as uniquely suited for expeditionary advising.

This case, selected for its similarity to recent American experience, studied the modern application of French operational military partnership in and around the Sahel region of Africa. The French army is similarly organized, shares similar values, and is an enduring North Atlantic Treaty Organization ally. Research questions separated findings into two categories: actions that lead to tactical success and actions that contribute to strategic success. Through a study of the tactical and strategic levels of war, the researcher hoped to develop a better understanding of the operational level, whose core responsibility is to link tactical actions with strategic objectives. Throughout Operations Serval and Barkhane, language training and risk acceptance significantly contributed to the tactical success of FSF development, and that information management contributed to strategic success.

A Brief History: Sixty Years in Six Hundred Words

France has a long and complex relationship with Africa that directly impacts its operations today. After

Maj. Daniel Dillenback, U.S. Army, is a student at Harvard University. He holds a BS from Boston University, an MS from Missouri University of Science and Technology, and an MMAS from the Command and General Staff College. He is fluent in English, French, and Spanish, and translated most of the French documents directly. He served as a platoon leader, company commander, and battalion S-3 with the 10th Mountain Division before serving as a strategic planner and speechwriter to the commanding general for the Combined Arms Center at Fort Leavenworth, Kansas.

the end of World War II, the French Empire contained approximately 1.8 million square miles consisting of present-day Ivory Coast, Benin, Mali, Guinea, Mauritania, Niger, Senegal, Burkina Faso, Togo, and Nigeria.[8] As France withdrew from Africa during the era of decolonization, it maintained and established formal diplomatic, economic, and military ties, creating a network of close relations that is often referred to as *françafrique*.[9] President Félix Houphouët-Boigny of the Ivory Coast first coined the term to describe his country's close diplomatic ties with France.[10] However, it has since become controversial and is used to criticize perceived corrupt and surreptitious activities of France and various African nations.[11] Regardless of the definition of the term, this history and controversy has continued to shape and color France's military actions in the Sahel and various perceptions thereof.

The recent history of the French military in the Sahel is dominated by two major operations: Serval, the roughly eighteen-month operation to defeat Islamic jihadist militants in northern Mali and its successor, Barkhane. Operation Serval followed a request from the Malian government and a United Nations Security Council resolution. It consisted primarily of French and Chadian operations against jihadists in Northern Mali.[12] In 2014, Operation Barkhane consolidated those efforts with numerous other missions in the Sahel region to enable synchronization, address the cross-border element of the threat, and shift the focus to FSF development.[13] Although France had a long and complex history of working with African countries postcolonialism, Operation Serval marked the beginning of this study due to the lessons learned and shift in military objectives from defeat of jihadist forces to FSF development.

There were several examples of French FSF development in Africa prior to Operation Serval. The most successful and noteworthy of which was France's assistance to Chad during the last major rebel attacks in 2008 and 2009.[14] After successful military intervention, during a period of relative peace, France supported a consolidation of Chadian military forces under Idriss Déby. Researcher Christopher Griffin explained the relationship in his article for *Small Wars and Insurgencies*:

> France is interested in Chad for its central location, which allows the French Army to maneuver between its other bases on the continent and respond quickly to crises. The military assistance treaty with Chad (there is no mutual defense treaty) provides for French military personnel in Chadian uniforms to train the Chadian Army. France also committed to provide military equipment (both free and paid), maintenance for that equipment, and logistical support. In exchange, the Chadian government gives France the right to use its airspace and its airfields for military and civil flights. Most of the military assistance treaties with the other Francophone countries have virtually the same terms.[15]

Griffin and others argue that France's relationship with Chad has been the most successful of francophone nations. Although Chad still faces domestic challenges with alleged authoritarianism and human rights abuses, it has become undeniably a regional power.[16] In fact, Chad was the only African nation that was both willing and able to support France in combat during Operation Serval substantively.[17] However, it is difficult to argue that this partnership will continue along a similar trajectory since Déby's death in April 2021.[18] Thus the French military had some mixed success in developing partnered militaries prior to Operation Serval; their key strength was the long history between France and North Africa, but the major weakness was the colonial origins of those same relationships.

What Leads to Tactical Success?

The purpose of this research question was to identify practices and advantages that aid advising a partner nation at the tactical level of war. The researcher expected to find individual "dos and don'ts" as are often presented in cultural or advising training in the U.S. Army. However, actual findings were more nuanced but show a demonstrated advantage in both cases.

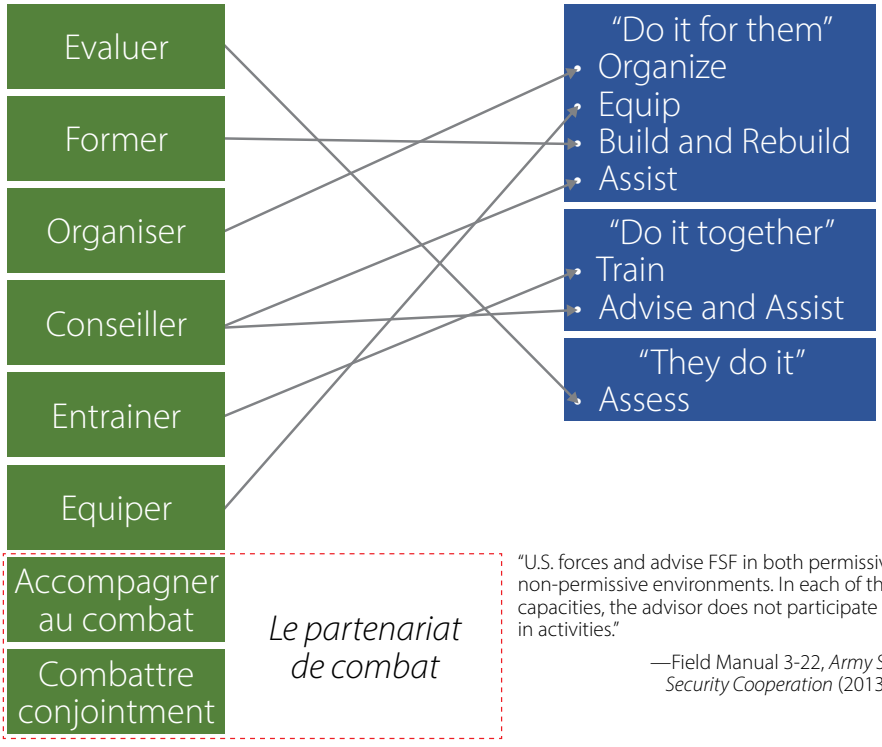
Shared language and culture. Shared language increases interoperability at the most fundamental level. The ability of two soldiers to communicate with each other is a key advantage when developing FSF. In concrete terms, the French were much more capable of modifying and adapting their techniques to the situation on the ground because they could expect any of their soldiers to advise effectively. Shared language also increases the propensity for individual advisors to learn and become more fluent in the culture of their partner nation. If advising and training are the practice

French soldiers of the 126th Infantry Regiment and Malian soldiers talk with a local man in Southern Mali, 17 March 2016. (Photo courtesy of Wikimedia Commons)

of transferring knowledge and experience from one person to the other, language is the foundation of that process. This shared language is both a cause and product of French partnership and operations in Africa. Colonialism led to the spread of the French language, which is currently an official language of nineteen countries on the continent. French commanders as well as individual French soldiers can communicate with their counterparts with relative ease.

In addition, French commanders can leverage this long history with their counterparts to achieve a deep understanding of the operational environment as well as their partners. This understanding has allowed them to train and advise at the lowest possible levels. In some cases, individual soldiers were attached to French squads to learn, train, and fight alongside enlisted French soldiers.[19] In fact, this shared language is the fundamental difference between French FSF development and that of the United States or United Kingdom. France distinguishes itself from the United States and United Kingdom specifically by expecting every and any military unit to be capable of advising instead of creating specialized units like the security force assistance (SFA) brigades.[20] Whether it is the expectation of all units to advise partner forces, the expeditionary culture or the colonial history between France and Africa, none of the concepts developed by the CPMO would be possible if not for the shared language between the French and their partner security forces.

In addition to language, France's institutional and cultural familiarity with its partners benefitted its advising efforts. The French have an enduring predisposition to cultural understanding in Africa. While difficult to quantify, it was articulated in both military and nonmilitary sources using terms such as the "French touch," "*savoir-faire*" (knowing how to do, expertise), and "*savoir-être*" (knowing how to be, emotional intelligence).[21] Most sources agree that this shared culture is chiefly the result of the long colonial history of France in West Africa. The French



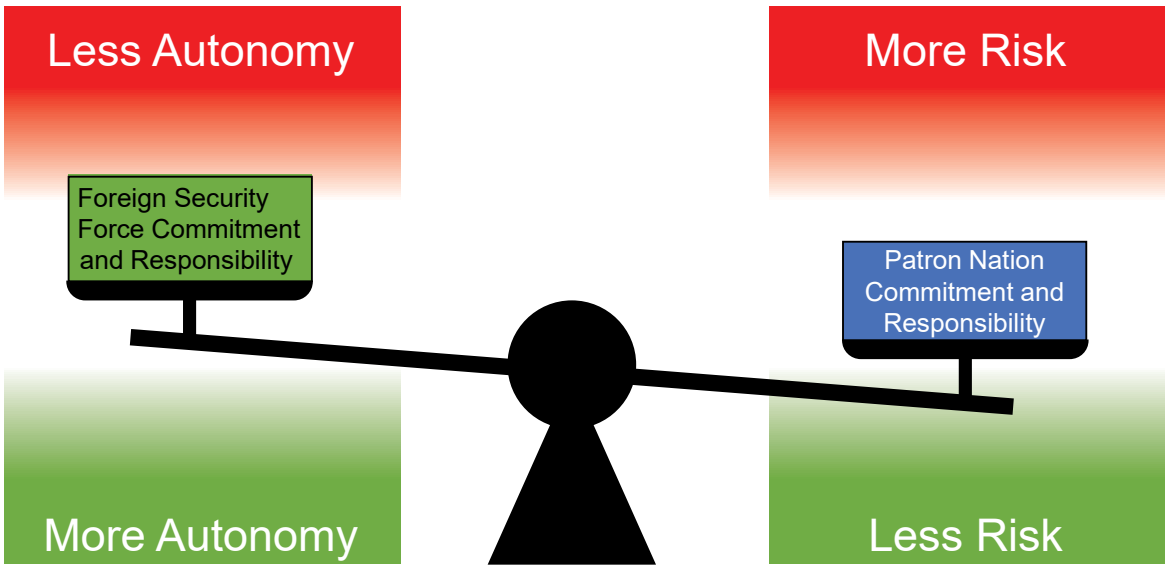
(Figure by the author)

Figure 1. Comparison of France's Partenariat Militaire Opérationnel and U.S. Security Force Assistance

established their first trading posts in Senegal in 1624, and in the following era, French language and culture spread throughout their colonial holdings. While this predisposition is defined and framed in cultural terms, the formal agreements and relations developed during and following decolonization in the twentieth century are the rigid scaffolding of France's understanding of the operational environment. These ties, though often controversial due to its origin in colonialism and the slave trade, have remained relatively unbroken for over two hundred years. The enduring relationships have led to an institutional understanding and expertise in the region. All French army units have some experience as they all, at one point, rotated through Africa on four-month "short duration missions." The ubiquitous nature of these operations has contributed to the growth of France's expeditionary mindset.[22]

Risk acceptance. The French take great pride in their willingness to "fight alongside" their partners. This concept requires an increased tolerance for risk. French doctrine codifies this expectation for *partenariat de combat* (combat partnership) and carries with it an additional burden and responsibility on the advisor to make sure that their partner is sufficiently ready for operations. At the tactical level, the advisor with "skin in the game" simultaneously ensures that they trust their partners and builds legitimacy of both the partnered force and the patron force. On the contrary, the Soviet-Afghan war, reminiscent of the U.S. experience in Afghanistan and Iraq, advising and "partnership" consisted of a cycle of not trusting the host nation, taking additional tactical responsibility, causing the FSF to rely more on the patron nation, reducing their own independence and competence. During this study, it was critical to observe that risk acceptance went beyond the normal risks of combat. To develop a security force, the commander must knowingly and willingly put his soldiers and unit at greater risk by executing operations alongside their partners instead of executing the mission themselves.

Sharing tactical risk is the cornerstone of France's Operational Military Partnership concept. As illustrated in the figure 1, the key difference between the French concept and American SFA doctrine is



(Figure by author)

Figure 2. Balancing the Advisor Risk and Partner Autonomy

partenariat de combat consisting of accompaniment and joint combat operations.[23] To underline the importance of sharing this risk, the CPMO states that joint combat operations "gets two units on the same footing even if they are of different nationalities to design, plan and conduct operations together. This type of commitment requires sharing the same risks in combat as in cantonment."[24] Joint combat operations is the only part of CPMO that is in direct contradiction to U.S. doctrine, which states that advisors work in permissive and nonpermissive environments but generally do not participate in combat activities with partners.[25] Combat partnership represents an institutional acceptance of the fact that an advisor must be willing to put themselves into harm's way for a shared goal in order to build the confidence and capability of the FSF. In the French model, this does not just mean that the advisor walks along with the partnered commander on a partner-led mission. This means that they fully integrate the two units at some echelon and even, in some cases, have smaller French units support larger FSF units in combat. Sharing the risks while putting partnered leaders in charge provides a sense of ownership and legitimacy to the security force seemingly more effective than simply putting the partner out front.

However, the CPMO also recognized that risk acceptance must be balanced (see figure 2). While thoroughly integrating with partnered forces and sharing risks may be helpful in establishing trust between advisers and their partners, it has a cost in the form of FSF autonomy. The CPMO stated "there is thus a real choice to make in terms of the objectives to pursue: a stronger French investment produces a less autonomous partner."[26] With this fact in mind, the advisor should carefully plan and adjust the organization of the advising effort to ensure that the partner can learn and develop with the goal of operating independently. This concept is similarly applied in multiple examples throughout history without necessarily a tacit acknowledgement of the relationship between investment and autonomy. The Soviets acknowledged it by announcing the Afghanization campaign and slow withdrawal. Similarly, the CPMO compared its efforts in the Sahel to the contemporary war in Afghanistan's approach of "ANA [Afghan National Army] First, ANA led, ANA only."[27] Though this is clearly not a newly invented

concept, it draws a theoretical model that can be used when planning FSF development efforts in the future.

What Contributes to Strategic Success?

This research question is conceptually simple but proved complex and nuanced. The most significant challenge, and in fact, the core resistance to this research from academics, was the concept of strategic success and strategic failure. There can be no single answer as to what constitutes strategic success because it creates multiple questions: Whose success? If one partner is successful but the other is not, is that still success? How long must success last to be still considered success? This article does not seek to address this concern here, so it is limited to presenting an observation of the contrapositive. One aspect of the French case clearly hindered their ability to succeed at the strategic level.

Countering the "neocolonialism" narrative. France was unable to counter the persistent narrative from its critics that French involvement in the Sahel was nothing more than an attempt to maintain its colonial-era dominance, a viewpoint commonly referred to as "neocolonialism." The United States faced a similar challenge during the Iraq war when critics rallied around the narrative that the United States was attempting to steal Iraq's oil. Mitigating counternarratives is a challenge for democracies operating in the modern information environment. Regardless of motives, military objectives, or conduct of operations, it can be safely assumed that any attempt at developing a partnered FSF will face some counternarrative. These information campaigns can degrade public support for the mission and ultimately lead to its unsatisfactory end. This challenge continues to be an area of study and emphasis with the development of the information domain concept in U.S. Army doctrine and the growth of information operations as a discipline; however, there is no short-term solution at the time of this study.

The modern challenge of managing information is one that constantly grows and changes. With so many individuals and interest groups having the same access to information and ability to affect the information environment, major military powers face a challenge that may yet be insurmountable. Critics pointed primarily to France's colonial past and argued a neocolonialism narrative that significantly impacted the popular perception of the French military's presence. Although France made consistent, adequate attempts to manage the information surrounding its operations, it was never able to overcome this narrative or the general distrust for European or "Western" powers that was omnipresent in the background of Operations Serval and Barkhane.

> "Information campaigns can degrade public support for the mission and ultimately lead to its unsatisfactory end."

France's colonial history and the concept of françafrique negatively shaped the perceptions of its efforts on the continent.[28] It was beyond the scope of this research project to determine exactly how this history affected tactical and strategic success. However, Françafrique and suspicions surrounding French intentions were prominent in media and professional writing, shaping both the domestic and international view of French action.[29]

Domestically, French involvement in overseas military action, including in the Sahel, shaped the presidential election of 2017, after which President Emmanuel Macron sought to repair Françafrique and reset Franco-African relations.[30] As the first French head of state born after France's African colonies achieved independence, Macron was seen by many as representative of a new generation dedicated to rebuilding relations with African nations on an equal basis.[31] This understanding and rhetorical framework came to a head when Macron announced the end of Operation Barkhane on 17 February 2022.[32] Critical voices have

framed this as a response to both the looming French presidential elections as well as growing criticism of the French presence from African youth, who often claim that promises of an end to françafrique has turned into a mere ritual.[33]

This research provided an insight into the complex backdrop of French FSF development in the Sahel. Tactical commanders and advisors may not have been burdened by the greater history of French colonialism while working with their counterparts, but this history shaped the perception of both the French and partner-nation security forces as they operated. Celeste Hicks, an American journalist living in Mali, gave a firsthand account of popular perception of Operation Serval in an article for the *International Journal of Francophone Studies* that provides a glimpse into the psyche of the Malian citizens.

> With the launch of Operation Serval in 2013, this gradual process of drifting apart was seemingly turned on its head. Here was a formerly proud independent nation that had had an often difficult postcolonial relationship with France admitting that it was completely unable to secure its own territory. However, as the initial success of Serval became apparent and the relief died down, many Malians began to re-examine the relationship with France and began to conclude that in fact the two countries were as interdependent as they had ever been. Important questions began to be raised about just how far Mali has been able to travel since independence, and whether it was really a sovereign state. In fact there were many voices in the country—at first drowned out by the popular clamour [*sic*] for some kind of rescue mission from the Islamists—who believed that the decision to call in France in fact represented a deep humiliation.[34]

This observation comes from a moment in time prior to Operation Barkhane, but it is lucid and universal enough that it represents the underlying tone of popular perception across many Francophone nations throughout the last twenty years. Many other sources, journal articles, and news interviews studied throughout this project espoused similar concerns, anxieties, and cynicism of the French presence. This backdrop of popular perception on the ground may have been less apparent at the tactical level but contributed heavily to shaping the political will of France and ultimately contributed to the end of Operation Barkhane. As Barkhane ends and more time passes, this topic warrants further research into the effects of the neocolonialism narrative on popular perceptions of France and local governments.

Ironically, this same colonial history benefitted French operations, most notably in the use of a common language. French politicians, soldiers, and news outlets were often able to communicate directly with their African counterparts. In addition, many African journals, published in French, could appeal directly to French politicians or citizens, shaping the international discourse on the subject. As evidenced by the end of Operation Barkhane, shared language does not guarantee successful information management or popular support. However, common language allows French military and diplomatic forces to communicate directly with the citizens of partnered nations, increasing overall discourse.

Conclusion and Implications

This study sought to inform future strategic decisions regarding the definition, role, and execution of SFA by the United States. SFA is a piece of security cooperation in developing and sustaining strategic partnerships with foreign nations that will remain critical to strengthening the post-World War II international order. Unfortunately, the U.S. Army has limited and mixed experience in developing FSF ending most recently in the fall of the Afghan government to the Taliban in 2021. The purpose of this research was to identify lessons learned and synthesize them into recommendations by asking the following question: How can the U.S. Army develop partnered militaries to ensure both enduring military success and security partnership? To answer this question, the research explored programs, practices, and activities that contributed to or detracted from the tactical and strategic success of FSF development.

The research determined that key programs, practices, and activities to help achieve tactical success included emphasis on shared language prior to engagement in FSF development, and a willingness to accept tactical risk from advising commanders to assess their counterparts properly and develop a lasting relationship. Though

never guaranteed, clearly defining mission objectives ahead of time and eliminating scope creep or adjustment to those objectives, planning for FSF development deliberately as a part of any major operation, and safeguarding long-term national will enables strategic success.

The 2021 *Interim National Security Strategic Guidance* recognized the imperative of building partnerships outside of the United States' core allies to achieve national interests.[35] This understanding permeated the 2018 *National Defense Strategy*'s strategic approach and is unlikely to change in the unclassified 2022 publication.[36] SFA is a critical part of security cooperation in developing and sustaining these partnerships with developing nations. However, the United States has limited experience in successfully developing FSF and cannot develop this capability through trial and error. ■

Notes

1. Joint Publication 3-22, *Foreign Internal Defense* (Washington, DC: U.S. Government Publishing Office [GPO], 2021), 4-1.

2. This is a nondoctrinal term necessary for this research. When comparing doctrine and activities across nations, there were several incongruencies in concepts. Foreign security force (FSF) development is meant to describe all activities, tasks, and operations with the purpose of building a partnered FSF capacity and capability. This may include the core tasks of security force assistance (SFA), *partenariat militaire opérationnel* (operational military partnership), and professional military education programs such as establishing schools for an FSF. For the purposes of this research, using doctrinal terms such as SFA, foreign internal defense, or professional military education would be insufficient in describing the range of activities in the study.

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6. "Press Pack: Operation Barkhane," Ministère des Armées [Ministry of the Armed Forces], accessed 20 October 2021, https://www.defense.gouv.fr/english/content/download/577214/9871585/20200212_NP_EMA%20CABCOM_DP%.20BARKHANE_EN.pdf.

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15. Griffin, "Operation Barkhane and Boko Haram," 903.

16. "Rapport d'Information Fait au Nom de la Commission des Affaires Étrangères, de la Défense et des Forces Armées par le Groupe de Travail 'Sahel'" [Information report on behalf of the Committee on Foreign Affairs, Defense and the Armed Forces, by the 'Sahel' working group], trans. Daniel Dillenback, Droit des Militaires, 18 August 2013, accessed 4 August 2022, https://www.droitdesmilitaires.fr/26623.

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18. Marielle Debos, "Chad's President Lived and Died by the Gun. Will the Country Shift Away from Militarized Rule?," *Washington Post* (website), 7 May 2021, accessed 11 March 2022, https://www.washingtonpost.com/politics/2021/05/07/chads-president-lived-died-by-gun-will-country-shift-away-militarized-rule/.

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23. CPMO, *Partenariat de Combat*, 4.

24. Ibid.

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Military Review

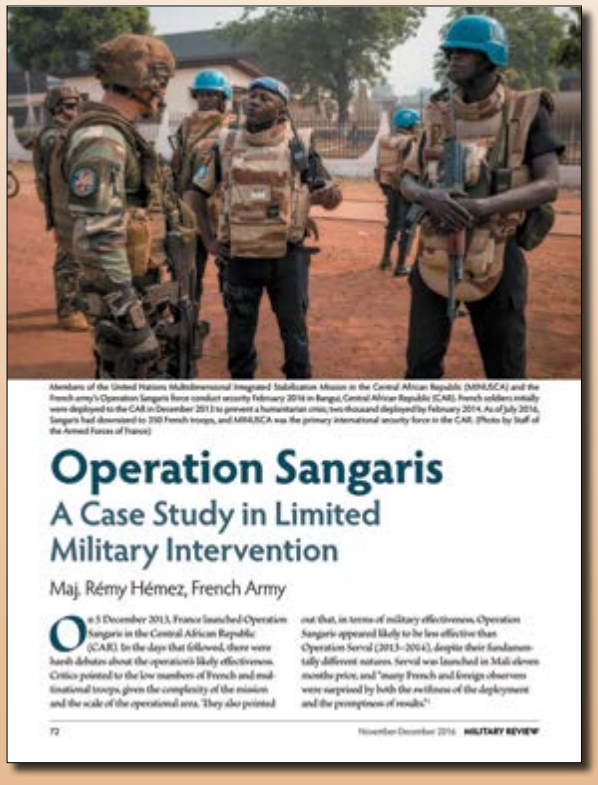
Invites Your Attention to

Operation Serval

Another Beau Geste of France in Sub-Saharan Africa?

Lt. Gen. Olivier Tramond, French Army, and
Lt. Col. Philippe Seigneur, French Army

To view "Operation Serval: Another Beau Geste of France in Sub-Saharan Africa?" from the November-December 2014 edition of *Military Review*, visit https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/MilitaryReview_20141231_art014.pdf.



Operation Sangaris

A Case Study in Limited Military Intervention

Maj. Rémy Hémez, French Army

To view "Operation Sangaris: A Case Study in Limited Military Intervention" from the November-December 2016 edition of *Military Review*, visit https://www.armyupress.army.mil/Portals/7/military-review/documents/Military-Review-20161231-art014.pdf.

Blood and Ruins

The Last Imperial War, 1931–1945

Richard Overy, Viking, New York, 2022, 1040 pages

Mark Montesclaros, Fort Leavenworth, Kansas

There has been a recent trend among historians and other authors to challenge the standard time frame of the Second World War—one that begins in 1939 and ends in 1945. Other paradigms have been suggested. Author Robert Kaplan, in a recent article written for the Center for a New American Security, refers to the "Long European War," which he dates from 1914 to 1989, encompassing both world wars as well as the Cold War.[1] In his seminal one-volume history of World War II, historian Antony Beevor questions the various time parameters used in the past to frame the war and observes, "History, however, is never tidy."[2] Beevor notes that Western historians tend to neglect Asian roots of World War II, while some Asian historians "argue that the Second World War began in 1931 with the Japanese invasion of Manchuria."[3] In a magnificent new single-volume history of the period encompassing the war, *Blood and Ruins: The Last Imperial War, 1931–1945*, British historian Richard Overy examines a wider swath of time as suggested by Beevor. As the title indicates, the author's perspective is from that of empires, or "nation-empires," which sets the book apart from other single-volume histories. The title also suggests—with its reference to "blood and ruins"—that the demise of empires is not a peaceful one. Both themes resonate throughout the book, in which Overy makes a singular contribution to our understanding of the roots, conduct, and aftermath of the Second World War.

Blood and Ruins is an impressive work—massive in size and scope, and expansive in the number of different issues it addresses. It is unlike other single-volume treatments of the Second World War, both in the author's overall approach as well as in the emphasis he places on areas he believes are neglected in other works. As laid out in his preface, the author contends that the war cannot be viewed in its typical Axis versus Allies context, pitting competing ideologies against each other without regard to proper consideration for the geopolitical historical context. Thus, the author challenges the standard chronology of the war, takes a much more global rather than theater or regional context, and focuses on the diverse kinds of wars, or "wars within wars," the protagonists fought. He also focuses on the many devastating negative aspects of war between empires as covered by the book's thematic chapters.

Overall, this approach leads to the author's thesis—so eloquently stated in his preface—"that the long Second World War was the last imperial war."[4]

The organization of *Blood and Ruins* is clearly innovative and reflective of the emphasis Overy places on the aspects of war beyond policy, strategy, campaigns, and operations. The prologue and the first three numbered chapters are chronological narratives that place the "long Second World War" in context from the perspective of the "nation-empires" that fought them. In the prologue, the author describes the global imperial order and the rise of the "New Order" states—Japan, Germany, and Italy—whose imperial ambitions laid the groundwork for the global conflagration to come. Unlike other one-volume histories of World War II, Overy devotes considerable time and space to explaining the context of the international order, the rise of the new order states, and the political, economic, and social reasons for their creation. Uniquely, the author sees the militarism of Japan, Germany, and Italy not as causes of crisis but rather as its effects.[5] Because of Overy's analytical lens, the first of the numbered chapters following the prologue begins with the year 1931, as indicated in the book's title. It marked the year that Japan invaded Manchuria and thus embarked on its "imperial project." It would later be joined by Italy and Germany on their similar quests for territorial expansion and national prestige. Thus, the author sees the war in a global, imperial context as the new order states sought to establish hegemony in a world dominated by the existent imperial powers—primarily Great Britain and France. Chapters 1–3 cover the periods 1931–1940, 1940–1943, and 1942–1945, respectively. They catalog the rise to power, the high-water marks, and the subsequent demise of Japan, Italy, and Germany in pursuit of their imperial ambitions. The three chapters constitute about a third of the book and demonstrate Overy's remarkable ability to synthesize and evaluate events at the strategic, operational, and—to a lesser extent—tactical levels of war. Overall, the prologue and first three narrative chapters analyze and evaluate about eighty years of history, thus covering the entirety of other single-volume histories. Consequently, the author focuses more on the broad forces and long-term aspects shaping the imperial powers during this period, placing less emphasis on the details of military strategy, campaigns, and operations. While this sets the book apart from works such as Max Hastings' excellent *Inferno: The World at War, 1939–1945*, his lens from the imperial perspective is original and highly insightful.[6]

Blood and Ruins then deviates from chronological narratives to seven thematic chapters, a departure reflective of the author's desire to cover subjects he feels are underemphasized by other writers. These seven chapters are likewise remarkable for their analysis of a broad range of topics applied across not only the imperial actors but to the United States and Russia as well. Chapter 4 discusses mass mobilization and how each protagonist maximized use of its economic and labor forces—whether male or female, slave or free. In the next chapter, "Fighting the War," Overy shows how and why the Axis members—or "new order" empires, initially so successful, were eventually overtaken by Allied advantages in airpower, amphibious doctrine, mechanized warfare, as well as technological edges in radio and radar. Most readers of this publication will readily identify the term "force multipliers," which the author employs to categorize these military advantages that were so instrumental to Allied victory. Chapter 6 focuses on how each of the combatants adapted their peacetime economies to war, highlighting the role of national culture in the production of weaponry. In a cleverly named subchapter, "Weapons of Mass Production," Overy contrasts how America's culture of "Fordism" (assembly line manufacturing) contrasted sharply with the German preference for quality and specialized manufacturing.[7] This contributed to America's ability to outproduce by itself all its enemies combined by 1943.[8]

Chapter 7, titled "Just Wars? Unjust Wars," addresses how each imperial power justified the righteousness of its cause, whether as a member of the Axis powers or Allied coalition. Overy's comparison of the various

Mark Montesclaros
is an assistant professor in the Department of Joint, Interagency, and Multinational Operations at Fort Leavenworth, Kansas. A thirty-year Army veteran, he holds a BS from the U.S. Military Academy, an MA in Latin American studies from the University of Texas at Austin, and an MSS from the U.S. Army War College. He has served on the Joint Staff, taught strategy at the Army War College, and served as defense attaché to the Republic of Panama.

moral justifications by the combatants is quite illuminating; he observes, "The pursuit of victory at all costs was the moral cement that held the war effort together."[9] Both Japan and Germany justified their wars of aggression in terms of self-defense against either encirclement by Allied imperial powers, or against a Jewish world conspiracy. They also accused the Allies of hypocrisy—the British for their emphasis on preserving their empire at the expense of colonial populations, the United States for its treatment of Native Americans and African Americans. Overy adeptly covers all the nuances in these narratives; no combatant's justification for war was invulnerable to attacks by its adversaries. Even America was constantly at odds with its British partner over any strategy that prioritized the preservation of its empire, while both Allies had to set aside their aversion to communism after Russia entered their camp in the summer of 1941. In the end, however, Allied justifications for the war prevailed, helping to shape the immediate postwar period as well as the Cold War that followed. The legal principles outlawing wars of aggression were set forth during the International Military Tribunals at Nuremberg, and concepts such as self-determination, so vehemently advocated by leaders such as Franklin Roosevelt, were later codified in the founding documents of the United Nations.

The final three thematic chapters in the book underscore the "blood and ruins" characterization of the war found in the book's title. (Overy's final three chapters are reminiscent of Keith Lowe's excellent study of immediate postwar Europe, which encompasses similar themes).[10] Chapter 8 addresses the many ways in which civilians were drawn into the abyss of conflict—whether manning civil defense positions or taking part in the fighting as part of resistance or partisan movements. Overy makes a unique observation in this regard: "The battle lines involving civilians were, as a result, more incoherent and more dangerous than service in the military war effort."[11] In his next chapter, "The Emotional Geography of War," the author examines how both the military and civilian sectors coped with the mental strain of war, investigating such topics as "combat exhaustion" for those on the front lines, and the psychological damage wrought on civilian victims of bombing raids, particularly in Britain, Germany, and Japan. His statistics regarding the psychiatric casualties in the armies of multiple nations are particularly devastating. Chapter 10, "Crimes and Atrocities," focuses on the grimmest sides of the war—ranging from "hundred-man killing contests" practiced by the Japanese on Chinese civilians to Germany's genocide of European Jews. He also documents other heinous acts including looting, pillaging, starvation, and crimes against women. While difficult to read, chapter 10 underscores the violent, annihilationist nature of the last imperial war, with civilian death tolls that are incomprehensible. The author estimates that sixteen million innocents died in the Axis-Soviet war, while ten to fifteen million Chinese perished in the war against Japan.[12] The imperial projects of Japan, Italy, and Germany truly ended in "blood and ruins."

The author returns to the chronological narrative style in his conclusion, "Empires into Nations: A Different Global Age." Here, Overy states, "The most significant geopolitical consequence of the war was the collapse within less than two decades of the entire European imperial project and the establishment of a world of nation states."[13] Serving as a conclusion as well as an epilogue of sorts, the chapter emphasizes that out of the wreckage of the last imperial war—so aptly documented in the previous chapters—came a "widespread popular rejection" of imperialism and the dissolution of the system that pitted the "new order empires" against the old.[14] Japan, Italy, and Germany failed in their imperial ambitions and underwent radical reconstruction, while the victorious ones—Britain and France—eventually saw the demise of the empires they so desperately sought to maintain. The near global endorsement of the right to self-determination, the rise of independence movements, and the eventual creation of the United Nations sounded the death knell for empires and ushered in the modern era of nation-states. Overy notes that the Second World War, more than any other conflict, "created the conditions for transforming not just Europe, but the entire global geopolitical order."[15] In the tour de force that is *Blood and Ruins*, the author has certainly made his case.

Blood and Ruins is unique in several aspects, which make it a very worthwhile investment in time. Perhaps its greatest strength is perspective. Overy links events temporally across the globe from the view of each nation-empire, making frequent observations that give the reader a broader perspective of the war. As an example, the author notes that "Stalingrad, Guadalcanal

and El Alamein were the furthest points of advance," underscoring the pivotal years of 1942–1943.[16] His chronological as well as thematic chapters are replete with valuable insights that compare and contrast the actions of the "new order empires" (Japan, Italy, Germany)—with their "old order" adversaries (Britain and France) across the wide range of themes noted above. Next, Overy's overall expertise and command of his material is nothing short of astounding. He is equally adept at describing the major political and military developments of the war while providing detailed analyses on topics ranging from Lend-Lease to economic mobilization to gender crimes. Overy's use of data and statistics underscore his points dramatically, giving his readers new points to ponder. A final noteworthy aspect of the book is in the variety of themes it tackles, including some of the darkest, most unpleasant aspects of war. His chapters on the emotional geography of war, as well as crimes and atrocities, are necessary to understand the magnitude of violence inherent in the global conflagration that was the Second World War. Perspective, expert insights, and depth—these are qualities that mark *Blood and Ruins* as a book to be studied, not just read.

Because of the book's perspective and emphasis, *Blood and Ruins* may not appeal to all readers. Those seeking greater detail on the purely military aspects of the war should consult other one-volume histories such as those mentioned in this review. Overy's lens is wide; as an example, his analysis of the Russo-German war from the onset of Operation Barbarossa to the first German defeats in the East takes up only twelve pages in chapter 2. As noted, the author condenses the years 1931–1945 in his first three narrative chapters, focusing more on the more geopolitical aspects of imperial war. Hence, it is more difficult to glean out the military aspects of a particular campaign, operation, or battle than in a more topical history. However, all readers will benefit from the insights the author provides in chapter 4, "Fighting the War," which analyzes the military factors inherent to Allied victory.

Blood and Ruins has this reviewer's highest recommendation. While by no means a casual read, it contributes a unique perspective that challenges the reader's assumptions about World War II, the conduct of its protagonists, and the aftermath that ensued. It represents the highest levels of scholarship, is meticulously researched, and articulately written. Overy clearly is at the apex of his craft. *Blood and Ruins* will appeal to students of World War II as well as those interested in the origins of the Cold War. The book would make a welcome addition to one's professional library and will reward its audience with something to think about long after its first reading. ■

Notes

1. Robert D. Kaplan, "The Return of Marco Polo's World and the U.S. Military Response" (Washington, DC: Center for a New American Security, 2017), 2, accessed 1 February 2023, http://stories.cnas.org/wp-content/uploads/2017/05/CNASSTORY-MarcoPolo-Final.pdf.

2. Antony Beevor, *The Second World War* (New York: Little, Brown, 2012), 1. In his single-volume history of World War II, the author uses a chronological approach and a standard timeline. Chapter 1, "The Outbreak of War," covers June–August 1939, while his closing chapter, "The Atomic Bombs and the Subjugation of Japan," spans May–September 1945. Several of this thematic chapters, such as the one describing the Shoah, have longer timelines, in this case 1942–1944.

3. Ibid., 2.

4. Richard Overy, *Blood and Ruins: The Last Imperial War, 1931–1945* (New York: Viking, 2022), xiii.

5. Ibid., xii.

6. See Max Hastings, *Inferno: The World at War, 1939–1945* (New York: Alfred A. Knopf, 2011). Hastings takes a more conventional approach to his excellent and highly accessible one-volume history of World War II. The author emphasizes the use of first-person narratives and anecdotes throughout his text. While taking a more topical approach to the war, Hastings does consider the issue of empires in his chapter on "Divided Empires." Like Overy, Hastings also devotes a chapter to the war's horrific impacts on noncombatants titled "Victims."

7. Overy, *Blood and Ruins*, 527.

8. Ibid., 526.

9. Ibid., 597.

10. See Keith Lowe, *Savage Continent: Europe in the Aftermath of World War II* (New York: Saint Martin's Press, 2012). Contrary to popular images of a blissful Europe following Victory in Europe Day, Lowe shows that the horrors continued for many on the continent and the killing did not stop. He explores multiple issues such as the plight of the millions displaced by the war, vengeance on Axis collaborators, ethnic cleansing, and the many "wars within wars" that ensued following the formal termination of war.

11. Overy, *Blood and Ruins*, 665.

12. Ibid., 784.

13. Ibid., 826.

14. Ibid.

15. Ibid., 878.

16. Ibid., 237.

Medal of Honor

Spc. 5 Dwight W. Birdwell, U.S. Army

During a ceremony in the East Room of the White House on 4 July 2022, President Joe Biden awards the Medal of Honor to Dwight Birdwell for his actions on 31 January 1968 during the Vietnam War. (Photo by Sgt. Henry Villarama, U.S. Army)

President Joseph Biden awarded the Medal of Honor to Spc. 5 Dwight W. Birdwell at a White House ceremony 4 July 2022 for his actions at Tan Son Nhut Airbase near Saigon, Republic of Vietnam, during a massive North Vietnamese attack known as the Tet Offensive. Birdwell was then a tank crewman assigned to Troop C, 3rd Squadron, 4th Cavalry, 25th Infantry Division.

As part of the countrywide offensive, over a thousand North Vietnamese soldiers attacked the airbase on 31 January 1968, Vietnam's lunar New Year (Tet). About one hundred soldiers from Birdwell's unit responded to the attack in an armored column of tanks and cavalry assault vehicles, driving directly into three enemy battalions. The fierce North Vietnamese attack disabled or destroyed many of the armored vehicles and seriously injured Birdwell's tank commander. Birdwell took action, ignoring heavy small-arms fire to move the commander to safety and take control of the tank.

Although exposed to enemy fire, Birdwell provided situation reports to his squadron commander and fired at the enemy with the tank's main gun and machine gun until both became inoperable and his communications equipment was destroyed. He then continued to fight at the tank with his M-16 rifle.

When the commander's helicopter was shot down, Birdwell moved to the aircraft under fire, retrieved two M-60 machine guns with ammunition, and returned to the tank, where he and a fellow soldier continued to engage the enemy fighters.

Birdwell's machine gun was hit by enemy fire and exploded, injuring him on his face and upper body, but he refused evacuation and continued to fight. Taking charge, he consolidated the remaining soldiers, redistributed ammunition, and moved the wounded to a safer location. He then organized a small counterattack force, which disrupted the enemy attack with small-arms fire and hand grenades until friendly reinforcements arrived. With the airbase secured, Birdwell ignored his own wounds to assist with medical evacuations.

In his remarks at the award ceremony, Biden expressed awe for Birdwell's exploits. The president commented, "He used the tank's cannon. He used the tank's machine gun. He used his personal rifle. He sustained fire, drove back the attackers, and created a place of relative safety for injured men behind the tank to take cover. He provided battlefield updates to his commanders until the enemy shot the communication system right off of his helmet."

Biden continued, "When he was ordered to load onto the medevac helicopter, he complied—this I find amazing—only to crawl right back off the other side and to keep on fighting. That's what you call 'taking orders and causing trouble.' God love you."

Birdwell originally was awarded two Purple Hearts, a Bronze Star for meritorious service, and two Silver Stars for his actions in Vietnam. However, his first Silver Star, for his actions at the airbase, was upgraded to the Medal of Honor in part due to decades-long efforts by Gen. Glenn Otis, Birdwell's commander in Vietnam. Birdwell is the thirty-third Native American to receive the Medal of Honor.

For more on Birdwell's Vietnam experiences, read his autobiography *A Hundred Miles of Bad Road: An Armored Cavalryman in Vietnam, 1967–68*. ■

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