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THE PROFESSIONAL JOURNAL OF THE U.S. ARMY

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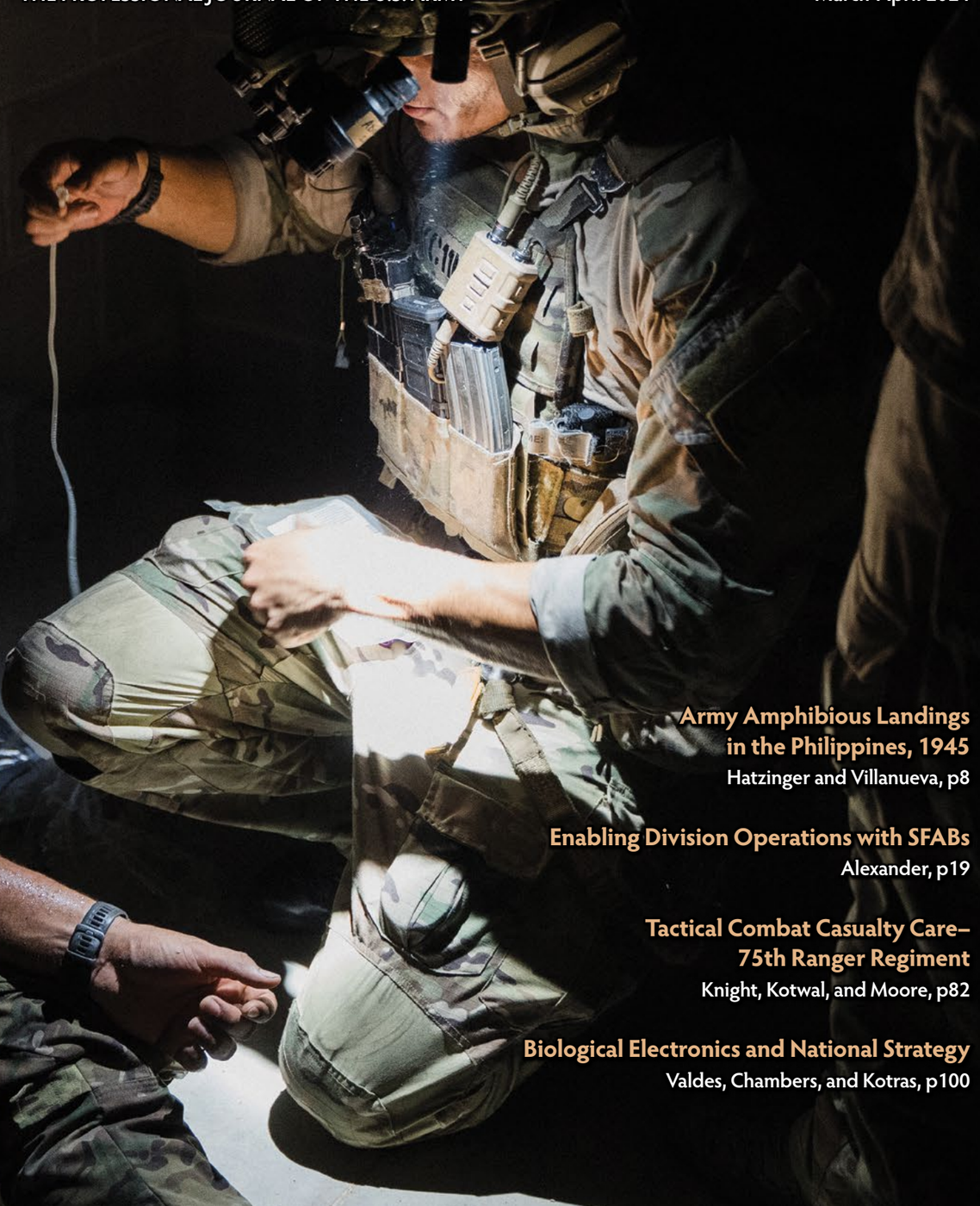

Military Review

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By Order of the Secretary of the Army:

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2404320

Cover photo: A ranger assigned to the 75th Ranger Regiment performs medical lifesaving procedures during a Ranger First Responder training exercise on 25 August 2023 at Fort Moore, Georgia. The 75th Ranger Regiment is the U.S. Army's premier special operations direct-action raid force, capable of deploying anywhere in the world at a moment's notice. (Photo by Sgt. Paul Won, U.S. Army)

ARMY UNIVERSITY PRESS

Strengthening the Army Profession through the Harding Project

Col. Todd Schmidt, PhD, U.S. Army

Army University Press (AUP) recently shared a "chief priority" of Gen. Randy George, chief of staff of the Army (CSA), regarding his emphasis on renewing professional military writing and scholarship.[1] On 5 January 2024, we received official notification that the "rose was pinned" on AUP to pursue the objectives of the Harding Project on behalf of the U.S. Army Training and Doctrine Command and the Combined Arms Center at Fort Leavenworth, Kansas. This decision was based on the executive recommendations coming out of a two-day workshop sponsored by the CSA and hosted by the Modern War Institute (MWI) and the U.S. Military Academy at West Point. If readers have not been following the development of the Harding Project, they are encouraged to learn more by reading the CSA's article on the MWI website or Lt. Gen. Milford Beagle's article on the *Military Review* website.[2]

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

For AUP, the mission we have been given is clear: modernize U.S. Army publications and platforms, optimize institutional archives, and achieve innovative, disruptive change.

To continue gaining momentum on this initiative, on 25 January 2024, AUP hosted an organizational meeting for all branch journals. Over thirty-five branch representatives attended the meeting to hear and understand where the CSA is leading Army publications. The Army's branch journals and their respective leadership and editorial teams are excited about modernization and change.

The first step will be endeavoring to create a baseline of training and knowledge related to modern, online publishing. However, this is more than a training shortfall. It is a long-running challenge caused by dwindling resources. With the buy-in of Training and Doctrine Command and Combined Arms Center leadership, however, critical investment in our branch journals is coming. The intent and desired end state is that all branch journals have the capability to produce web-first, mobile-friendly content, and that articles and editions are archived in a standardized format that is optimized for research accessibility.

We are aggressively seeking to achieve several objectives by the end of fiscal year 2024—a lofty aspiration that may be disruptive. However, disruptive, innovative change can be good if it improves our institution, organization, and professional community. We should not be satisfied with continuing to do things as we have done in the past, particularly if our future leaders are having to look outside the Army to participate in professional discourse. Army University Press is

committed to producing products and platforms that facilitate professional discourse where our junior, mid-career, and future audiences will find them.

In addition to providing professional development and resources to our branch journals, AUP is excited to announce three initiatives that will help reinvigorate professional scholarship and writing. First, the U.S. Army's premier writing contest, *Military Review*'s General William E. DePuy Special Topics Writing Competition, will be awarding significant financial awards sponsored by the Association of the United States Army. Check out the 2024 DePuy Writing Competition at our website for more details.[3]

Second, we are pleased to announce the LTG (Ret) James M. Dubik Writing Fellows Program. This exceptionally prestigious fellowship, launching in Spring 2024, will select a small cohort of writing Fellows. Each selectee will be working with AUP to write, publish, improve branch journals, and find new and exciting opportunities to improve professional development and educational resources for our Army. If you are interested in applying to this rewarding new fellowship program, visit our AUP website for more information and reach out to our leadership.[4]

Finally, AUP and the Harding Project will be hosting a series of events over the course of 2024. In June 2024, branch journal teams are invited and encouraged to participate in workshops at Fort Leavenworth to continue to learn, share best practices, and report on progress toward the CSA's objectives. In October 2024, AUP and the Harding Project, in partnership with the Association of the United States Army, will be hosting a series of panel discussions, inviting winners of the DePuy Writing Competition and nonresident writing Fellows to Washington, D.C., to present their papers and research.

Army University Press is honored to be appointed to lead the CSA's initiative to renew and reinvigorate professional military writing and scholarship. With passionate professionals and scholars across the force, we are looking forward to igniting a renaissance in professional discourse and sharing the immense knowledge and experience that resides across our formations. We look forward to improving how authors and readers interact, share opinions, and discuss important issues and challenges facing our Army, and we hope YOU will join and support us in these efforts. ■

Notes

1. Todd Schmidt, "Chief Priority! Ignite a Renaissance in Military Scholarship and Writing," *Military Review* 103, no. 6 (November-December 2023): 1–3, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/November-December-2023/Chief-Priority/.

2. Randy George, Gary Brito, and Michael Weimer, "Strengthening the Profession: A Call to All Army Leaders to Revitalize Our Professional Discourse," Modern War Institute at West Point, 11 September 2023, https://mwi.westpoint.edu/strengthening-the-profession-a-call-to-all-army-leaders-to-revitalize-our-professional-discourse/; Milford H. Beagle Jr., "Professional Discourse and Dialogue Made Easy," *Military Review* Online Exclusive (December 2023), https://www.armyupress.army.mil/journals/military-review/online-exclusive/2023-ole/professional-discourse-and-dialogue-made-easy/.

3. "2024 General William E. DePuy Special Topics Writing Competition," Army University Press, accessed 2 February 2024, https://www.armyupress.army.mil/DePuy-Writing-Competition/.

4. "LTG (Ret) James M. Dubik Writing Fellows Program," Army University Press, accessed 2 February 2024, https://www.armyupress.army.mil/Journals/James-Dubik-Writing-Fellowship-Program/.

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Write for *Military Review*

Suggested Writing Themes and Topics—2024

- From the U.S. military perspective, what are the greatest external threats to the United States? Why, and 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, who make up the new confederated blocs (i.e., the 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 best synchronizes DIME (diplomacy, information, military, and economic) elements of power to achieve strategic goals? 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?
- How should the United States respond to Chinese aggression toward Taiwan?
- What lessons are we learning from Russia's war with Ukraine? What should be the next steps for the United States? What should be the desired end state from a U.S. perspective?
- What is the impact of irregular immigration on the security of the United States?
- What is the status of security force assistance brigades (SFAB)? What is the future for SFABs?
- What is the role now of the U.S. Armed Forces in Africa? Far East? Middle East?
- What logistical challenges will the U.S. military face in large-scale combat operations?
- What does the future hold for nanoweapons? Electromagnetic warfare? Artificial intelligence? Information warfare? How is the Army planning to mitigate effects?

Enter the U.S. Army's premier writing competition!

2024 General William E. DePuy Special Topics Writing Competition

This year's theme is "The Russia-Ukraine War"

Russia and Ukraine have been at war since Russia invaded its neighbor on 24 February 2022. The intent of this year's DePuy competition is to encourage close examination of this war and what lessons it has provided for the Army. A list of suggested topics for examination is provided below. However, the list is not exclusive, and manuscripts identifying and analyzing other salient topics are encouraged.

- What lessons have we learned from the Russia-Ukraine war so far?
- How do lessons from this war affect/influence how we approach Field Manual 3-0, *Operations*, and large-scale combat operations?
- Based on lessons learned from this conflict, what needs to change in U.S. Army doctrine?
- What have we learned about the evolution and the future of maneuver warfare (armor, fires, unmanned aircraft, etc.)
- Based on lessons learned from this conflict, what are the impacts of technology on modern warfare (e.g., cell phones, computers, artificial intelligence)?
- How do the Russian and Ukrainian approaches to information operations compare? Psychological operations? Civil-military operations? Who has been more effective? How have social and traditional media affected the war for each side?
- How does this conflict inform the Army of 2030–2040?
- How does this conflict influence U.S. adversaries? What are our adversaries learning?
- What are our allies learning from this conflict? How will it affect U.S. relationships with its allies? With NATO?
- How does this conflict affect/influence the U.S. approach in the Indo-Pacific?
- Based on what we have seen in this conflict, what is the role of the interagency at the operational level?

Competition opens 1 January 2024 and closes 19 July 2024

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 discussion topics related to the Russia-Ukraine war relevant to the U.S. Army; how effectively detailed and feasible analysis of the issues identified is 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.

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Troops wade ashore onto Cebu circa March 1945. (Photo from Kent Roberts Greenfield, ed., *The War against Japan: U.S. Army in World War II Pictorial Record*, 2nd ed. [Washington, DC: U.S. Army Center of Military History, 2001], 382)

A "Light but Aggressive Command"

The 1945 Campaign in the Southern Philippines

Lt. Col. Kyle Hatzinger, U.S. Army
Maj. James Villanueva, U.S. Army

The contributions of the U.S. Army in the Pacific theater during World War II, particularly with regard to amphibious operations, were significant despite not being as well-known as operations principally undertaken by the Marine Corps.[1] By the end of the war, three field armies

commanded five Army corps comprising twenty-one Army divisions in addition to various separate units equivalent to another three divisions of personnel. This force structure dwarfs even that of the current Total Army. In contrast, six Marine divisions overseen by two corps headquarters served in the Pacific during the war. The breadth of experiences of the Army in the Pacific during World War II can provide useful insights for future operations conducted in the Indo-Pacific Command area of responsibility.

Looking specifically at amphibious landings, the U.S. Marine Corps primarily conducted operations to attack defended beaches in the central and South Pacific, albeit with the support of many Army units that operated under Marine Corps or Navy joint commanders. In contrast, U.S. Army ground troops, in conjunction with Allied units, were the primary forces that conducted operations in the Southwest Pacific Area (SWPA). The Army participated in the assault or support phases for fifty-eight of the sixty-one major amphibious operations conducted worldwide during World War II, including the vast majority of those in the Pacific.[2]

While operating as the primary ground force, the U.S. Army in the southwest Pacific often found itself fighting on larger land masses, such as New Guinea or Luzon and Leyte in the Philippines, than the islands assaulted by the Marine Corps. The Allies used many amphibious operations in SWPA to outmaneuver Japanese forces instead of attacking strong Japanese defenses directly, amplifying current doctrine, which argues for amphibious forces to "avoid or bypass enemy strengths and to exploit enemy weaknesses and gaps."[3] Lacking oceangoing amphibious shipping, naval gunfire support, and/or carrier-based air support, the Army often found itself assaulting undefended beaches and subsequently supplying itself using smaller landing craft out of necessity.[4]

Additionally, the Army often had to seize multiple smaller objectives near simultaneously or in rapid succession to enable support from land-based aircraft. Commanders routinely task-organized amphibious operations around task forces smaller than a division, whether regimental combat teams (RCTs, roughly equivalent to modern brigades) or even individual battalions and companies. To better inform preparations for future large-scale combat, this article will highlight key aspects of a specific campaign, the liberation of the southern Philippines in 1945, during which the Eighth U.S. Army commanded a joint force and conducted several dozen amphibious operations in the span of a few weeks.

Ultimately, this campaign, though little discussed in the grand arc of the war and usually overshadowed by campaigns on Leyte and Luzon, can provide context to the use of capabilities currently residing in the Army and those it might possess in the future. First, no "one-size-fits-all" approach is feasible for seizing islands and key terrain in the Pacific. Based on mission variables, the Army assaulted defended or undefended beaches with company to corps-sized formations under compressed timelines. Flexible organizations and planners are essential. Second, amphibious operations are difficult and incredibly complex, but extensive training and *joint/combined* service rehearsals can reduce friction and speed the process of unloading combat power. Finally, amphibious landings are just the start of an operation; planners must account for the terrain, weather, and enemy inland defense networks during subsequent phases of an operation. Failing to account for these factors

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Maj. James Villanueva, U.S. Army, is an infantry officer assigned as an observer-coach/trainer with the Mission Command Training Program. He holds a PhD in history from Ohio State University. During his career, he has deployed in support of Operation Iraqi Freedom and served with the 25th Infantry Division, the Joint Readiness Training Center Operations Group, the 101st Airborne Division (Air Assault), and as an assistant professor in the U.S. Military Academy Department of History. Villanueva is the author of *Awaiting MacArthur's Return: World War II Guerrilla Resistance against the Japanese in the Philippines* (University Press of Kansas, 2022).

risks culmination due to extended lines of communication over restrictive terrain, loss of troops to disease, and/or unanticipated enemy forces and defenses.

The Campaign Begins

By the end of January 1945, Gen. Douglas MacArthur had done much to realize his promise to return to the Philippines and liberate the archipelago from Japanese occupation. The previous October, his forces had landed on Leyte and managed to complete major operations on that island in a hard-fought campaign by the end of 1944. In January 1945, MacArthur's Sixth U.S. Army initiated the campaign to seize Luzon, the largest island in the Philippines and home to the capital, Manila. While the campaign to seize Manila and its adjoining bay were completed in a rapid, albeit bloody, fashion, Sixth Army would remain locked in a struggle to clear the remainder of the island for the rest of the war. With operations on Luzon slowly grinding forward, MacArthur turned his attention southward.

Initially launched without approval from the Joint Chiefs of Staff, the campaign to secure the southern Philippines, the islands south of Leyte, was spurred by MacArthur's desire to liberate the entirety of the archipelago in keeping his promise to "return" to the islands, no doubt adding to his own prestige and enhancing his chances of commanding the anticipated invasion of Japan.[5] For practical reasons, the liberation of the southern Philippines would also provide excellent bases for subsequent operations such as the planned invasion of Japan or air interdiction of Japanese shipping and installations around Borneo and the South China Sea. The seizure of the islands south of Leyte would also allow the liberation of Filipino civilians and Allied prisoners of war from Japanese control, especially given reports of the Palawan Massacre where some 150 American prisoners had been burned alive and shot by Japanese troops.[6] MacArthur issued the initial order for operations in the southern Philippines on 6 February 1945 and charged Lt. Gen. Robert Eichelberger's Eighth Army with conducting the liberation of the remaining islands, including the Visayas in the central Philippines and the larger island of Mindanao further south.

Dubbing the series of operations Victor I–V (numbered in the order in which the operations were planned, not executed), the campaign would see Eichelberger's troops conduct fifty-two "D-Days" of operations before the end of the war, including thirty-eight landings in one forty-four-day period (see figure 1).[7] Eichelberger would use his five divisions and supporting units to conduct landings ranging in size from company to corps operations and take advantage of extensive networks of guerrillas and Filipino civilians to gather intelligence on the Japanese and root out the defenders. Although the Japanese nominally possessed about one hundred thousand troops, roughly equal to the number of troops at Eichelberger's disposal, the Japanese in the area lacked air, naval, and logistical support, meaning they were isolated and fixed in place, and fewer than half were combat troops.[8] Additionally, when one considers that well over fifty thousand guerrillas were able to support the Americans, the force ratio tipped in Eighth Army's favor. However, numbers alone do not guarantee victory, and the Eighth Army would have to contend with other factors to successfully conclude the campaign.

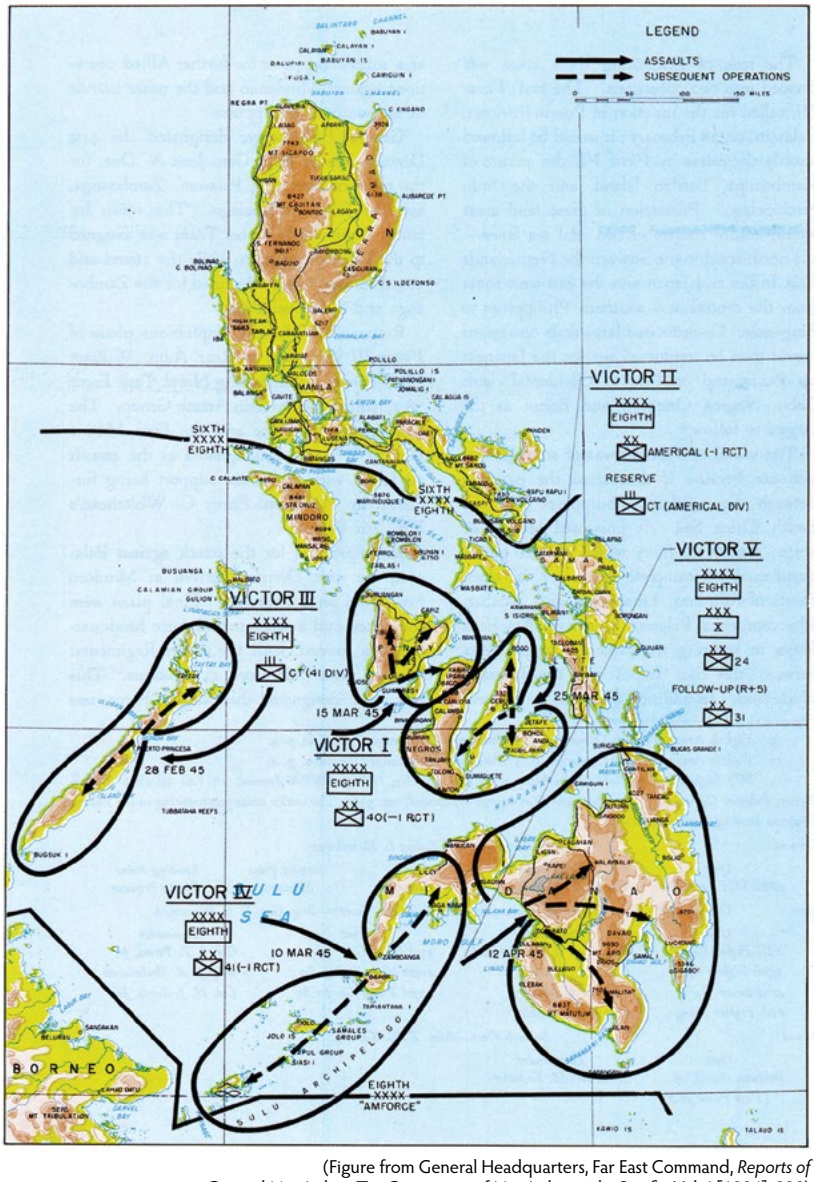
By 1945, the Japanese were well aware of American advantages in mobility and firepower. As opposed to earlier defensive operations on Tarawa and in the Marianas, the Japanese followed new doctrine that called for extensive defenses on high ground inland as opposed to fighting at the water's edge.[9] While the Japanese would not fight hard on the beaches, the Americans would find some difficulty in locating and overcoming these defenses inland, although the combat experience of Eichelberger's units would certainly aid them in this regard. Additionally, the size of the area of operations, measuring some 650 by 600 miles, would present its own challenges as the Eighth Army conducted widely dispersed amphibious and ground operations while allocating air and naval support and sustaining an unrelenting operational tempo. Given the number of islands of various sizes that Eighth Army was trying to seize in rapid succession, liberation of the southern Philippines was not a foregone conclusion but would require careful planning, bold maneuver, and the determination down to the individual soldier to root out the stubborn Japanese defenders.

Victor III and IV: Palawan and The Sulu Archipelago

The first operation, Victor III, saw the 41st Infantry Division's 186th RCT land on Palawan Island on 28

February 1945 to seize the key port of Puerta Princesa and allow the building of airbases to facilitate strikes on Japanese shipping in the South China Sea and oil installations in what is now Indonesia.[10] While the landing was unopposed by the nine hundred Japanese on Palawan, the preinvasion bombardment caused some confusion, which led to the disembarkation of the 186th onto the wrong beaches.[11] Eichelberger viewed the landings from his personal B-17 bomber along with Brig. Gen. William F. Heavey, commander of the 2nd Engineer Special Brigade, which provided landing craft and amphibian tractors for the operation.[12]

After the landings, the 186th RCT found itself working extensively with 1,200 local guerrillas to root out the Japanese, who opted to fight a defense farther inland in accordance with late-war Japanese doctrine. This resulted in a tough fight approximately ten miles north of Puerta Princesa, where the Japanese had established a series of strongpoints. From 3 to 8 March, the 186th managed to destroy these strongpoints and then embarked on grueling overland movements to clear the rest of the island, where the mountainous jungle terrain proved more formidable than the Japanese.[13] Clearing Palawan itself was only part of the operation, however. The 186th eventually conducted several smaller amphibious landings on outlying islands in company and battalion strength to successfully clear Japanese from those areas. Over the course of all these operations, the 186th RCT only suffered ten killed and forty-five wounded after inflicting some nine hundred casualties on the Japanese.[14]



(Figure from General Headquarters, Far East Command, *Reports of General MacArthur: The Campaigns of MacArthur in the Pacific, Vol. 1* [1994], 330)

Figure 1. The Victor Operations, 1945

Following Victor III, the balance of the 41st Infantry Division landed in the Sulu Archipelago and on the Zamboanga Peninsula in western Mindanao on 10 March (Victor IV). Due to delays getting the airfields on Palawan functional, the 41st prioritized the seizure of an airfield in Zamboanga prior to their main amphibious assault. Fortunately for the Americans, Filipino guerrillas controlled a small airfield at Dipolog, and the 41st quickly seized this opportunity by moving a Marine Air Group there. With air support from Dipolog and a three-day bombardment, the main landing on 10 March was largely unopposed, and the 162nd and 163rd Infantry Regiments quickly seized Zamboanga City and a nearby airfield. However, the Japanese had prepared a formidable defense further inland with deeply dug positions, mines, barbed wire, and booby traps. The 41st took two weeks to reduce the Japanese positions with extensive air and naval

(Figure from 10th Information and Historical Service, Headquarters Eighth Army, *Operational Monograph on the Cebu-Bohol Negros Oriental Operation, Victor II* [1947], 234)

Figure 2. Americal Division Cebu Plan of Attack

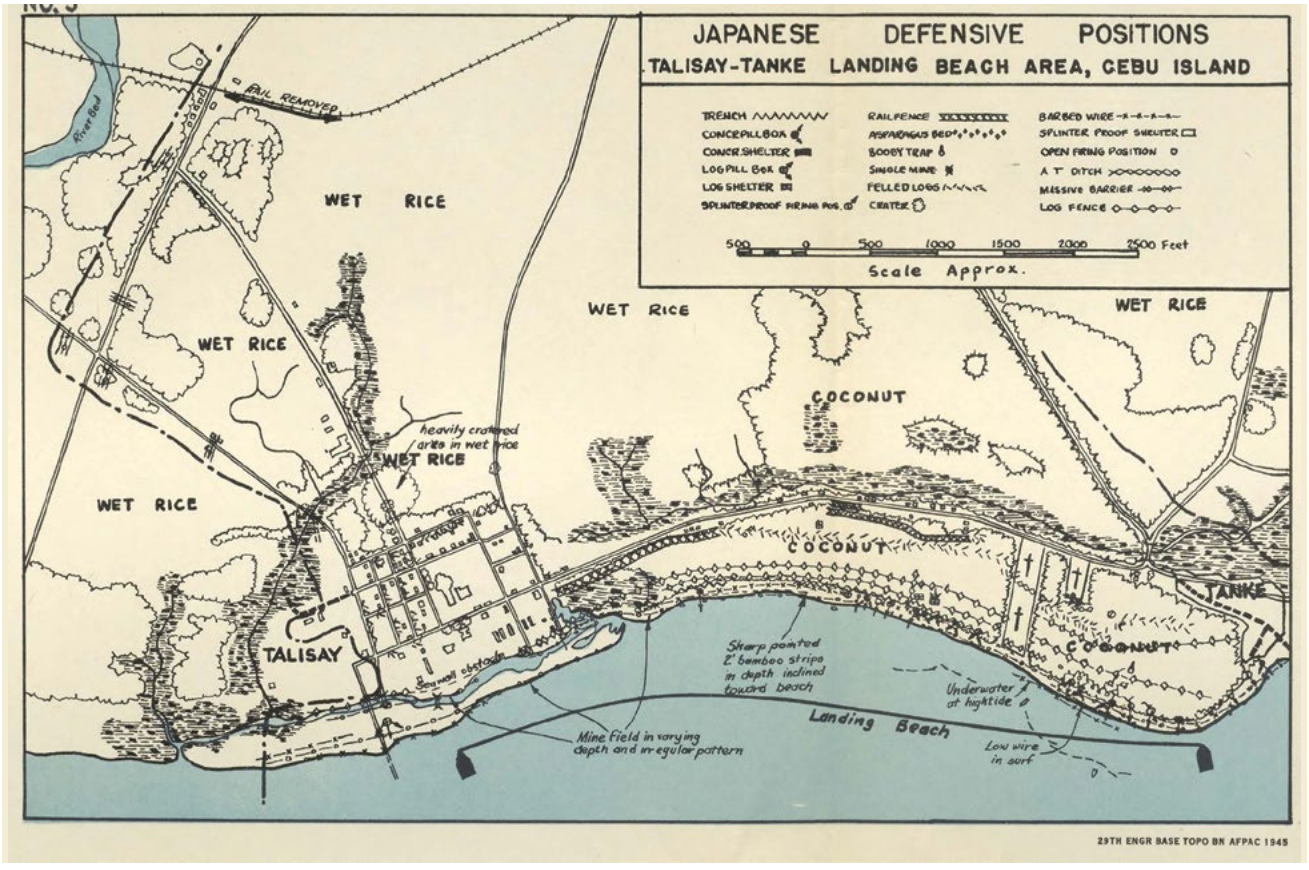
gunfire support, finding the terrain so restrictive that it precluded the use of tanks. Reinforced by elements of the 186th RCT sent back to the division after their Palawan mission, the 41st Infantry Division ultimately forced the Japanese to retreat by the end of March. Although mopping up pockets of Japanese continued, the Americans had killed some 6,400 Japanese at the cost of 220 killed in action themselves.[15]

In the Sulu Archipelago, the 41st Division was able to seize the islands of Basilan, Malamaui, Tawi Tawi, Sanga Sanga, and Bangao in rapid succession using company- and battalion-size landing forces. However, the division's 163rd RCT, supported by Filipino guerrillas, found itself locked in intense combat to dislodge 3,900 Japanese defenders around Mount Daho on Jolo Island.[16] Even with significant artillery and Marine Corps air support, it took from 9 to 22 April to dislodge the defenders and another two months to mop up the remaining Japanese, with the Americans losing forty killed and 125 wounded to two thousand Japanese losses. Fewer than ninety Japanese survived to surrender at the end of the war.

Victor I and II: Panay and Cebu

Operations on Palawan and in the Sulu Archipelago were followed by the landing of the 40th Infantry Division, minus one RCT, on Panay (Victor I) on 18 March.[17] On Panay, the troops of the 40th Division were greeted by Filipino guerrillas under Col. Macario Peralta in parade formation. Peralta's forces, numbering over twenty-two thousand, had already secured much of the island, leaving a force of approximately 2,700 Japanese isolated in the city of Iloilo and nearby towns.[18] The Japanese, able to destroy some 70 percent of Iloilo before they withdrew before the overwhelming force of the 40th Division, managed to retreat into the interior of the island after overcoming guerrilla defenses that had tried to trap them south of the town of Jaro.[19] However, the 40th Division and the guerrillas continued a relentless pursuit, effectively eliminating resistance on Panay and outlying islands by 22 March.

On 25 March, the Americal Division, minus the 164th RCT in Eighth Army Reserve, landed on Cebu (Victor II, see figure 2).[20] The Americal troops, although landing without Japanese opposition, lost ten of the first fifteen LVTs (Landing Vehicle, Tracked) that arrived on the beach to an extensive Japanese minefield (see figure 3).[21] This unforeseen obstacle temporarily halted beach and inward movements for ninety minutes until engineers cleared paths inland. Fortunately for the Americal, the Japanese chose



(Figure from 10th Information and Historical Service, Headquarters Eighth Army, *Operational Monograph on the Cebu-Bohol Negros Oriental Operation, Victor II* [1947], 235)

Figure 3. Japanese Defensive Positions on Cebu

not to defend these obstacles with direct or indirect fires. This allowed various elements of the reinforced Americal Division to establish shore party operations, begin medical treatment of the wounded, and ferry serious casualties offshore via amphibious DUKWs (colloquially known as "ducks") to waiting hospital ships.[22]

The Americans soon linked up with the Philippine 82nd Division, veterans of two years of guerilla operations on the island. Led by a mining engineer, the division assisted in securing the initial beachhead before moving to help secure or occupy Americal Division objectives.[23] The guerillas' airfield on the island's north end served as a forward refueling area for the Americal's L-4 artillery spotter aircraft during the first few days of the invasion until a larger airfield was captured and put into operation.[24] Accompanying both forces were Philippine civil affairs units charged with assisting beleaguered Filipinos as they emerged from Japanese occupation. This effort later laid the groundwork for creating the division's base camp as it staged for follow-on operations.[25] Meanwhile, guerrilla actions made it difficult for the Japanese to maintain communications between dispersed units or gather food locally.[26]

On 29 March, the 182nd Infantry encountered another minefield at the base of Gochan Hill north of Cebu City that was covered with Japanese fires amidst the Americans' combined arms assault on the hill itself with a company of tanks. Elements of the 57th Engineer Battalion worked to clear a path for the tanks to lead the assault, and infantrymen of the 182nd were later decorated for removing American casualties from the tanks' path. As the Americans secured the hill's eastern slope, a large explosion rocked the area, soon followed by mortar and machine gun fire. A Company, 182nd Infantry, was virtually wiped and not reconstituted for two weeks until enough replacements arrived to fill out the company along with personnel needs across the division.

It was later discovered that the Japanese had packed Gochan Hill with explosives set to a timed fuse. The arrival of a unit with 90 mm guns to the Americal on 9 April allowed these weapons to be used as a direct-fire asset on such caves along with pillboxes.[27] The 164th Infantry, which entered combat on Cebu beginning 11 April, discovered a similar setup in its sector on Hill 27 a short time later. The 164th RCT's stay with the Americal was short-lived, as the RCT was pulled off the line on Cebu to land in Southern Negros to help reduce the last Japanese concentration in the Visayas.[28]

The Americal Division was largely reconsolidated by 1 July as major combat operations for Victor II came to an end. Cebu was designated as the Americal Division's staging base for future operations, which appeared to be an invasion of the Japanese home islands. Immediately, the division transitioned into a three-week period of amphibious training led by mobile training units from the 7th Fleet's amphibious force, which were sent to all division staging areas beginning in June.[29] The Americal followed its amphibious training regimen with onshore training. In fact, the division was beginning a two-day field problem when official word arrived from the War Department announced the Japanese surrender. This necessitated another transition by the division, this time to Operation Blacklist, the occupation of Japanese territory.[30]

Victor V: Mindanao

Mindanao, southernmost of the main islands of the Philippines, is the second largest island in the archipelago. The Japanese had concentrated most of their defenses, including antiaircraft guns, naval mines, and artillery, in eastern Mindanao near the Davao Gulf, which was ideal for an amphibious landing and included Davao City, the largest and most important city on the island. The Japanese had also arrayed strong defenses in depth several miles inland to prolong the campaign as long as possible.

On the Allies' side, Mindanao possessed one of the strongest guerrilla forces in the entire Philippines, ably led by American reservist Col. Wendell Fertig, with some twenty-four thousand troops who were confining the Japanese to towns and major roads. Besides fighting the Japanese on the frontlines, the guerrillas passed important targeting information to Marine Corps air wings, going so far as to fly in Marine aircraft to point out targets.[31] In successful coordination with U.S. Navy Task Group 70.4, following rehearsals, guerrillas also conducted an amphibious raid at Talisayan and an amphibious landing at Nasipit in northern Mindanao.[32]

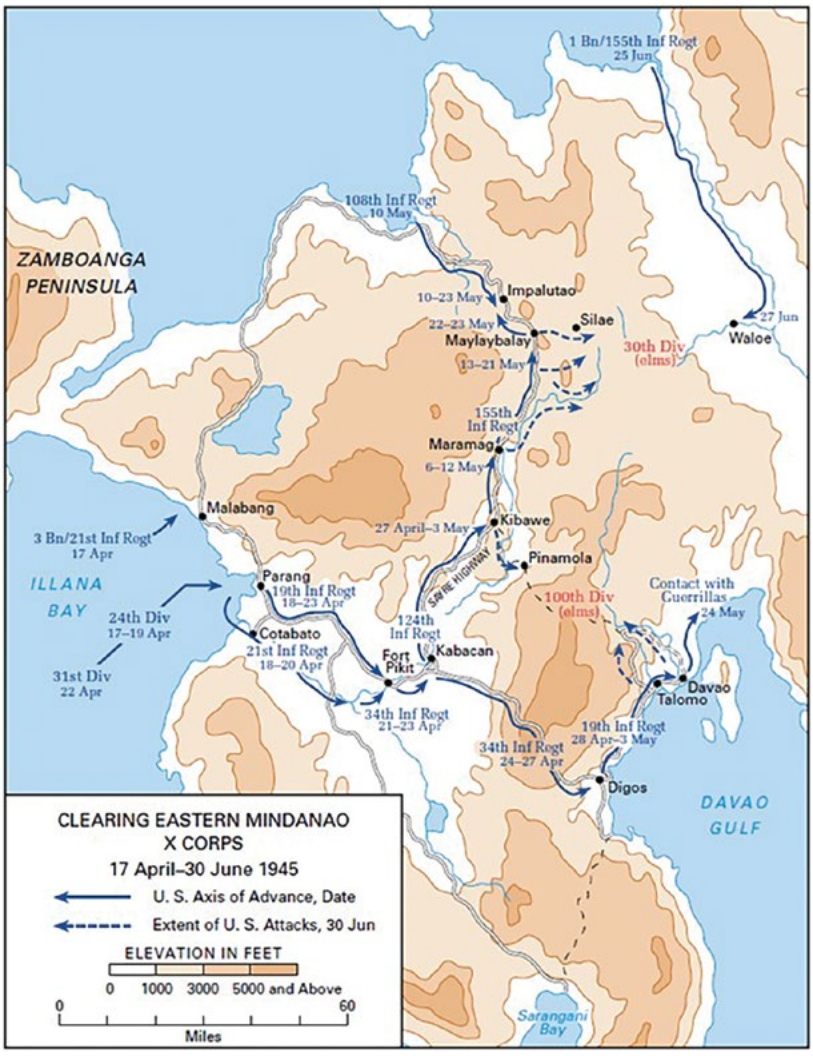
Beyond these operations, the guerrilla network and other intelligence sources allowed Eichelberger to deduce the disposition of the Japanese defenses. Instead of a frontal attack into the teeth of the defenses around Davao, the Eighth Army commander opted for a landing at Ilana Bay some one hundred miles to the west of Davao to attack the Japanese from the rear.[33] This plan would require surprise, expeditious unloading of forces, and a rapid advance to succeed, lest the Japanese reorient their forces to stop the American advance in the jungles and mountains in Mindanao's interior and prolong the campaign into the rainy season.

In the final Victor operation, X Corps oversaw the landing of the 24th Infantry Division on Mindanao on 12 April in Victor V, with the 31st Infantry Division following soon after (see figure 4).[34] There was no preinvasion bombardment to maximize the element of surprise, but the Americans were quick to conduct an aggressive advance once ashore. Lt. Gen. Gyosaku Morozuni, commander of the Japanese 30th Division defending Mindanao, later related that American attacks were "much more severe and rapid" than he had expected.[35] Guerrillas and Marine Corps airstrikes facilitated a rapid seizure of the primary landing beaches and the airfield at Malabang, and Maj. Gen. Franklin C. Sibert, the X Corps commander, decided to land the bulk of the 24th Infantry Division at Parang instead.[36] This put them closer to Highway 1, the main route east.

Following an unopposed landing, the troops of the 24th Infantry Division moved rapidly east along Highway 1. American planners had correctly deduced that the Japanese would destroy the bridges along the highway and decided to use the boats of the 533rd Engineer Boat and Shore Regiment on the Mindanao River to seize key terrain further inland. A small fleet of gunboats and landing craft managed to secure the crucial town of Kabacan and the junction of Highway 1 and the north-running Sayre Highway on 21 and 22 April, forcing the Japanese garrisons to flee.[37] Importantly, the Mindanao River would provide the main line of communication for X Corps as it continued its advance.

The rapid American advance split the defending Japanese 30th and 100th Divisions, and with the landing

of the American 31st Infantry Division on 22 April, Sibert decided to send the 31st Division north along the Sayre Highway while the 24th Division continued to advance eastward to Davao City. Quickly arriving to the rear of the Japanese defenses around the Davao Gulf on 27 April, the 24th Division overwhelmed the defenders, capturing Davao City on 3 May. However, after the seizure of Davao, the 24th moved to eliminate the remainder of the 100th Division, finding itself forced to conduct costly frontal attacks through fields of dense abacá plants. Given his extended lines of communication and mounting losses, Maj. Gen. Roscoe B. Woodruff, the 24th Division commander, successfully lobbied to receive back his 21st Infantry Regiment from the X Corps reserve, but it took until the middle of July to destroy the Japanese 100th Division in close small-unit fighting that many 24th Division veterans said was the worst they encountered during the entire the war.[38]



(Figure from Stephen J. Lofgren, *Southern Philippines: The Campaigns of World War II* [1996], 25)

Figure 4. The Clearance of Eastern Mindanao

Meanwhile, the 31st Division continued its advance up the Sayre Highway, which turned out to be a "highway" in name only. Daily rains turned an uncompleted stretch of the highway into a muddy morass, while Japanese and guerrilla actions had destroyed all seventy bridges along the route in one form or another.[39] Finding the terrain more an obstacle than Japanese opposition, the 31st ground forward, in some cases being unable to reposition its artillery and requiring aerial resupply due to the unsuitable ground lines of communication. From 6 to 12 May, the lead 124th Infantry Regiment fought a tough struggle to clear dug-in Japanese from camouflaged tunnels and pillboxes, repelling two suicidal Japanese banzai charges and losing 69 killed and 177 wounded.[40] Subsequently, the 31st Division was able to seize the crucial airfields at Maramag and Malaybalay, somewhat easing its resupply issues.

To help the advance, Eichelberger ordered an amphibious landing at Macajalar Bay by the 108th RCT from the 40th Infantry Division, which advanced south as the 31st Division advanced north. Despite having to overcome a tough Japanese defense anchored on a steep canyon over the course of four days, the 108th was able to effect a link-up with the 155th RCT of the 31st Division and put the Americans in complete control of the Sayre Highway.[41] At this point, the Japanese 30th Division continued a slow withdrawal to the east, and even with an amphibious landing by the American 1st Battalion, 155th Infantry, which turned the 30th Division's flank, fighting continued until mid-August. Despite the continuing mopping up operations, Eichelberger declared the end of organized Japanese resistance on 30 June. The fighting on Mindanao from 17 April to 15 August cost American forces 820 killed and 2,880 wounded,

while the Japanese lost 10,000 killed in combat and another 8,000 to starvation and disease.[42]

Analysis

Overall, the fighting in the southern Philippines, although having low casualties for a World War II campaign, cost Eighth Army 2,070 killed and 7,000 wounded, close to the more than 2,300 U.S. deaths during the entire the war in Afghanistan.[43] While the Eighth Army's amphibious operations were generally unopposed, with the Japanese often withdrawing to more defensible terrain in the hilly interior of many islands, the Americans did have to overcome some stubborn Japanese positions, and the process of "mopping up" remaining Japanese forces, although often left to guerrillas, could take several weeks. Meanwhile, in a truly joint effort, much of the air support for Eighth Army's landings came from Marine Corps air groups, and the provision of Marine Corps air liaison officers directly with ground forces facilitated effective close air support.[44]

The conduct of so many amphibious operations in rapid succession, even with minimal enemy interference, represented a feat of planning and organization; in the words of distinguished naval historian Samuel Eliot Morison regarding Eighth Army's landings, "Whilst, in general, no shortages of troops, ships, or materials existed, there were so many of these operations that planners had a jigsaw puzzle of providing amphibious shipping and follow-up support."[45] After the close of the campaign, MacArthur, in a message to Eighth Army, stated, "My heartiest commendation for the brilliant execution of the Visayan campaign. This is a model of what a light but aggressive command can accomplish in rapid exploitation."[46]

How can the experience in the southern Philippines inform future U.S. Army operations, especially amphibious landings? Several factors can account for the Eighth Army's success, and the campaign provides several key considerations for future amphibious campaigns and island operations.

Eighth Army benefitted from significant staff continuity within its headquarters. Eichelberger had commanded the army since its activation in June 1944, and his chief of staff, Brig. Gen. Clovis E. Byers, operations officer, Col. Frank. S. Brown, and many of the other primary staff officers had been with him since the Buna-Gona campaign in New Guinea in 1943.[47] Thus, the Eighth Army staff had extensive prior experience conducting amphibious landings and working with other services and Allied partners.

The field army headquarters was not the only staff that was effective, however. From corps to battalions, subordinate headquarters in Eighth Army proved themselves equally adept at planning, resourcing, and synchronizing amphibious operations by units as small as a company during both simultaneous and sequential landings. The engineer special brigades (ESB) also displayed their depth of experience in supporting the relentless pace of operations with amphibious shipping and landing parties on beaches. The official U.S. Navy Seventh Amphibious Force history noted,

> The Engineer Special Brigade or the Shore Battalion of the Engineer Boat and Shore Regiment is believed to be the best solution developed for the still unsolved shore party problem in amphibious operations. Throughout the New Guinea and Philippines campaigns these units performed their missions well. With sufficient service troops attached, they have always been capable of accomplishing the main task of a shore party—the expeditious movement of supplies across the beaches.[48]

While the U.S. Navy currently possesses two naval beach groups, which fulfill a function like the ESBs, this will likely be an inadequate number of units if the U.S. military has to conduct several large amphibious operations simultaneously or in rapid succession. There would be initial teething problems with integrating Army forces and Naval Beach Groups, a relationship that is not habitual. Although the 7th Transportation Brigade (Expeditionary) trains for this mission as well, it may prove inadequate for conducting multiple landings rapidly. Therefore, Army planners must be prepared to designate additional forces to train and fulfill the role of the ESB, transportation brigade (expeditionary), or naval beach group in future amphibious landings.

Amphibious landings, however, were only the beginnings of operations. Leaders at all levels had to ensure a rapid unloading of combat power onto the beaches and then sustain operations inland through logistics over the shore using primitive or nonexistent ground lines of communication. Aerial or even riverine methods for extending operational reach were

necessary to keep maneuver forces advancing against the defending Japanese.

Current Army doctrine does not provide much for planning riverine operations, but given the number of rivers and other waterways on many large islands, the consideration of rivers not just as barriers to be crossed but as lines of communication should certainly remain for commanders and staffs.[49] Separately, the U.S. Army's rotary-wing capabilities along with potential future unmanned systems must be strongly considered for conducting resupply and backhauling personnel and equipment given the restrictive terrain in this theater. It is unlikely the future force will have the luxury of extensive ground lines of communication during all operations.

Eighth Army during the Victor operations did not possess any large units of fleet carriers and their extensive air wings, nor did it have a massive amount of amphibious shipping. However, it made extensive use of the shipping and assets that it did possess. Important among these were land-based aircraft of the Thirteenth Expeditionary Air Force and Marine air groups as well as the ESBs for their amphibious shipping. The rapid seizure and improvement of existing airfields were important to Eighth Army operations, but in the future, such facilities may present lucrative targets for enemy aircraft or guided munitions, so identifying austere locations for aircraft basing should be important planning considerations.

The guerrillas also provided valuable intelligence and combat units to Eighth Army. Effective liaison with the guerrillas and combined rehearsals enabled them to assist with airstrikes and even conduct amphibious operations on Mindanao using U.S. Navy landing craft. U.S. forces will likely conduct any future operations with troops from partner nations, and the effective coordination with guerrillas provides a model for cooperation with allies and partners, potentially with current Army Special Forces or security force assistance brigades.

Despite the difficulties that Eighth Army encountered and overcame, the future joint force may have even more difficulty than did the "Amphibious Eighth" if the enemy possesses extensive air and naval forces and antiship or antiaircraft missiles and antiaccess/area denial systems. Reducing, suppressing, or destroying such systems will be a high priority during any future amphibious operation. However, the southern Philippines campaign still provides valuable insights into the planning, resources, and training required to undertake a rapid series of amphibious operations in a short period and provide support to forces inland in restrictive terrain. Ultimately, the past cannot provide commanders and planners all the answers, but it allows them to ask many of the right questions and shape training objectives for forces who may have to operate in the Pacific. ■

Notes

1. Cole C. Kingseed, "The Pacific War: The U.S. Army's Forgotten Theater of World War II," *Army Magazine* 63, no. 4 (April 2013): 50–56. The reasons for that lack of attention on the U.S. Army's experiences in the Pacific have been laid out by historian Cole Kingseed and includes a Europe-first grand strategy; the maritime nature of the theater; the cult of personality built around Douglas MacArthur; unbalanced press coverage that focused on Army operations in Europe; and the savagery and racial tone of the Pacific War, which made it less palatable to remember. John C. McManus, *Fire and Fortitude: The US Army in the Pacific War, 1941-1943* (New York: Dutton Caliber, 2019), 4. To these factors, John C. McManus added another: "the chaotic and tragic debacles of multiple early Allied defeats," which exacerbated the obscurity of the theater and a collective desire to forget the experiences there.

2. John T. Greenwood, "The U.S. Army and Amphibious Warfare During World War II," *Army History* 27 (Summer 1993): 8.

3. Karl James, "South-West Pacific: Amphibious Operations, 1942–45," Soundings Papers No. 30 (Fyshwick, AU: Sea Power Centre-Australia, 2021), 1; Joint Publication 3-02, *Amphibious Operations* (Washington, DC: U.S. Government Publishing Office [GPO], January 2019), I-2.

4. Jon T. Hoffman, "The Legacy and Lessons of the New Guinea Campaign," *Marine Corps Gazette*, September 1993, 75.

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9. Waldo Heinrichs and Marc Gallicchio, *Implacable Foes: The War in the Pacific, 1944-1945* (New York: Oxford University Press, 2017), 329.

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11. S-3 Section, Headquarters, 658th Amphibian Tractor Battalion, *After Action Report, 658th Amphibian Tractor Battalion, April 43 thru 15 January 46* (n.p.: 658th Amphibian Tractor Battalion, 1946), 94.

12. Office of History, U.S. Army Corps of Engineers, *Put 'Em Across: A History of the 2d Engineer Special Brigade, 1942-1945* (1946; repr., Harrisburg, PA: Telegraph Press, 1988), 139.

13. Robert Ross Smith, *Triumph in the Philippines* (Washington, DC: U.S. Army Center of Military History, 1963), 589.

14. James P. Duffy, *Return to Victory: MacArthur's Epic Liberation of the Philippines* (New York: Hachette Books, 2021), 290.

15. Smith, *Triumph in the Philippines*, 597.

16. Lofgren, *Southern Philippines*, 13.

17. Rein, *Multi-Domain Battle in the Southwest Pacific Theater of World War II*, 162.

18. Smith, *Triumph in the Philippines*, 601; 10th Information and Historical Service, Headquarters Eighth Army (10th I&H Service, Eighth Army), "General Interrogation of Captain Sadayoshi Ishikawa, 25 July 1947," in *Staff Study of Japanese Operations on Panay Island* (n.p.: 10th I&H Service, Eighth Army, 1949), 7.

19. Far East Command, *Reports of General MacArthur*, 341–42.

20. The Americal Division got its name from a contraction of the words "American" or "America" and "New Caledonia." Formed in the United States and reinforced with units in New Caledonia when it arrived there in March 1942, the unit was saw combat on Guadalcanal and Bougainville in the Solomons before moving to the Philippines in 1944. Shelby L. Stanton, *World War II Order of Battle: An Encyclopedic Reference to U.S. Army Ground Forces from Battalion through Division 1939-1946*, rev. ed. (1984; repr., Mechanicsburg, PA: Stackpole Books, 2006), 185; figure 2 from 10th I&H Service, Eighth Army, "Plan of Attack, Cebu," in *Operational Monograph on the Cebu-Bohol Negros Oriental Operation, Victor II* (n.p.: 10th I&H Service, Eighth Army, 1947), 234 (page number refers to the PDF).

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22. Francis D. Cronin, *Under the Southern Cross: The Saga of the Americal Division*, 3rd ed. (Washington, DC: Combat Forces Press, 1981), 273–79. The acronym DUKW stems from nomenclature used by the General Motors Corporation that manufactured them: D-1942 production series; U-utility; K-all-wheel drive; W-tandem rear axles, both driven.

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24. Cronin, *Under the Southern Cross*, 282.

25. Ibid., 337.

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27. Cronin, *Under the Southern Cross*, 284–86, 295, 307.

28. Eighth U.S. Army Historical Section, *The Amphibious Eighth*, 26–27.

29. Command History Staff and Daniel E. Barbey, *Seventh Amphibious Force Command History, 10 January 1943–23 December 1945* (Shanghai: U.S. Navy, 1945), II-22.

30. Cronin, *Under the Southern Cross*, 343–47.

31. John C. Chapin, … *And a Few Marines: Marines in the Liberation of the Philippines* (Washington, DC: Marine Corps Historical Center, 1997), 21–22.

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33. Lofgren, *Southern Philippines*, 23–24.

34. Ibid., 25.

35. 10th I&H Service, Eighth Army, "Interrogation of Lieutenant General Gyosaku Morozumi, Commanding General of the Japanese 30th Infantry Division on Mindanao, P.I., 1944–1945," in *Staff Study of Japanese Operations on Mindanao Island* (n.p.: 10th I&H Service, Eighth Army, 1949), 2.

36. Smith, *Triumph in the Philippines*, 621.

37. Ibid.

38. Don Gordon, *24th Infantry Division: "The Victory Division" First to Fight* (Paducah, KY: Turner Publishing, 1997), 57.

39. Heinrichs and Gallicchio, *Implacable Foes*, 342.

40. Lofgren, *Southern Philippines*, 31.

41. Heinrichs and Gallicchio, *Implacable Foes*, 343.

42. Lofgren, *Southern Philippines*, 32.

43. John C. McManus, *To the End of the Earth: The U.S. Army and the Downfall of Japan, 1945* (New York: Dutton Caliber, 2023), 157; "Casualty Status, as of 10 a.m. EST January 3, 2024," U.S. Department of Defense, accessed 24 January 2024, https://www.defense.gov/casualty.pdf.

44. Chapin, *And A Few Marines*, 28.

45. Samuel Eliot Morison, *History of United States Naval Operations in World War II: Volume 13: The Liberation of the Philippines: Luzon, Mindanao, the Visayas, 1944-1945* (1950; repr., Champaign: University of Illinois Press, 2002), 215.

46. Eighth U.S. Army Historical Section, *The Amphibious Eighth*, 27.

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Members of the 5th Security Force Assistance Brigade train alongside Indian army soldiers during the Yudh Abhyas exercise in Rajasthan, India, 9 February 2021. (Photo by Staff Sgt. Joseph Tolliver, U.S. Army)

Enabling Division Operations across the Conflict Continuum

What an SFAB Can Do for You

Lt. Col. Eric B. Alexander, U.S. Army

It is 2200 hrs., and the 3rd Infantry Division (3ID) commander is beginning the commander's visualization meeting. Seventy-two hours prior, the 3ID division tactical command post, a High Mobility Artillery Rocket System battalion, a Multiple Launch Rocket System battalion, an attack aviation element from the combat aviation brigade, and a security force assistance brigade (SFAB) force package were rapidly deployed in support of a flexible deterrent option to contain a developing crisis. The commander looks around the room and asks if the partner force is ready if the enemy crosses the international border. The SFAB force package commander steps forward to present his assessment of the partner capability and their plan for the delay. The division commander listens as the force package commander briefs the partner plan. As the force package commander explains the partner plan, it becomes apparent they will need help with intelligence, surveillance, reconnaissance, and fires. The division commander turns to the chief of staff and asks about the impact of diverting assets from the division deep fight to enable the partner brigade. The chief of staff explains the ongoing coordination with the SFAB force package staff and outlines the risk to the division's deep fight. At the end of the discussion, it becomes clear that if the partner cannot hold for ninety-six hours, it will result in mission failure. The division commander is confident in the preparations between his staff and the SFAB force package should the crisis escalate to conflict. With division support SFAB advisors embedded with the partner force, the partner will be able to delay until U.S. brigade combat teams can arrive.

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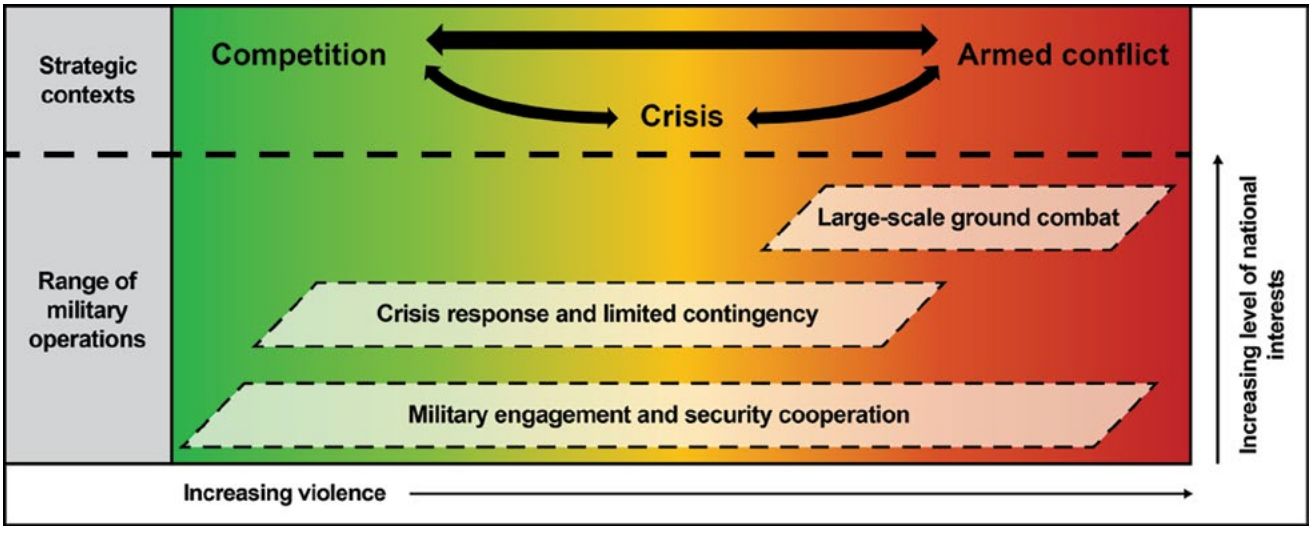
Same Old SFAB?

There are still many misperceptions of the role of the security force assistance brigade (SFAB) in the future force. Many in the Army view SFABs as a drain on organizational manpower in a constrained environment. They see their best and brightest officers and noncommissioned officers leave their formations for SFAB assignments. Money and equipment go to the SFAB, which could go to operational divisions. Others acknowledge the utility of SFABs in competition but see no role for the organization in crisis or conflict. Many of these beliefs derive from the original mission (Afghanistan) and stand-up of the organization (units having no recourse if a soldier opted for SFAB). The Army, writ large, is undergoing significant doctrinal, organizational, and training changes, shifting to large-scale combat operations (LSCO) as the center of the Army's operating concept. The SFABs are undergoing similar changes. The current and future SFABs are not what you might remember. Field Manual 3-0, *Operations*, redefines and clarifies the role of SFABs as part of multinational operations in support of unified action.[1] These changes should drive a fresh look at how SFABs enable division operations.

SFAB advisor force packages enable division-level operations across the conflict continuum (see figure 1).[2] Advisors provide tangible benefits to divisions during competition, crisis, and conflict. SFABs draw talented officers and noncommissioned officers (NCOs) from the operational force after they are complete with their key and developmental time. Advisors then return to the operational force with additional training and skills. If the operational force is going to commit scarce personnel resources, it is only fair to explain the return on investment at the organizational and soldier levels.

We Are All in This Together! The Operational Environment

Divisions, corps, and SFABs will find themselves in the same operational environment (OE) in the future. As described in Field Manual 3-0, this OE is a complex mix of competition, crisis, and conflict across multiple domains against adaptive and capable adversaries.[3] Army forces within this OE must gain and maintain the support of allies and partners to prepare forward-stationed forces to fight and win outnumbered and isolated. Not just U.S. forward-stationed forces but allied and partner forces are the most likely to absorb the initial shock of crisis and conflict.[4] During competition and crisis, adversaries will contest Army forces' deployment, seeking decisions before the United States can intervene.[5] Advisors address these gaps in brigade and division capabilities.



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

Figure 1. Army Strategic Contexts and Operational Categories

Ally and partner integration into future operations is a critical condition in the Army operating concept, and future operations will be multinational.[6] Communication, relationships, and understanding are critical in these multinational operations. Commanders in multinational operations must liaise effectively with partner forces to maintain an effective common operating picture. In addition to situational understanding, multinational allies and partners bring additional forces to operations and often possess capabilities U.S. forces lack.[7] The biggest challenge U.S. commanders will face in multinational operations is maintaining unity of effort with no formal command or support relationship with partner forces.[8] In the strategic context of competition, crisis, and conflict, "SFABs provide the ability to partner with conventional allied and partner forces."[9] This professionalized advising capability is resident only in the SFABs and provides a unique force multiplier to Army operations.

Pay Now or Pay Later? Your Investment during Competition

Serving as an economy of force operation, SFABs in competition buy back time and personnel by absorbing combatant command (CCMD) theater security cooperation (TSC) requirements. This allows brigades and divisions to focus on preparation for LSCO rather than conducting TSC tasks or responding to crises created by adversaries taking advantage of weak deterrence. Every advisor able to support CCMD TSC initiatives to improve partner capability creates less demand for rotational forces. Aside from absorbing TSC requirements, SFAB advisors set favorable conditions for arriving U.S. forces in the event of escalation to crisis.

Army forces assist allies and partners to improve their military capabilities and capacity during competition. They also build interoperability with partners, which will be critical if conflict erupts. "Preparation for combat operations and demonstrating the interoperability of the U.S. joint force with allies and partners presents the strongest deterrence to adversaries."[10] This deterrence provides several benefits for operational formations. Deterrence increases the likelihood a partner will be able to prevent escalation to crisis. It also decreases the likelihood of requiring U.S. brigades and divisions to deploy in support of a partner. SFAB competition missions assure allies and partners, improve interoperability, and ultimately increase the agility of the multinational force in crisis or conflict.[11] SFAB teams are executing these competition tasks on behalf of combatant commanders across the globe every day.

As part of security cooperation, SFABs "develop allied and other friendly military capabilities for self-defense and multinational operations, improve information exchange and intelligence sharing, provide U.S. forces with peacetime and contingency access, and mitigate conditions that could lead to a crisis."[12] In competition, SFAB teams deploy across the globe

continuously to assess, support, liaise, and advise foreign security forces (FSF). These activities take many forms at many levels, from tactical to strategic. In exercises, advisor teams work with the FSF to hone the team's mission essential tasks while training the FSF on core competencies and building interoperability. In some cases, teams are building capacity by helping the partner acquire new skills, increasing partner interoperability with the joint force, or facilitating partner employment of new equipment. In some CCMDs, advisors also support operations by training foreign partners to prepare contingents in support of multinational peacekeeping operations. Enabling contingents for peacekeeping operations provides FSF with valuable deployment and operational experience. These activities enable FSFs to be net security exporters and contribute to regional stability. Advisors work closely with their partners, understand their capabilities and limitations, and have intimate real-time knowledge of the geography and culture of the host nation. Building capacity and training with the FSF in competition provides access, influence, and familiarity that confers benefits during crisis and conflict. Brigades and divisions are the direct beneficiaries of these benefits. On entry into a crisis or conflict situation, the access, influence, and increased partner capacity provide distinct advantages to U.S. forces and reduce both risk to mission and risk to force.

There are multiple examples of SFAB benefits during competition. In the U.S. Africa Command area of responsibility, approximately one hundred advisors conduct the bulk of TSC requirements, negating the need for a regionally aligned brigade. This frees up 3,500 soldiers to focus on training and preparation for LSCO. Our advisors are working with our partners on their most pressing security concerns, training border security tasks to combat the expansion of extremism from the Sahel region. The training helps our partners refine their existing skills and build confidence. A small team working with the partner creates an outsized return on investment to address significant global threats. Simultaneously, those advisors are building rapport and relationships with their partners. This engagement reduces the need for U.S. forces by enabling the partner to stabilize the local security situation. Our advisors are working on similar efforts with multiple partners in Africa. In addition, one of our logistics teams works with our partner at the national level, assisting with improving distribution, maintenance, and sustainment interoperability. Some partners are major trainers for UN peacekeeping operations, preparing forces for missions across the continent. Our advisor efforts allow the partner to be a net security exporter, contributing to stability across the CCMD. This stability reduces the requirement for unilateral U.S. efforts, conserving precious readiness in U.S. brigades and divisions. Our advisors are creating relationships, building cultural knowledge, and supporting the military education system in many partner countries. The impact of advisors on the perceptions of the U.S. provides untold benefits to brigades or divisions that may one day operate with these militaries. All these advisor efforts, and many more globally, contribute to CCMD's great-power competition, setting favorable conditions to lower the likelihood of crisis and conflict.

Extrapolated across the CCMDs, the investment of five hundred to eight hundred advisors buys back nine brigades from the theater security cooperation requirements previously executed with the (regionally aligned forces) brigades. It also returns soldiers to brigades and divisions with unique experiences and skills. These advisors gain cultural experience and regional knowledge before completing their tours and returning to brigades and divisions across the Army. This reinvestment of talent from the SFAB benefits every unit receiving advisors by reinvesting adaptable and experienced leaders in your formation.

The Balloon Goes Up! If Deterrence Fails and a Crisis Develops, What Do You Get for Your Investment in SFABs?

While the benefits to divisions and brigades during competition are difficult to internalize, the benefits during crisis are more apparent. The rapport, knowledge base, and placement of advisors on the ground provide multiple benefits to the joint force in a crisis. If a crisis with an adversary arises, SFABs work with the partner to stabilize the situation, eliminating the need to deploy U.S. forces or buying time and space for multinational partner forces to arrive. SFAB teams ease the integration and improve situational awareness of arriving U.S. forces through liaison between partner and U.S. forces. If de-escalation is achieved, SFABs are the

ideal unit to assist the partner with reconstitution, relieving brigades and divisions from the task. SFAB crisis scenarios fall into two broad categories: (1) advisors are already present at the outbreak of crisis, or (2) SFAB advisors are deployed at the beginning of the crisis as a flexible deterrent option (FDO). Both scenarios generate similar benefits to brigades and divisions deployed in support of a partner in crisis.

The demonstration of U.S. commitment to the host nation and rapport developed with the FSF confer immediate benefits if the teams are in the country when the crisis begins. Advisors already in the country would provide critical indications and warnings before the crisis begins, enabling the joint force to respond more rapidly. Advisors deployed with their full equipment complement are well-positioned to respond both as liaisons for incoming multinational forces and to assist FSF in holding key terrain, enabling follow-on flexible response options (FRO). Advisors provide real-time operations and intelligence updates as a crisis develops. Advisors serve as key liaisons for joint reception, staging, onward movement, and integration (JRSOI) of incoming multinational forces. The ability to identify, coordinate, and confirm aerial ports of debarkation, seaports of debarkation, and JRSOI facilities for theater opening forces increases the speed of entry. To be clear, advisor teams train to augment JRSOI activities. Tasking advisor elements to execute JRSOI over extended periods reduces their ability to execute missions requiring specific advisor training. However, advisor team presence early in force generation enables designated theater opening forces to establish and execute JRSOI quickly. Specifically, the integration phase of JRSOI benefits from advisor team support. Teams brief leaders and arriving staff on the current ground situation, realistic cultural and geographic analysis of the operating area, and the assessment of the FSF operational situation.

A crisis in a country without advisor teams benefits from an FDO "to establish liaison capability or conduct security force assistance."[13] Deploying advisors signals a commitment to the partner nation. This FDO provides similar benefits to a scenario with an advisor team already in the country at the beginning of the crisis by providing intelligence, operational assessments, liaison, and support to an FSF. In this scenario, advisors are less effective at enabling JRSOI but can still serve to develop situational awareness of aerial ports of debarkation, seaports of debarkation, and coordinated staging areas for U.S. commanders. Advisor teams arriving as part of an FDO rapidly integrate with the FSF to develop a common operating picture and support the FSF with joint effects to assist in stabilizing the situation.

As a crisis progresses, SFAB advisor teams use robust mission command systems to relay critical operational and intelligence updates to the theater army or the joint task force headquarters if one is activated. The teams, under the direction of the theater army or the joint task force, liaise and support the FSF to form a credible defense, ensuring the survivability of allied forces in theater. The teams assess, support, liaise, and advise FSF to retain key or decisive terrain. This creates conditions to amplify additional FDOs and FROs as the joint force attempts to return to competition. Advisor teams embedded with FSF provide insight into partner actions and attitudes to contribute data on the effectiveness of FDOs and FROs. In the event deployment to the crisis nation is not feasible, advisor teams conduct generating (train and equip) missions in an adjacent nation, relieving U.S. brigades of the mission. In this scenario, tailored enabling force packages manage the receipt, distribution, and sustainment of military assistance materiel while training teams build capacity in FSF formations.

"Regardless of the capabilities employed, there are generally two broad outcomes from a crisis. Either deterrence is maintained, and de-escalation occurs, or armed conflict begins."[14] In a transition back to competition, SFAB advisor teams are an ideal asset to assess, support, liaise, and advise FSF in reconstituting forces following a crisis. SFAB teams are uniquely qualified to bring clarity to the confusion of the crisis either because they are already in the country or through rapid deployment to the crisis area as an FDO.

SFAB's contributions to crisis sound great, but practice is harder than theory. The Army agreed to test an operational SFAB crisis response during a first-of-its-kind National Training Center (NTC) rotation in February 2023. The 2nd SFAB deployed a force package to the NTC in support of the 3rd Infantry Division (3ID). In this scenario, a friendly nation was threatened by an invasion from a neighbor. The United States elected to deploy an SFAB FDO and an FRO consisting of a division headquarters (3ID), a High Mobility

Artillery Rocket System battalion, a Multiple Launch Rocket System battalion, and a combat aviation element. The SFAB element integrated with the partner force, replicated by the 1st Squadron, 11th Armored Cavalry Regiment, to assist with the planning of a delay if crisis turned to conflict (see figure 2). SFAB engagement with the partner allowed the division to understand the partner plan and resources required. This information was critical to determine the allocation of scarce U.S. resources between the division fight and the partner force deep fight should return to competition fail. An imbalance of resources in either direction could lead to mission failure. The link among the SFAB, the division, and the partner ultimately set favorable conditions when deterrence failed, and crisis turned to conflict.

Combat training centers are excellent preparation but are still only a proxy for real operations. A real-world example of SFAB crisis response and its benefits to brigades and divisions is ongoing operations in Europe. SFAB teams are supporting advising requirements previously performed by Army combat brigades. This prevents combat brigades from allocating personnel to these training and equipping missions, creating the operational space to focus on LSCO preparation. This creates operational depth in Europe, allowing rotational and forward-stationed forces to remain prepared in the event of escalation into conflict. How many additional brigades would need to rotate to the U.S. European Command to assume the training requirements fulfilled by advisor teams? Small investments of advisor personnel are benefiting much larger formations while also enabling partner forces to defend and deter aggression.

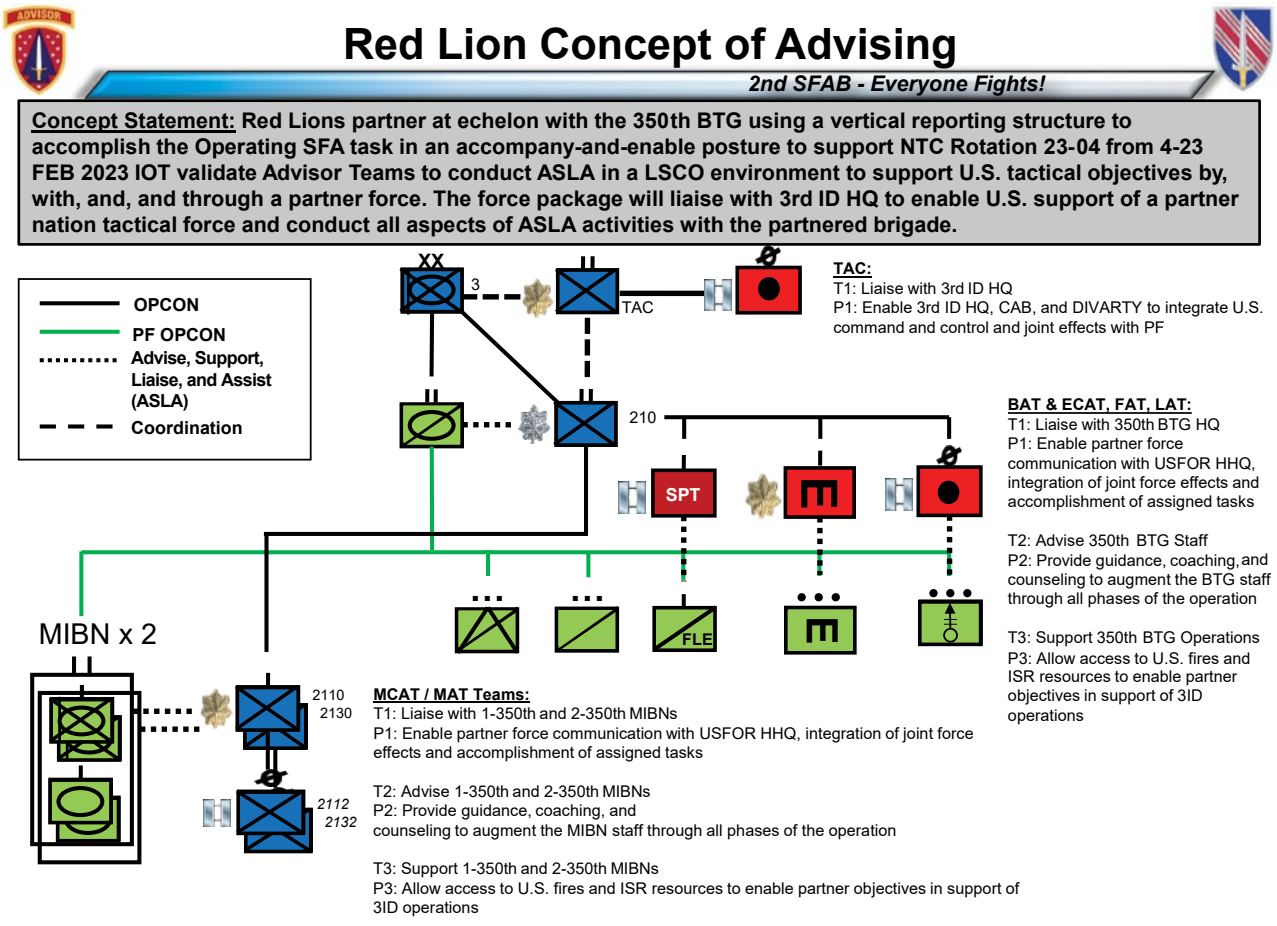
We Can Take It from Here. We Appreciate SFAB's Assistance

If crisis escalates to conflict, SFABs continue to add benefits to U.S. brigade and division operations. In an operational role, SFABs assess, liaise, support, and advise partner forces in support of multinational operations. Providing a realistic assessment of the capabilities and limitations of the partner force to adjacent brigades and divisions provides critical information to commanders. This analysis is integral to any combined operation with partner forces. SFABs are a critical two-way liaison for U.S. commanders. Through robust and interoperable mission command systems, they provide real-time intelligence, battle damage assessment, targeting information, and common operating picture to U.S. commanders. SFABs also provide intelligence and targeting information from U.S. forces to the partner, enabling better integration of effects. SFABs provide access to unique partner capabilities not in the U.S. inventory through the same mission command channels. Conversely, SFABs enable U.S. support to partner forces for joint fires, intelligence, and sustainment, allowing partner forces to better integrate into multinational operations. Finally, SFABs advise U.S. commanders on partner concerns, plans, desires, and other atmospherics while also advising partners on better ways to integrate into operations. All these functions allow U.S. commanders to increase combat power while minimizing the risk of miscommunication, fratricide, and mission failure through the inclusion of partners.

SFABs are prepared to "conduct liaison and support activities to enable multinational operations during armed conflict."[15] Two broad categories for SFAB employment logically present themselves in a LSCO conflict scenario. These categories are the two security force assistance functions, "operational" and "generating," found in Army Techniques Publication 3-96.1, *Security Force Assistance Brigade*.[16] The "operational" functions use SFAB teams to integrate an ally or partner into a multidomain operations campaign. The "generating" function uses SFAB teams to assist FSF with organizing, training, and equipping a force for future employment.[17] These categories are not mutually exclusive and can be assigned across an advisor force package at any level, varying chronologically based on the situation.

SFABs in LSCO sound great, but this is all just theory. Again, the Army tested the concept during NTC Rotation 23-04. The SFAB executed an operational role in support of the partner force and 3ID during a transition from crisis to conflict. At the tactical and operational levels, the SFAB element embedded advisor teams at echelon to accompany the FSF during combat operations.

In an accompanying and enabling role during the initial stages of the conflict, SFAB force packages liaised and supported partner forces to stabilize the operational situation. The force package used its robust mission command systems to link back to a small forward-deployed multinational headquarters (3ID) to enable our partner brigade to execute a successful delay. The force package



(Figure by author)

Figure 2. LSCO Concept of Advising

provided the headquarters with intelligence and situational awareness from the partner force. The headquarters provided access to multidomain operations capabilities like long-range precision fires, joint fires, electronic warfare, and intelligence, surveillance, and reconnaissance. These capabilities allowed advisors to support partner forces to achieve coalition theater opening objectives. The partner brigade conducted a successful delay over four days to allow the arrival of 2nd Brigade, 3ID, to resume the offense (during their subsequent rotation). The difficulty of executing operations when compared to traditional Warfighter exercises was one of the many benefits of NTC Rotation 23-04 as observed by 3ID. The friction of communications issues, equipment failures, and timeline delays caused by weather, terrain, and a thinking adversary created a much more robust training event for 3ID, the SFAB, and the enabler units deployed in support of the division rotation.

But Wait, There Is More!

There are other benefits to sending soldiers to become advisors in addition to the tactical and operational benefits conferred by SFABs in competition, crisis, and conflict. Soldiers return with additional military occupational specialty training and cross-training, certifications, cultural awareness, critical-thinking skills, training management experience, and experience interacting with senior military and civilian leaders. Soldiers also receive unique training in the SFAB directly applicable to the LSCO mission. Advisors can go to traditional and nontraditional courses such as prolonged field care, foreign weapons, advanced driving, master resilience, and master trainer courses. These courses provide diverse skill sets to soldiers returning to brigades and divisions. Aside from the glamourous courses, advisors are usually unit movement officers, hazardous material, and container certified due to the

decentralized deployment of SFAB teams in competition. This provides brigades and divisions leaders with critical deployment skills and experience. Although not all advisors become fluent in a foreign language, many gain language capability from cultural immersion and unit language programs. The multidisciplinary small team organization creates inherent cross-training between occupational specialties. For example, mechanics may learn maneuver. Maneuver advisors may learn communications. Medics may learn logistics. All advisors must learn some other specialties for the team to function. This cross-training creates leaders returning to brigades and divisions who are versatile and competent in multiple specialties. The nature of competition advising requires multiple repetitions of executing and planning small-unit training. The soldiers sent to become advisors return well ahead of their peers in training management. The decentralized nature of competition advising exposes leaders to complex problems requiring autonomy and creativity to solve. These repetitions increase the adaptability and flexibility of the soldiers returning to your units. Advisors often work at the brigade, division, national, and embassy levels during employment. These experiences produce mature, well-spoken leaders returning to divisions and brigades to lead soldiers at the next grade plate. Finally, the soldiers sent to become advisors enable the joint competition and campaigning concepts through their TSC work globally in every combatant command.[18]

SFABs provide a steady stream of trained and culturally aware soldiers back to brigades and divisions across the Army. To serve in an SFAB, officers and NCOs must be key developmental (KD) complete at their current rank. There are few or no modified table of organization and equipment positions in divisions or brigades for post-KD officers or NCOs before promotion. SFABs are looking for high-quality leaders who have completed their KD assignments and are ready to move out of the formation. The rumors of SFABs poaching talent are greatly exaggerated. SFAB experience helps leaders broaden following KD time and gets them back to operational units prepared to excel in their next KD assignments. So, not only does this investment return dividends at the tactical, operational, and strategic levels, but high-quality leaders are arriving back with skills and knowledge they cannot get anywhere else.

Is It Worth It?

SFABs enhance division operations across the competition continuum from competition to crisis to conflict. The operational force investment of talent is repaid with interest. Advisors during competition build rapport, enhance partner capability and interoperability, and create exporters of regional security. All these benefits set conditions favorable to U.S. units should escalation occur. In addition, the training and experience advisors gain in competition goes back into the operational force when they rotate out of the SFAB. During crisis, advisors provide critical liaisons for a partner to deter escalation or set favorable conditions if de-escalation fails. During conflict, advisors multiply combat power for the U.S. or coalition command by enabling the integration of partner forces into coalition operations. With all these benefits to brigades and divisions, the investment is a bargain. Now is the time to buy! ■

Notes

1. Field Manual (FM) 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2022), para. 2-65.
2. Ibid., 1-14, fig. 1-3.
3. Ibid., para. 1-4.
4. Ibid., para. 1-18.
5. Ibid., para. 1-17.
6. Ibid., para. 2-58.
7. Ibid., para. 2-59–2-60.
8. Ibid., para. 2-65.
9. Ibid.
10. Ibid., para. 4-3.
11. Ibid., para. 3-10.
12. Ibid., para. 4-43.
13. Ibid., 5-6, table 5-1.
14. Ibid., para. 5-3.
15. Ibid., para. 4-89.
16. Army Techniques Publication 3-96.1, *Security Force Assistance Brigade* (Washington, DC: U.S. GPO, 2020), 4-9.
17. FM 3-22, *Army Support to Security Cooperation* (Washington, DC: U.S. GPO, 2023), 2-9.
18. U.S. Joint Chiefs of Staff, *Joint Concept for Integrated Campaigning* (Washington, DC: U.S. Joint Chiefs of Staff, March 2018), 9.

Soldiers from the United Arab Emirates 11th Mountain Battalion and advisors from the U.S. 3rd Security Force Assistance Brigade prepare to conduct a night tactical movement 26 February 2023 during Joint Readiness Training Center Rotation 23-04 on Fort Johnson, Louisiana. (Photo by Maj. Jason Welch, U.S. Army)

Lewis and Stokes

What Lawrence of Arabia and His Sergeants Teach Us about the Modern Combat Advisor

Lt. Col. Garrett M. Searle, U.S. Army

To make sure of the arrested train required guns and machine guns. Accordingly, Egypt chose two forceful sergeant-instructors from the Army School at Zeitum … Their names may have been Yells and Brooke, but became Lewis and Stokes after their jealously-loved tools.

—T. E. Lawrence

T. E. Lawrence's autobiographical account, *Seven Pillars of Wisdom*, stands at the pinnacle of great wartime writing, not only for the ageless quality of its narrative but also because of the author's singular genius as a military advisor and tactician. Winston Churchill, who knew Lawrence personally and greatly admired both the man and his writing, wrote that *Seven Pillars* could reveal "all that is most vital in war."[1] While Lawrence is undoubtedly the protagonist of his own story, the narrative also incorporates the experiences of hundreds of other men engaged in the Great War and its Middle Eastern theater. These minor characters make up a key component of the book's vitality. In my reading, I was drawn to the story of two men I found particularly compelling, probably because they seemed the closest thing to dropping two regular fellows into Lawrence's otherworldly orbit. Lawrence introduces Sergeants Lewis and Stokes in the quote above as he prepares for a raid on the Hejaz Railway.[2]

The nom de guerre given to each by Lawrence reflected their respective expertise with the Lewis machine gun, a revolutionary .30 caliber light machine gun, and the Stokes mortar, the first modern 81 mm mortar system. Both weapon types are now ubiquitous on the modern battlefield, but in 1917, they represented a revolutionary change in the tools available to the infantry to support its fire and maneuver.[3] Lawrence clearly recognized their utility in his campaign. He brought in these experts to work alongside him in his advisory mission because he knew their knowledge and abilities would be vital to his partners' success and their supporting role in the larger campaign.[4]

Over one hundred years after their adventure in the desert, Lawrence and his two sergeants can still tell us a great deal about the role of an advisor in large-scale combat operations and the specific effect possible with the right combination of personality, knowledge, willpower, and external support. Their ability to bring new technology to bear in support of their partner and link his actions in time and space with the broader war effort exponentially increased the impact of the Arab Revolt within the theater. Today, the U.S. Army's modern advisor corps, found mostly in the Security Force Assistance Command and 1st Special Forces Command, are working to modernize their formations and improve their understanding of their role in supporting this kind of large-scale warfare.

Through an analysis of the experiences and impact of Lawrence and his two companions, Lewis and Stokes, this article explores the crucial role of military advisors in large-scale combat operations. By drawing parallels between historical insights and the challenges faced by modern U.S. Army advisor units, the study identifies essential components for successful advising, recommends structural improvements to enhance performance in contemporary warfare, and highlights the unique benefits of service as a combat advisor for both the soldier and the Army.

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Strategic Context

I wanted contact with the British; to act as the right wing of the Allies in the conquest of Palestine and Syria … In my view, if the revolt did not reach the main battlefield against Turkey it would have to confess failure, and remain a sideshow of a sideshow.

—T. E. Lawrence[5]

The Middle Eastern theater of the First World War was an economy of force effort for both the Triple Entente (Great Britain, France, and Russia) and the Central Powers (Germany and Austria-Hungary). After the Ottoman Empire (Turkey) joined the war on the side of the Central Powers, its participation immediately threatened the Suez Canal, which served as a vital link between the United Kingdom and its far-flung empire to the south and east.

After beating back two Ottoman attacks on the canal zone in 1915 and 1916, British strategy shifted to an offensive mindset in the theater, motivated in large part by postwar aspirations for the Middle East driven by an ultimately disastrous combination of imperialism, Zionism, and greed.[6] Support for a fledgling revolt among Arab tribes in the western region of the Arabian Peninsula, known as the Hejaz, was seen as a way to bleed the Turks,

T. E. Lawrence (*center*) holds a mortar round during a class on the Stokes mortar circa 1917 in Aqaba, Jordan. It may be Lance-Cpl. Walter Herbert Brook (Sgt. Stokes) loading the mortar round at the far left. (Photo courtesy of the Imperial War Museums)

and the British and French began investing resources to support it.

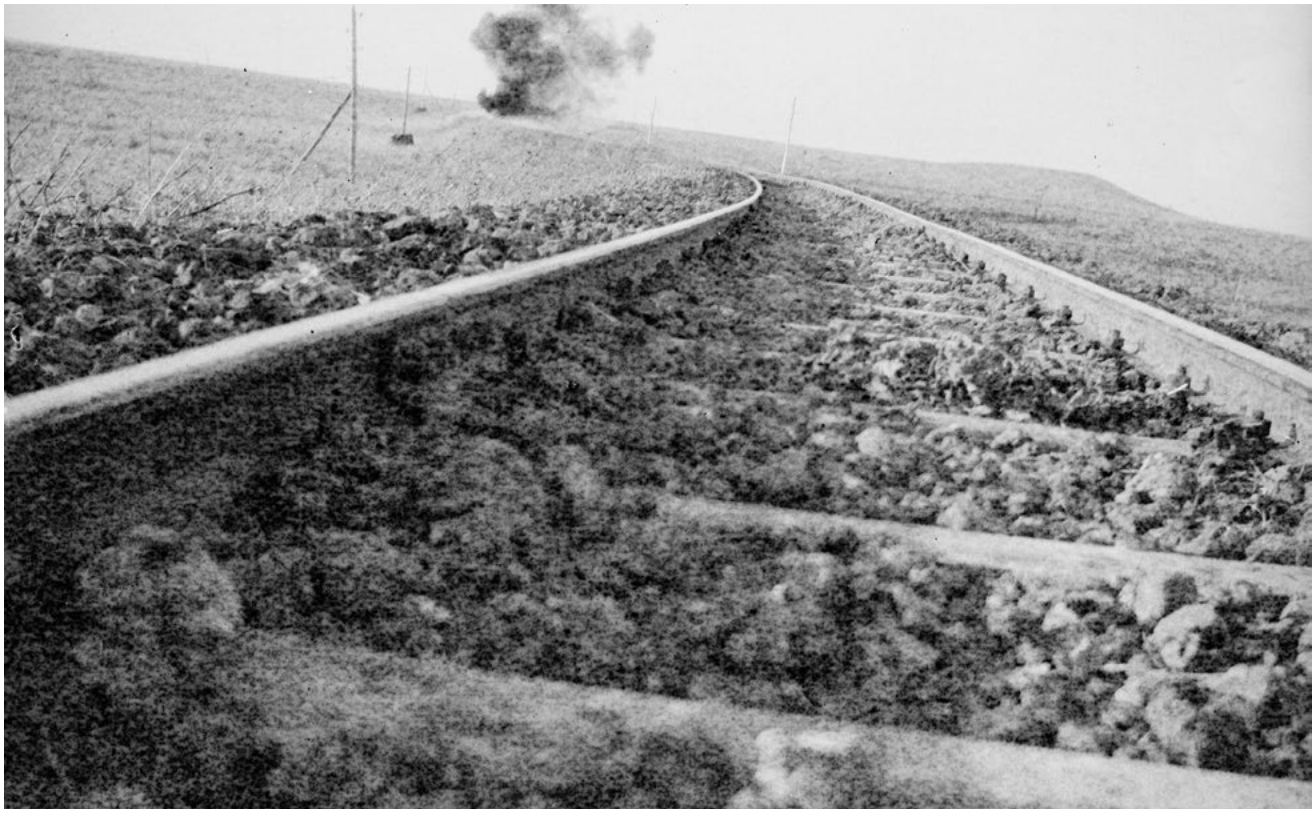
By a combination of fate and his own dogged maneuvering, Lawrence, then a twenty-eight-year-old captain without a day of real military training, became the principal liaison officer and advisor to the Arab Revolt. Prior to the raid described in this article, Lawrence won respect by engineering and leading a daring overland surprise attack by Arab tribesman to seize the strategically important port of Aqaba.[7] From that point, the Arab forces represented the right flank of the British-led push into Palestine. It is in that setting that we find Lawrence, Lewis, and Stokes training Arab irregular forces at their base at Aqaba and preparing for a raid on Turkish outposts and railroad infrastructure in eastern Syria.[8]

Lewis and Stokes: Who They Were

Lewis, the Australian, at such an ambitious moment, said that he and Stokes would like to be of my party. A new, attractive idea. With them we should feel sure of our technical detachments, whilst attacking a garrisoned place.

—T. E. Lawrence[9]

It is impossible to say what drew Sgts. Stokes and Lewis to volunteer for the dangerous and uncertain duty of accompanying Lawrence into the desert. However, their trajectory is certainly no great departure from that of many young men who have chased the opportunity for adventure, glory, and danger found only in close combat. We know very little about the men outside of their inclusion in Lawrence's story. Their real names were Sgt. Charles Reginald Yells of the 9th Australian Light Horse Regiment and Lance-Cpl. Walter Herbert Brook of the 25th Battalion, Royal Welsh Fusiliers. The official record includes their award citation for actions while accompanying Lawrence, memorable for its brevity and forthrightness. It ends with a description of the "great destruction wrought" during the raid, proving that these two men achieved their objective of finding real combat.[10] In the only other contemporary account of the attachment, journalist Lowell Thomas describes Yells (Lewis) as "a glutton for excitement and a tiger in a fight."[11] In my observation of the men and women who make up the ranks of the U.S. Army's modern advisor units, a longing for adventure



A bomb explodes on the Hejaz railway line circa 1917 near Daraa, Syria, during one of the numerous sabotage raids carried out by T. E. Lawrence. (Photo by T. E. Lawrence, courtesy of the Imperial War Museums)

and the draw of the foreign still play a major role in filling these all-volunteer forces, and a desire for these experiences is probably a requirement for success in the field. Our two protagonists were likely bored of their garrison work and volunteered for the raid to break free of the monotony that characterizes the vast majority of wartime experience.

From Lawrence's description of the men, we know that their personalities were quite different from one another. Lewis, the machine gunner, was the driving force behind their volunteerism and took more easily to their new positions embedded with the foreign forces. He was open and generous with his new allies, taking quickly to their ways, although probably not to the extremes exhibited by his commander. On the other hand, Stokes seemed to be driven inward by their new position abroad, becoming more resolutely British. Lawrence described him as a "John Bull," a kind of British Uncle Sam.[12] Both of these approaches engendered the respect of their partners in different ways, and their combination in various forms is critical to success as an advisor or trainer embedded with foreign partners.

To be successful, a military advisor must be simultaneously sure of their own foundations and willing to bend from predispositions when necessary to fit into the environment and demonstrate unity of purpose. Tipping too severely in either direction toward these poles will result in failure. An individual who "goes native" will lose sight of the mission they were sent to accomplish. On the other hand, a soldier who cannot empathize with his partner or looks down their nose at the culture, food, methods, etc., will find it impossible to build trust and will struggle as a foreign liaison and advisor. It should be noted that Lawrence himself was unique in his ability to bridge this dichotomy to the extreme. He was comfortable in Gen. Edmund Allenby's headquarters in Cairo with its polished floors and wicker furniture, and he was equally content in the Bedouin tents of the Howeitat with the red sand of Wadi Rum invading every orifice. Such capability is rare and should not be taken for granted.[13] Rather, advisor units should try to identify soldiers with a balance of these attributes who can remain focused on the objectives of their sending nation while simultaneously

remaining pliable to the cultural requirements and behaviors that will help build trust and lubricate the gears of partnership.

This requirement is among several factors driving the modern Army advisor units to maintain a robust assessment and selection process. The Army's special operations forces (ARSOF) have a long history of reliance on deliberate selection processes to bring the right people into their units. These assessment and selection programs include a combination of physical, cognitive, and interpersonal challenges, combined with conditions that induce stress and fatigue, to assess fitness for the specific role the candidate is seeking.[14] Since the security force assistance brigades' (SFAB) founding in 2017, the Army has maintained the need to make these units an all-volunteer force and implemented a tiered selection process. Although these units are not considered special operations forces, their advisors are embedded with foreign partners and must possess the right combination of attributes to be successful. Therefore, an assessment and selection process remains important for both the short- and long-term viability of these units. Recently the Security Force Assistance Command has begun an effort to expand its assessment program to include senior noncommissioned officers (NCOs) and officers, starting with team leaders, team sergeants, company commanders, and first sergeants. Previously, these advisors were hired based on completion of a key developmental position in their current grade and a panel interview. In-person assessment and selection will provide the opportunity to gain a more holistic understanding of their core competencies and emotional intelligence, ultimately leading to better and more effective advisor teams.

What They Brought to the Fight and What They Wrought

The enemy in the crescent of the curving line were secure from the machine-guns; but Stokes slipped in his first shell, and after a few seconds there came a crash as it burst beyond the train in the desert. He touched the elevating screw, and his second shot fell just by the trucks in the deep hollow where the Turks were taking refuge. It made a shambles of the place.

—T. E. Lawrence[15]

Lawrence was willing to risk bringing the two freshmen along because he knew their expertise would be critical to the success of his raiding effort and would build capability in his partners that would have lasting impact. Certainly, these new tools could make the difference between success and failure for his partners, but the only way to convince the Arab forces to employ the novel weapons was to demonstrate their effectiveness in life-or-death struggle.[16] To do that, he needed experts with him in the close fight that could integrate the technology at the decisive moment for critical effect.

That expertise is clearly demonstrated in the quote above, with both Stokes and Lewis having the ability (and the support of their commander) to move fluidly among the roles of trainer, advisor, and when needed, as machine gunner or mortarman. Throughout this article, I refer to Stokes, Lewis, and Lawrence as advisors, but that term seems to describe someone on the sidelines, offering a word of advice over the shoulder. The reality for these men, as it has been for military advisors in many other contexts, was a blurring of the lines between the roles of liaison, advisor, trainer, and combatant.[17] Prior to the mission described in the quotations, the two sergeants were working as trainers for the Arab forces in development. During the raid, they transitioned to a more direct role as combatants and leaders, as did Lawrence, who often served as a de facto commander during these expeditions.

The U.S. Army's modern advisor units, particularly the new SFAB advisor teams, include a diverse range of specialists who can apply their skills in support of a partner in conflict. The capability these teams offer is specifically oriented toward the tactical level of war, incorporated at the brigade level and below within a partner nation's military. At this level, they serve as advisors as well as fires, intelligence, and sustainment integrators. They provide functional expertise on weapons, communications equipment, small unmanned aircraft systems (UAS), mortars, artillery, and critical sustainment and maintenance equipment. More importantly, however, the diversity of the team structure allows them to move beyond the technical use of equipment and focus on integrating these systems into an operational concept—providing advice on how to fight with them in a combined arms approach.

Army advisors assigned to 1st Security Force Assistance Brigade employ an RQ-11B Raven small unmanned aircraft during tactical training at Fort Irwin, California, 17 August 2023. The advisors trained alongside role players and actual partners to prepare for large-scale combat operations. (Photo by Maj. Jason Elmore, U.S. Army)

Although the modern-day SFABs have a wide array of military occupational specialties and broad general capability to assist foreign military forces, they lack the means to quickly integrate specific and targeted expertise. The same is true in the ARSOF formations, where they have difficulty deviating from their organizational tables, exhibiting a preference for the sanctity of each "unit of action."[18] The organizational structure and doctrinal authority to quickly integrate expertise and rapidly adjust task-organization is absent for both. In a large-scale combat scenario, the foreign partner that they support will almost certainly need or ask for a specific capability that the generalist-focused SFABs will not be able to provide en masse. On the modern battlefield, this is most likely to be expertise in the employment of guided antitank missile systems, small UAS, loitering munitions, electronic warfare capability, long-range precision fires (like the High Mobility Artillery Rocket System, or HIMARS), and the combination of these systems into effective operational concepts.[19] One way to address this shortfall would be to draw a more formal linkage between advisor forces and the Army's Security Assistance Training Management Organization. That organization tasks and deploys specialized security assistance teams to train foreign partners on equipment or capability provided through a security assistance program. It can rapidly adjust its organizational table to hire the right expertise for a specific security assistance case. Combining that specialization with the operational advisor units would help create the kind of flexibility that will be required in conflict.

Certainly, the advisor force must have the ability to rapidly close knowledge gaps to meet partners' needs. However, recent training of military advisor teams at the Army's combat training centers (CTC) has shown that in a large-scale combat operations scenario, the advisors will spend more time in a liaison capacity, supporting their partners by providing access to or information from U.S. or allied military resources. During a recent CTC rotation, an advisor task force served as the connective tissue between a U.S. Army division and a friendly partner nation military defending against an

enemy attack. The connection was necessary to overcome a fires overmatch the enemy force had over the friendly partner. Division assets aided the partner with common operating picture development, protection against enemy rotary-wing threats, and fires delivery in support of the friendly close and deep fights. Advisor teams collocated with partner force command posts facilitated the integration of U.S. attack aviation, destroying over eighty enemy combat vehicles and artillery systems in a three-day period. This support ultimately enabled the partner to defend effectively and buy time for U.S. forces to build combat power.

> “Lawrence maintained close coordination and liaison with the commander of the British Egyptian Expeditionary Force, Allenby, and was able to align the Arab operations more or less with British objectives, maximizing the overall effectiveness of the combined war effort against the Ottomans.”

Despite this success, the emphasis on liaison and support functions means that the workload on an advisor team will be concentrated in a small number of leaders. Large-scale combat would test the Army's ability to maintain this kind of liaison with partners at the operational level on a broad scale. The tactical impacts seen in the story of Lewis and Stokes are interesting and visceral—a smoking train full of holes in the desert—but the real gravity of Lawrence's impact was evident at the operational level. His ability to coalesce the Arab resistance into a competent fighting force and apply that force on the theater's right flank contributed substantively to the ultimate success of the British forces against the Ottoman Empire in Palestine. This was possible due to a variety of factors, but Lawrence maintained close coordination and liaison with the commander of the British Egyptian Expeditionary Force, Allenby, and was able to align the Arab operations more or less with British objectives, maximizing the overall effectiveness of the combined war effort against the Ottomans.[20]

The Army's current military advisor forces have limited capacity for this kind of strategic advising. The ARSOF formations tend to focus heavily on the training and employment of their lowest-level units of action, led by captains: operational detachment alphas, psychological operations detachments, and civil affairs teams. During collective training events, actions by higher levels of command (company, battalion, and group levels) are weighted toward command-and-control functions rather than direct advising or support to partners. On the other hand, the SFABs employ a doctrinal model where each echelon of command, from the team to the brigade level, is principally an advisor team led by the commander at that echelon, with the ability to shift to more focus on command-and-control functions if required by the mission profile.[21] This structure (or emphasis) enhances the capability to engage in operational-level advising as described above. However, it is still considerably limited; each brigade has only a small number of officers and senior NCOs with the requisite experience and seniority to establish credibility as an advisor or liaison above the brigade level in a partner-nation military.

To prepare for this requirement, the Army should make several structural changes. First, with small changes to the Security Force Assistance Command headquarters, this formation could provide a standing strategic-level advisory capability. Second, the Army should develop a kind of advisor reserve (within both the Active and National Guard/Army Reserve Components) made up of senior officers and NCOs with previous relevant training and expertise that could be brought to bear when the need arose. Integrating this reserve would also mandate the authority to rapidly adjust the task organization of advisor teams to concentrate the expertise needed to advise and liaise with a partner at the division level or higher. Lastly,

the ARSOF enterprise should look to expand the use of its O-4 and O-5-led formations across all three of its core branches more directly as advisors and liaisons with foreign partners. This would capitalize on the experience and maturity of those leaders and improve performance in support of mission objectives that rely on these partners.

What They Took Away

From Akaba the two sergeants took a hurried ship to Egypt. Cairo had remembered them and gone peevish because of their non-return. However, they could pay the penalty of this cheerfully. They had won a battle single-handed; had had dysentery; lived on camel-milk; and learned to ride a camel fifty miles a day without pain. Also Allenby gave them a medal each.

—T. E. Lawrence[22]

In addition to the benefit to the mission or the objective, the work done by advisors like Lewis and Stokes has inherent benefits for the individual participant. It can be an incredibly gratifying experience for those that are brave enough to seek the opportunity and willing to accept its difficulties. Lawrence viewed those challenges as part of the reward, taking the Christian view that connects tribulations with strength and salvation.[23] This explains why he chose to highlight the difficulties of the experience as some of its most important benefit for the two NCOs. He understood that they would come away with both tangible and intangible rewards. The same is true for modern military advisors: their service with foreign partners makes them better leaders and humans because it demands development in empathy, competence, and perseverance. Perhaps its most important contribution, however, is experience—filling a young leader's basket with challenges overcome and new knowledge found.

Although Lawrence's description of the benefit focuses on the individual NCOs, we can also speculate about the diffusion of this benefit to the units to which they were assigned afterward. Their improved tactical competency and increased knowledge of the operating environment surely had tangible benefits in their next assignment. This diffusion of benefits is still a component of the value proposition for advisor assignments within the U.S. Army. When they were created in 2017, the SFABs were given a different force generation and manning model than the older and more established special operations units. Unlike ARSOF formations, which are composed of officers and NCOs that change their military occupational specialty upon entry and serve most of their careers within Special Forces, civil affairs, and psychological operations units, SFABs are filled with officers and NCOs that maintain their present military occupational specialty and serve for a finite period, typically two to three years. After SFAB service they rotate back to another conventional Army unit for the next position in their professional development progression. This means that other Army formations benefit directly from the growth and development that occurred during a soldier's service as an advisor.

Conclusion

As the U.S. Army modernizes to meet current and anticipated challenges, foreign partnerships and alliances will continue to play a critical role in any future landpower fight. The more the Army collectively supports its advisor units with manpower and resources, the better prepared it will be to build and maintain these critical linkages. Our partners will rely on us, and we will rely on them to overcome antiaccess/area-denial systems, build interior lines, and defend lines of communication in the initial stages of any conflict.[24] The example of Lawrence and his Arab forces demonstrates this symbiotic effect in the decisive stages of war and the role that partners can play in secondary operational theaters to reduce resources available to adversaries. Recent training by the Army's SFA enterprise is identifying gaps to be addressed to field the most effective advisor force in future conflicts. This training at the CTCs and in the Army's Warfighter exercises must be maintained and expanded to help close these gaps and build interoperability among advisor teams, the joint force, and our allies and partners.

At the individual level, the story of Stokes and Lewis reminds us of the important role our advisors will play and the requisite need to invest in their expertise and expand the availability of subject-matter experts in support of the advising mission. We must continue to select the best people to serve in this capacity and understand the importance of the right mixture of competence, empathy, and perseverance necessary for success. Most importantly, their story reminds us of the value that advising experience has for individual

officers and NCOs and the collective benefit to the force of their service in this unique capacity. Continued investment in this capability can only serve to improve our Army from the inside, and we must not lose sight of this important and lasting benefit to the service.

In 1917, it was Lewis and Stokes, but what would we name our sergeants in 2024? The prospect is made more difficult by the use of acronyms and so many meaningless combinations of letters and numbers for modern weapons. Perhaps we would want to have Sgt. Gustaf along for his expertise with antitank recoilless rifles and guided missiles. Certainly, Sgt. Switchblade's proficiency with small UAS and loitering munitions would come in handy.[25] Whatever we name them, the story of these advisors in large-scale combat is yet to be written, so we must do everything we can now to ensure our Nation's combat advisory capability is fully prepared for the next big fight. ■

Notes

Epigraph. T. E. Lawrence, *Seven Pillars of Wisdom: A Triumph* (1926; repr., New York: Anchor Books, 1991), 344.

1. Winston Churchill, "An English Classic," *The Daily Mail*, 29 July 1935, reprinted in "Churchill and Lawrence—Seven Pillars—Three Appreciations," International Churchill Society, accessed 4 January 2024, https://winstonchurchill.org/publications/finest-hour/finest-hour-119/churchjll-and-lawrence-seven-pillars-three-appreciations/.

2. The Hejaz Railway was the vital north-south running line of communication linking Palestine with the key population centers of the Arabian Peninsula. It represented a critical component of Ottoman control of the region.

3. Neil Faulkner, *Lawrence of Arabia's War: The Arabs, The British and the Remaking of the Middle East in WWI* (New Haven, CT: Yale University Press, 2016), 328–30.

4. The description of the raid that involved Stokes and Lewis, and the quotes that begin each section of this article can be found in chapters 61–68 of *Seven Pillars*. All told, it represents only about thirty pages of the book, so a small fraction of the overall work. In addition to the suspenseful raid, those thirty pages also include one of the most enigmatic sections of the story, where Lawrence's bath in a spring is interrupted by a mumbling geriatric, who he views as a prophet and whose unintelligible moaning results in a meandering tangent on the origins of Christianity. As such, the passage is a representative sample of the breadth of content found in Lawrence's story.

5. Lawrence, *Seven Pillars*, 274.

6. Scott Anderson, *Lawrence in Arabia: War, Deceit, Imperial Folly and the Making of the Modern Middle East* (New York: Doubleday, 2013), 152.

7. Ibid., 338.

8. See Nicholas J. Saunders, *Desert Insurgency: Archaeology, E. Lawrence, and the Arab Revolt* (Oxford, UK: Oxford University Press, 2020), 207–11; Faulkner, *Lawrence of Arabia's War*, 302–5. The raid described in quotes is known as the Hallat Ammar raid due to its proximity to the Hallat Ammar railroad station, located on what is now the border between Jordan and Saudia Arabia. Archeological work by the Great Arab Revolt Project in 2013 confirmed the location and geometry of the action.

9. Lawrence, *Seven Pillars*, 345.

10. A copy of the award citation for the two NCOs can be found in the Australian War Memorial archives: "Honours and Awards (Recommendation): Charles Reginald Yells," Australian War Memorial, accessed 3 January 2024, https://www.awm.gov.au/collection/R1560412.

11. Lowell Thomas, *With Lawrence in Arabia* (1924; repr., New York: Skyhorse, 2017), 145.

12. Lawrence, *Seven Pillars*, 345.

13. In fact, the polarity of these two ideas likely contributed to his depression later in life. He had difficulty accepting the strategic objectives of his nation vis-à-vis an independent Arab state.

14. Patrick Roberson, Stuart Gallagher, and Kurtis Gruters, "Demystifying the Art of Assessment and Selection," Small Wars Journal, 17 August 2022, https://smallwarsjournal.com/jrnl/art/demystifying-art-assessment-selection.

15. Lawrence, *Seven Pillars*, 368.

16. The raid described in this section of the book also had a real tangible benefit to the participating Arab forces since it resulted in a considerable amount of household property plundered from the destroyed train.

17. See Robert K. Sawyer, *Military Advisors in Korea: KMAG in Peace and War* (Washington, DC: U.S. Army Center of Military History, 1962), 140. The example of U.S. advisors of the Military Advisory Group to the Republic of Korea (KMAG) at the onset of the Korean War offers a good example of this blurring of roles.

18. "Who We Are," United States Army Special Operations Command, accessed 3 January 2024, https://www.soc.mil/USASFC/HQ.html. The U.S. Army's 1st Special Forces Command uses the term "unit of action" to describe its operational detachments and teams. See also R. D. Hooker Jr., "America's Special Operations Problem," *Joint Force Quarterly* 108 (January 2023), https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-108/Article/Article/3264605/americas-special-operations-problem/.

19. Donald Wilkins, "The 2022 Russo-Ukrainian War: Current and Future Employment of Unmanned Platforms Supporting Infantry Operations," *Infantry* 112, no. 2 (2023): 46–48, https://www.moore.army.mil/Infantry/Magazine/issues/2023/Summer/PDF/Summer23_INFMag.pdf; see also Josef Danczuk, "Bayraktars and Grenade-Dropping Quadcopters: How Ukraine and Nagorno-Karabakh Highlight Present Air and Missile Defense Shortcomings and the Necessity of Unmanned Aircraft Systems," *Military Review* 103, no. 4 (July-August 2023): 21–33, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/July-August-2023/Grenade-Dropping-Quadcopters/.

20. Gen. Edmund Allenby believed fervently in the utility of Lawrence's efforts with the Arabs, stating that their cooperation

was "of such importance that no effort should be spared to reap full benefit therefrom." Quoted in Sean McMeekan, *The Ottoman Endgame: War, Revolution, and the Making of the Modern Middle East, 1908–1923* (New York: Penguin Books, 2015), 360.

21. Army Techniques Publication 3-96.1, *Security Force Assistance Brigade* (Washington, DC: U.S. Government Publishing Office, 2 September 2020), para. 1-10.

22. Lawrence, *Seven Pillars*, 376.

23. Like the sentiment found in Romans 5:3: "We rejoice in our sufferings, knowing that suffering produces endurance."

24. Charles Flynn and Sarah Starr, "Interior Lines Will Make Land Power the Asymmetric Advantage in the Indo-Pacific," Defense One, 15 March 2023, https://www.defenseone.com/ideas/2023/03/interior-lines-will-make-land-power-asymmetric-advantage-indo-pacific/384002/.

25. Thanks to Maj. Paul Dunn for help with these noms de guerre. David Hambling, "Failure or Savior? Busting Myths About Switchblade Loitering Munitions in Ukraine," *Forbes* (website), 8 June 2022, https://www.forbes.com/sites/davidhambling/2022/06/08/failure-or-savior-busting-myths-about-switchblade-loitering-munitions-in-ukraine/. The Switchblade is a loitering munition made by AeroVironment that launches out of a tube and can then be flown by its operator into a designated target.

Members of Haiti's Department of Civil Protection and an aircrew with the 1st Battalion, 228th Aviation Regiment, Joint Task Force-Bravo, out of Soto Cano Air Base, Honduras, deliver humanitarian aid supplies from a U.S. Army CH-47 Chinook 25 August 2021 to residents in Maniche, Haiti. At the request of U.S. Southern Command, service members deployed to support relief efforts with the U.S. Agency for International Development for the people of Haiti after the nation was hit by a 14 August 2021 earthquake. The joint task force included all five branches of the U.S. military, as well as land, sea, and air assets from each branch. (Photo by Tech. Sgt. Marleah Cabano, U.S. Air Force)

The First Forty-Eight Hours

Maj. Cole Herring, U.S. Army

On 14 August 2021, a 7.2-magnitude earthquake shook a remote portion of the Tiburon Peninsula in Haiti. It was the region's worst earthquake in over a decade, leaving 2,248 people dead and 136,800 buildings damaged or destroyed on a remote island with limited access and scarce resources.[1] Overshadowing the natural disaster in Haiti was the mass evacuation effort in Afghanistan.

Back in Florida, the vibration of cell phones alerted the members of Special Operations Command–South (SOCSOUTH), a two-star level operational unit, as it recalled personnel and began planning to provide support if called upon. As a theater special operations command, SOCSOUTH holds the responsibility of providing a uniquely qualified team that can provide the geographic combatant command—U.S. Southern Command (SOUTHCOM) for the Caribbean—with timely, on-the-ground situational awareness and assessment of the assistance that the military can provide.[2] To begin, SOCSOUTH went immediately to the

archive of lessons learned from the support provided in response to the earthquake in 2010. By Sunday, 15 August, a situational awareness team consisting of fourteen personnel from SOCSOUTH departed for Haiti.

Upon request for support from the Haitian government, and shortly after sending a small team to Port-au-Prince to assess the situation, U.S. SOUTHCOM created and designated authority to Joint Task Force–Haiti (JTF-Haiti) for organizing and coordinating relief efforts provided by the U.S. military.[3] This left the question of who should lead an interagency mission in a time of crisis. SOUTHCOM charged SOCSOUTH with leading the military's effort, but the military played a supporting role to the U.S. Agency for International Development (USAID).[4]

The elephant in the room was why a special operations headquarters was given a humanitarian assistance and disaster relief mission. Two main factors influenced SOUTHCOM's decision to have SOCSOUTH lead JTF-Haiti. Through a recent training exercise, SOCSOUTH demonstrated and validated its ability to lead a joint task force through an immediate response scenario. This training exercise helped SOCSOUTH refine its command-and-control processes to provide a ready force. The other reason was driven by a more inherent characteristic of special operations units. Due to the limitations of Haiti's infrastructure and unknown situation, a small and effective military presence was more palatable.

Special operations units are uniquely suited to operating in small teams, within austere environments, and with multiple disparate groups to accomplish complex missions. SOCSOUTH possessed other skill sets that proved to be useful in the humanitarian assistance and disaster relief mission. These included the ability to respond quickly, identify key leaders, build partnerships, work with other agencies, continually seek areas for improvement, and cut through bureaucracy to accomplish the mission. These traits enabled JTF-Haiti to weave collaborative partner relationships in a more perfect union to quickly save lives and provide aid to a country in need.

Overshadowing the worst natural disaster in Haiti since 2010 was the mass evacuation effort in Afghanistan. This was an effort that took most of the military's strategic air assets and the 82nd Airborne Division's immediate response force.[5] Normally, a C-5 aircraft that can transport helicopters would be used to get the helicopters to their staging locations. In this case, the pilots themselves would have to fly the helicopters from their current locations, which included Honduras and Puerto Rico. All the military personnel would also flow into the country without the use of strategic airlift.

Once the situational awareness team landed, they searched for an area to establish a footprint for the small expeditionary cell. They erected a tent equipped with a small satellite communications kit in a soccer field just outside the embassy building but within the embassy walls. They set up in this location because the military country team that worked in the embassy told them there was no space available in the embassy. In hindsight, the embassy had ample space available for the small situational awareness team.

To get the job done, most of the team used work or personal cell phones for internal communication with others in Haiti. They were also using them for external communication to all personnel and supporting agencies outside of Haiti. This included communicating with ships at sea, personnel in the United States, and personnel in multiple different countries outside of Haiti. The limited cell service frequently caused dropped calls and further complicated communication.

In hindsight, there were conference rooms in the embassy that had ports for high-speed fiberoptic internet. Additionally, most personnel still left the embassy around 3 p.m., which also left an option to use available ports and phones after they departed. Unfortunately, these opportunities were identified by JTF-Haiti personnel a week later, and had they been used initially, it would have enabled JTF-Haiti to provide aid to the Haitian people even faster. It also highlights a need for the Department of Defense country teams to continually

Maj. Cole Herring, U.S. Army, is a Special Forces officer with eighteen years of experience. He served as the aide-de-camp to the Special Operations Command–South commander during the disaster response operation in Haiti and personally witnessed the events described in this article. He believes in the importance of continually improving the integration and cooperation required to use a whole-of-government approach to solving our current security challenges.

plan for the integration and support of military forces during a crisis.

Shortly after the communications tent in the soccer field was set up, it was taken down in preparation for then Tropical Storm Grace. Just before the storm's arrival, an Air Force special tactics squadron team of six personnel arrived to conduct airfield assessments, bringing the total number from JTF-Haiti, also known as "boots on ground," to twenty.

"The aid needed to get to the remote areas, which were the hardest hit and home to the most desperate people. The rainfall caused mudslides and flash flooding, making access to remote areas difficult, if not impossible, for trucks large enough to transport aid."

Days Two through Seven: After the Earthquake

Tropical Storm Grace exacerbated the need for a rapid response, and it hit as the Haitian people were still recovering bodies from the rubble. Just forty-eight hours after the earthquake, the storm dropped fifteen inches of rain with wind at 37 knots, which delayed air transport.[6] The aid needed to get to the remote areas, which were the hardest hit and home to the most desperate people. The rainfall caused mudslides and flash flooding, making access to remote areas difficult, if not impossible, for trucks large enough to transport aid. Further compounding the issue was security. Gangs and desperate people intercepting the aid before it reached the point of need was a reality that the planners needed to consider.

JTF-Haiti had grown to include twenty-two helicopters, six ships, and eight transport planes. Despite the technical command-and-control structure, international military partners from the Netherlands, France, and the United Kingdom energetically integrated with JTF-Haiti. Other international players not tied in with JTF-Haiti were still considered as they impacted the overall distribution plan.

On 17 August, Rear Adm. Keith Davids, the commander of SOCSOUTH and now JTF-Haiti, arrived with nine personnel, adding to the twenty personnel already on the ground. The flight had been scheduled for the previous day but was delayed due to the tropical storm. The antennas for communication were still being set back up, which meant that on the first day, the team's only means of communication with the assets and planning team back in Homestead, Florida, remained their cell phones. Having soldiers on the ground enabled the JTF-Haiti commander to make decisions faster and give vocal approvals, which expedited traditionally bureaucratic processes.

From the onset, SOUTHCOM declared the mission would be conducted on unclassified networks. This was an early decision based on a previous after action review that played a key role in the success of the mission. It was far easier to work with the Haitian authorities, USAID, charitable organizations, and international partners with unclassified information. Intuitively, one might think it would be easier to work on unclassified systems. However, this proved to be the opposite, as the processes strained the intelligence personnel. Military exercises are also done on classified networks. These exercises are where personnel create standard operating procedures and become familiar with the programs that are used. Using only unclassified networks created an unforeseen learning curve throughout the organization; for example, setting up military internet relay chat rooms to flatten communications. With unclassified systems, Microsoft Teams required approval to bridge between the SOUTHCOM and special operations network. Additionally, a WhatsApp thread contained the most up-to-date information. Yet at Homestead Air Reserve Base, cell phones are not allowed. This meant that initially, the entire support team at SOCSOUTH did not have the most up-to-date information. Eventually, personnel retyped what was in the WhatsApp thread into ChatSurfer so that everyone everywhere had situational awareness and the most up-to-date information.

A room inside the embassy was provided for a video teleconference to run daily battle rhythm events, which

included a daily mission update brief with SOUTHCOM and a commander's update brief to the JTF-Haiti commander. The team began working on its first step: understanding. The simple question "How bad is it?" was difficult to answer. Some areas that reported the need for help requested assistance that was needed before the earthquake. This created a requirement to distinguish between the areas that were in need before the earthquake due to extreme poverty and the areas needing aid because of the earthquake. The Haitian agency responsible for the entire relief effort was the Civil Protection Agency (CPA).[7] The CPA is essentially the Haitian version of the U.S. Federal Emergency Management Agency. The JTF-Haiti commander conducted a joint reconnaissance with the leader of the CPA and USAID. They used a military helicopter to land in multiple remote locations and talked directly with the local leaders. After seeing and talking directly with the people, it was easier to understand what aid was needed because of the earthquake.

The head of USAID and the JTF-Haiti commander established a daily update to the ambassador. Establishing this meeting in person was possible because JTF-Haiti was executing mission command near the embassy instead of on a ship or in an isolated area, both of which had been considerations during planning for locations to conduct mission command. These daily updates synchronized information and were essential in facilitating a whole-of-government approach.

The next step was bringing stakeholder organizations in to work together. JTF-Haiti identified a need for synchronization across all the key stakeholders and needed to bring them together without officially having the power to do so and while remaining in a supporting role to USAID. Using their relationships and not from a position of authority, JTF-Haiti tactfully assembled leaders from the United Nations, USAID, charitable organizations, the CPA, and the Haitian National Police. Previously, they had not all sat together in a room to discuss the relief effort.

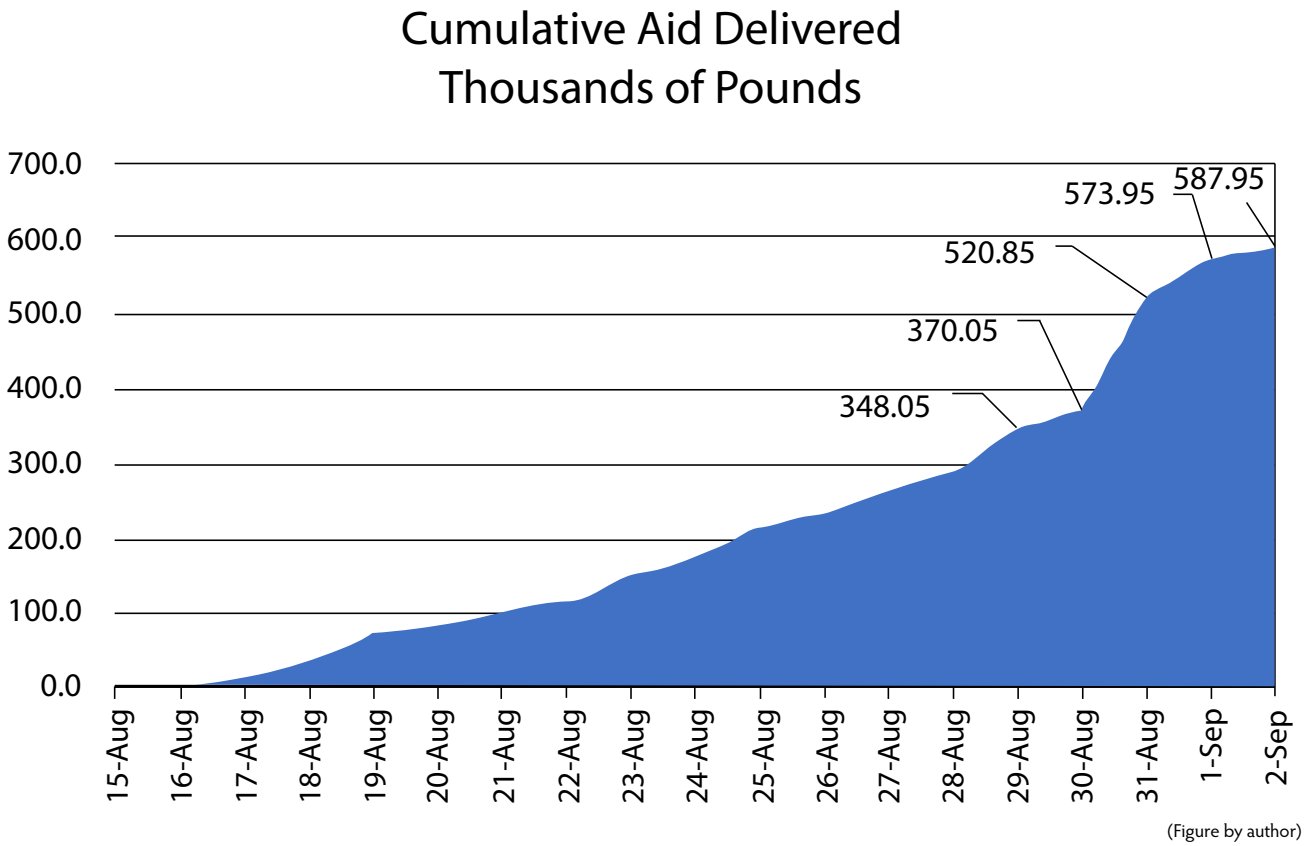
JTF-Haiti identified the flight line as the center of gravity and formed a civil-military operations center there.[8] The flight line was where the aid was stored, so planners could see what needed to be delivered. Inside the civil-military operations center was a representative from USAID. The representative would input the request for support into the mission tasking matrix, which is the formal process used to generate a request from USAID to the Department of Defense to deliver aid. She sat next to the air planners. Proximity made the processes happen in conjunction with each other. It was also where the aid was loaded, so planners could communicate changes quickly.

"The JTF-Haiti team worked eighteen to twenty hours per day building partnerships, optimizing the delivery of aid, creating load plans, creating safety plans, attempting to establish a footprint, creating contingency plans, and essentially ensuring the aid could be delivered rapidly the following day."

The JTF-Haiti team worked eighteen to twenty hours per day building partnerships, optimizing the delivery of aid, creating load plans, creating safety plans, attempting to establish a footprint, creating contingency plans, and essentially ensuring the aid could be delivered rapidly the following day. Though everyone performed well, it was admittedly an unsustainable pace for the first week.

Days Seven to Eighteen After the Earthquake (Military Mission Complete)

On 21 August, the footprint increased, and tents were set up in a Haitian hangar. The tents had air conditioning and power. Some were used to provide space to sleep, and others were used to create an operations center. The additional personnel and equipment significantly improved connectivity and communication with personnel stateside. They also allowed for operations at a sustainable pace.



(Figure by author)

Figure 1. Cumulative Aid Delivered

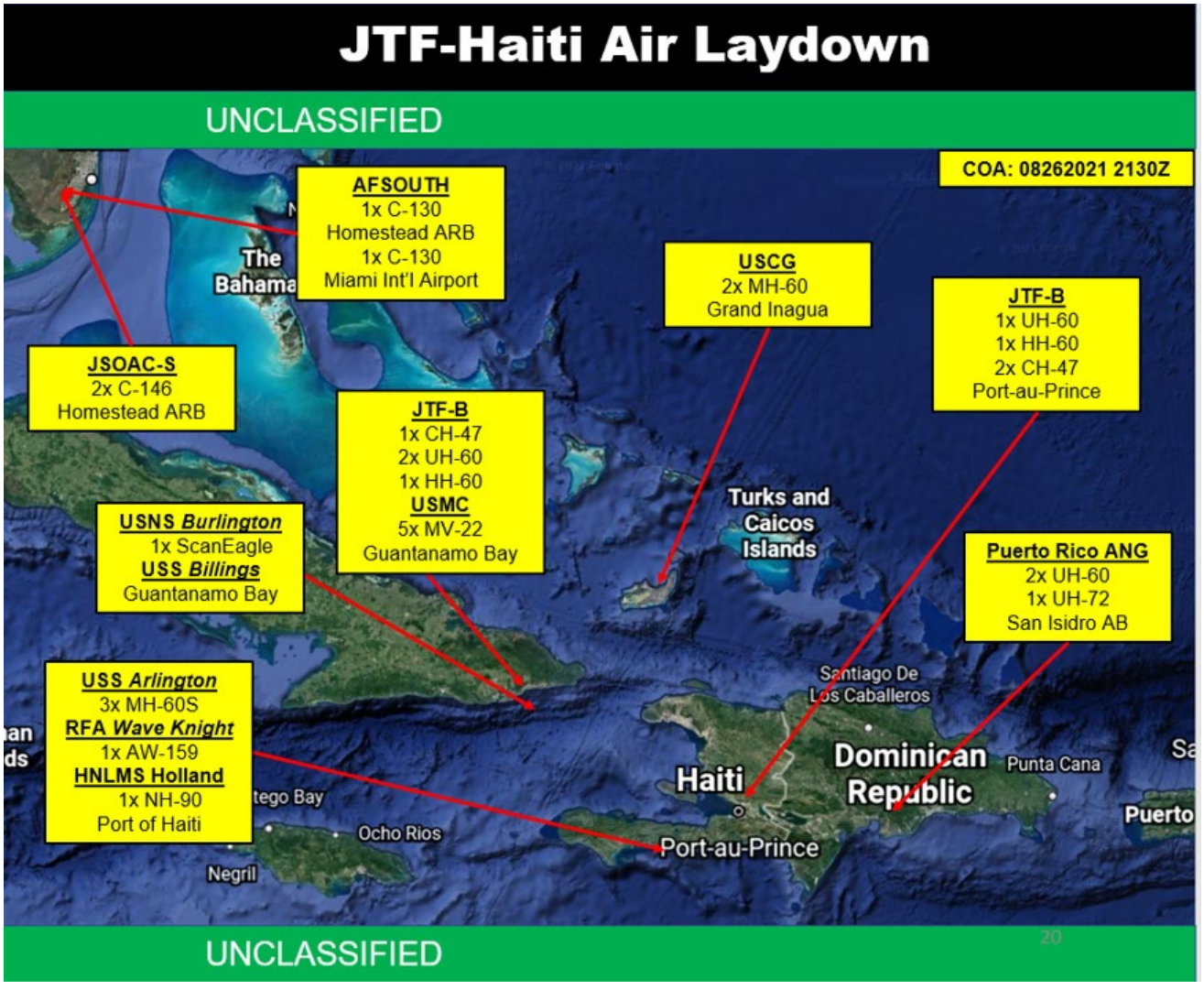
As part of the planning, the team also created a messaging plan. They communicated to the local population in the most remote areas in Haitian Creole, warning them to stay away from helicopters for their safety. They messaged through charitable organizations on the ground, local leaders, local radio, and social media.

Establishment at the hangar also allowed the pilots and crew to park their aircraft and remain overnight in Haiti. Even with the increase in personnel, the core SOCSOUTH personnel never exceeded forty personnel on the ground. Most of the staff stayed in Florida and provided support to the forward element. The total number of JTF-Haiti personnel on the ground including pilots, crews, maintenance, and fuelers would hover around one hundred.

JTF-Haiti also worked to use the ships to deliver aid. The first concern was security at the port, and then a concern about accountability of the aid from charitable organizations. JTF-Haiti worked with the national police director and head of CPA to ensure the port at Jérémie had sufficient security for the delivery of a large shipment of aid from a small amphibious transport ship known as a landing craft utility. Local police provided security at the port, while a large chain of U.S. marines, U.S. Navy sailors, and local Haitians unloaded over one hundred thousand pounds of aid by hand throughout the entire day.[9] The trucks could not drive onto the pier due to the damage from the earthquake, so a human chain was made to move the aid from the vessel to the trucks.[10] The chain was a symbolic reminder of what can be accomplished when everyone works together to accomplish a single goal: to get aid to those most in need. The distribution of aid significantly increased due to the efforts to optimize the distribution (see figure 1).

Optimizing Aid Delivery

JTF-Haiti quickly realized there were bottlenecks slowing the delivery of aid. Army helicopters flew from Honduras and staged at Naval Station Guantanamo Bay (GTMO) in Cuba. Marine Corps CV-22 Osprey aircraft



(Figure by author)

Figure 2. Air Laydown on 26 August

were also staged there. Deck landings and overwater training proved to be critical. The USS *Arlington*—a Navy ship that can refuel helicopters, launch its own helicopters, deliver aid, and conduct beach landings—was used to reduce risk by positioning in a manner so it could respond in the event of an emergency. The Puerto Rican National Guard also brought in helicopters that staged out of the Dominican Republic. The U.S. Coast Guard sent aircraft that staged from Grand Inagua in the Bahamas. The air assets began flying out of their respective staging areas daily to Haiti to transport aid (see figure 2). This meant that valuable flight hours were used to get to and from the location. For the aircraft departing from GTMO, pilots were using two hours of flight time just to arrive in Haiti, and another two hours to fly back. When they arrived, they had to refuel and load the aid that needed to be delivered. JTF-Haiti worked with the Department of State to quickly reach an agreement with the Haitian government that permitted the U.S. military to use a hangar connected to the international airport in Port-au-Prince. Within twenty-four hours, a small tent city consisting of ten tents with cots, air conditioning, and power was up and running. This coincided with the increase of staff personnel arriving. Support for portable toilets and showers was contracted and brought to the area.

This agreement allowed the pilots and crew members to park their aircraft and stay in Haiti. Pilots can only safely fly a limited number of hours per day, and staying in

A marine with Joint Task Force-Haiti (JTF-Haiti) and volunteers help offload boxes for redistribution in Port of Jérémie, Haiti, 31 August 2021. Marines and sailors from the USS *Arlington* were supporting JTF-Haiti during the humanitarian assistance and disaster relief mission following a 14 August 2021 earthquake. (Photo by Cpl. Alize Sotelo, U.S. Marine Corps)

Port-au-Prince added four to five hours of flight time per helicopter that could be spent delivering aid. They could refuel and have the aircraft loaded the night prior. They also did not need to fly over water for a total of four hours going to and from GTMO. Pilots and crew members would wake up and be five hundred feet away from their aircraft. Staying in a hangar in the airport was significant because there were limited means of ground transportation within Haiti. Security concerns and gang activity limited other lodging options like hotels.

An issue that was identified concerned contracted maintenance support. Contracts were written in a manner that stated contractors' standard of living needed to be a barracks equivalent or higher. Hotels were not available, and the tents with cots were not sufficient for contracted maintenance personnel because of the way the contract was written. Although rectified, it was a reality that caused a delay in maintenance.

Another issue identified early was refueling. Initially, air assets were waiting an average of ninety minutes to refuel at the airport. (Unlike the 2010 earthquake, the international airport remained open.) To assist in this bottleneck, the USS *Burlington*, USS *Arlington*, and the United Kingdom's RFA *Wave Knight* were used to refuel. A second fuel point was also established on the ground using fuel blivits. This reduced the refueling time to an average of ten minutes.

The significant increase in air traffic that the U.S. assets brought to the airport raised safety concerns. JTF-Haiti and the Department of State created an agreement with the Haitian government that placed U.S. airmen into the Haitian control tower to observe. Immediately they increased safety and optimized the process. Additionally, the team established a system to park the aircraft safely. The Haitian control tower directed the U.S. aircraft to their designated area. The Haitian personnel in the tower then

focused on the international traffic coming in and out of the country. From there, U.S. military personnel gave more detailed information to the pilots and guided them safely into a parking spot. The aircraft was then loaded with aid or refueled. The system removed a significant burden from the Haitian air traffic controllers and greatly improved safety.

Another bottleneck was the cargo. The cargo arrived from benevolent organizations at the main airport. The problem was that the aid would not be configured for transport in a helicopter. The planners also did not know what aid was available to be delivered until it arrived at the airport. Identifying and fixing this key logistical issue with an experienced planner minimized the loading time of the aircraft.

Recommendations

A whole-of-government approach means whole-of-government exercises and campaigning. Incorporate nonmilitary communication systems into military exercises. The reality is that we must be able to use whatever our partners are using to communicate; then, we need to incorporate that system, even if that system has significant security flaws. This is especially important during a crisis response, when there simply is no time to force a change to another system. During the response, WhatsApp and Signal were used due to their reliability to send messages when the cellphone signal was weak or intermittent. Even in the most remote areas, WhatsApp worked; therefore, charitable organizations, USAID, the Haitians, and JTF-Haiti personnel forward used the app heavily. Communication from the personnel in Haiti to everyone else was through chat surfer, Microsoft Teams, or other standard unclassified military communication systems. In the country the dominant platform used was WhatsApp.

Military teams in embassies, especially those in areas prone to natural disasters, should identify staging locations that can support a small footprint in the vicinity of, or in, key airports. They could then work with the Department of State to create preexisting agreements that would allow the U.S. military to respond faster during a natural disaster.

Integrate ships to deliver humanitarian assistance into exercises. Using the ships' capability sooner would have provided more aid to the Haitian people. One issue was resistance from charitable organizations, which gave USAID pause on using the ship. The concerns were because the organizations no longer have accountability for their aid when it is loaded onto a ship. With a helicopter they see it loaded and have someone on the receiving end to receive it shortly after. Through building relationships, identifying the real reason for concern, and addressing these concerns directly, the ships were eventually placed into action to deliver aid. In exercises, ships could deliver small amounts of aid and work with charitable organizations through USAID to normalize the processes of using ships.

The risk to forces should be weighed against image concerns. Part of the pressure to have low numbers on the ground was an image concern. One was that the U.S. military numbers should not exceed USAID numbers because the military was in a supporting role. Additionally, some U.S. personnel were sensitive to an image of a U.S. invasion due to the history of the Marine invasion and occupation in 1915–1934.[11] Image concerns should continually be reassessed to see if they are valid and verify that they are worth any risk incurred. Most Haitians were concerned about food and water following the disaster. The U.S. belief that Haitians would perceive the U.S. military as an invading force was not the reality on the ground.

Use crowdsourcing combined with artificial intelligence software to build an initial understanding of the situation. Even in the remote areas where people lacked shelter, they had cellphones and cellphone service. A system could be established where the local populace texts pictures to a number, and then those pictures are automatically uploaded and plotted according to the location in the metadata of the picture. This would help the host nation, charitable organizations, USAID, and the U.S. military quickly build an understanding of the situation. For example, knowing if a mudslide is blocking a route could be answered quickly and at scale. Combined with a reward program, this initiative could provide intelligence at the speed of relevance at a low cost.

JTF-Haiti's logistical speed and reach overcame limited access to provide 587,950 pounds of aid and save or assist 477 lives in under three weeks.[12] The event left many lessons learned and best practices to sustain. The U.S. military capability was displayed during the earthquake response. In the end, the U.S. military reassured its partners and showed others that

the U.S. military is formidable. One Haitian national said, "Ten years ago, you all came here and did what no one else could do. And now you are here doing it again. Doing what no one else can do." ■

Notes

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Chinese soldiers eat rice in Nanjing, China, during the Chinese Revolution of 1949. (Photo courtesy of the University of Wisconsin-Milwaukee Libraries)

Feeding the Troops

Searching for a Way Forward in China 1944–1945

Maj. John D. Walker, U.S. Army

In documenting the U.S. Army's role in the China theater during World War II, U.S. Army historians recorded that to the "U.S. theater commander, food seemed to be the most important Chinese military problem."[1] They then continued to describe in detail the lengths Americans went to alter the Chinese military ration. This odd priority raises a question: Why did Americans stress the importance for the Chinese army to radically alter the rations given to Chinese soldiers in World War II? Examining this question in depth sheds new light on relations between Americans and Nationalist leaders in China during the war and in its immediate aftermath. It also demonstrates the potential long-term demands and requirements on an industrially superior nation to support a less-developed and culturally different nation in multinational military operations.

Analyzing and thinking about the successes and failures that the U.S. Army experienced feeding the troops in China during World War II may prove fruitful to strategists thinking through the requirements and challenges of a potential future military conflict in the Pacific region. Today, the U.S. government is focused on deterring Chinese aggression.[2] One of the ways the United States hopes to deter China is by working closely with regional allies and partners to "contribute to regional security" through joint military exercises.[3] If deterrence fails, the United States will of necessity rely heavily on the assistance of partners and allies in the region, some of whom are far less industrially developed than the United States. In that case, just like World War II, the United States will face a near-peer rival while relying on the logistical networks of nations without the industrial capabilities of the United States to thwart that antagonist.

During World War II, the U.S. mission in the China theater was one of support. The United States did not have any ground combat units as it was primarily responsible for training, supplying, and advising the Chinese military. However, American planners at the beginning of the war anticipated that after Germany was defeated, the United States would need to deploy ground combat units to China to fight the Japanese military there.[4] The dropping of the atomic bombs and the drive through the Pacific nullified this idea.

My research in Chinese archives, U.S. and British archives, published Chinese diaries and journals, and many published secondary sources revealed that during World War II, Americans believed that by changing the type of food eaten in the Chinese military ration and ensuring its delivery, Chinese soldiers would be healthier, stronger, and more capable of defeating Japanese forces, and that all efforts to ensure the success of this ration were justified. It also became clear that this view was linked to a larger American notion that they had a paternalistic responsibility to help shepherd the Nationalist Chinese toward democracy.

This research topic is complicated for a multitude of reasons. First, up until recently, historical research into World War II in China was dominated by Cold War realities. Shortly after the end of World War II, China was embroiled in a massive civil war that led to the Chinese Communist Party defeating President Chiang Kai-shek, who fled with his remnant government to Taiwan. For the next fifty years, understanding the history of China's role in World War II was limited. Access to historical records were restricted in China, and only those kept in the United States and Taiwan were readily available. Additionally, historians may have overlooked researching the China Theater during this period in part because it ultimately did not play a critical role in the defeat of Japan other than ensuring Japan kept over a million troops stationed there.

Another reason researching the food rations in China is so complicated is that during this period, there were two separate Services of Supply (SOS) in operation. SOS was the type of unit sustaining soldiers with all necessary supplies. One SOS unit fell under the Chinese military command, tasked with supporting Chinese troops, and a second SOS unit fell under the U.S. military command, tasked with supporting American

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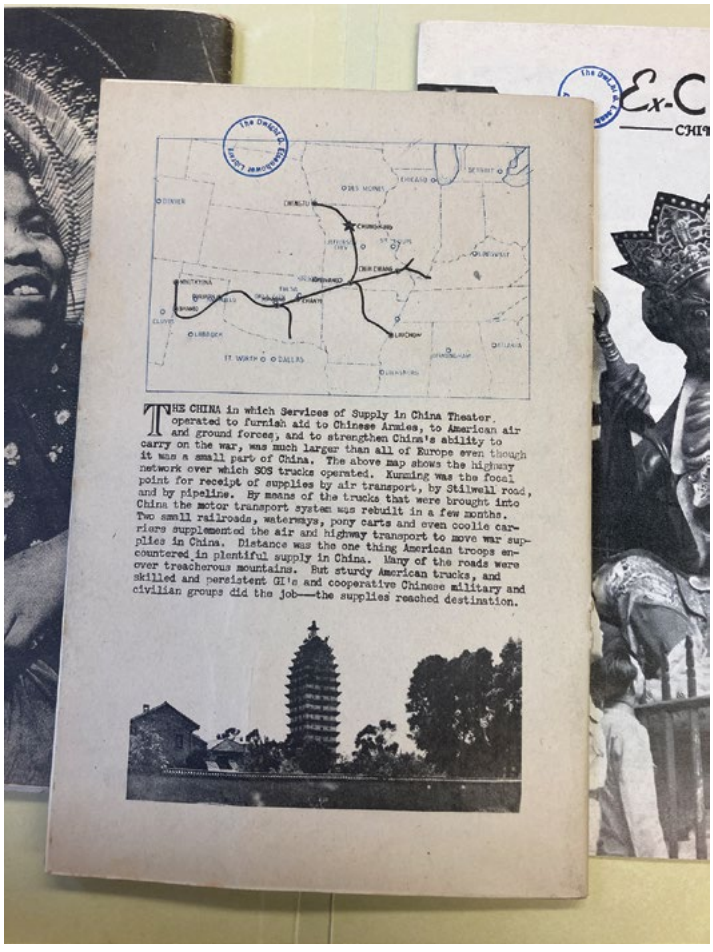


This map shows how the Services of Supply organized themselves geographically. Each base section was in charge of supplying the Chinese armies that entered their area. (Photo by author)

troops. However, up until 1 July 1945, the commander of the Chinese SOS was a U.S. Army officer who also served as the commander of the American SOS. Also, the Americans embedded multiple U.S. Army officers within the Chinese SOS. Consequently, when trying to understand the story of the Chinese ration, differentiating between the two entities is critical but also confusing.

The U.S. push for an altered ration set up a clash of cultures. To a Western audience, meat was understood as necessary to a healthy nutritionally strong diet. In fact, Amy Bently makes the argument in *Eating for Victory* that not only was meat considered imperative to Americans, but that in World War II, the U.S. government also went a step further in making meat a symbol of masculine power to mobilize Americans at home.[5] To Americans then, ensuring China ate a sufficient amount of meat would ensure that they were strong enough to defeat Japan, as the Chinese were the main fighting force against Japan for many years. Ultimately, this effort to change China's food and political culture failed in China, partially because the United States was unwilling to stay beyond the end of hostilities with Japan.

The average Chinese person of the time did not eat much, if any, meat. If the U.S. government was using meat as a symbol of masculine power at home, then symbolically, the Chinese soldiers and Chinese people became the antithesis of strength. During this time, the average Chinese person ate mostly rice, soybeans, and vegetables. To Western observers, this seemed inconceivable. We know this because throughout the early 1900s, the *China Medical Journal*, based in Shanghai, published multiple nutritional tests conducted throughout China at various universities. These articles were published in English, implying that these were intended for a Western audience. It was discovered in these tests that traditional Chinese foods could provide adequate nutrition in a person's diet, even though it was not based on meat. Specifically, it was pointed out that the soybean, which China has in abundance, has almost as much protein as meat.[6] Because soybeans were prevalent in China, they were also cheap and easily accessible, especially for the poor masses who far outnumbered the population in the urban centers.

The Chinese military, however, did not supply soybeans to the soldiers. Instead, the Chinese military supplied only rice. On average, a Chinese soldier was issued 2.5 cups of uncooked rice per day.[7] Other than grain, the Nationalist military expected the Chinese soldier to forage for wild onions, garlic, mushrooms, and leeks to eat with their rice or to purchase extra food on the local economy from their monthly allowance.[8]

To Americans during World War II, especially those who came over in a military capacity, however, this diet was considered insufficient and responsible for their failure to defeat Japanese soldiers in combat. Americans considered Chinese soldiers as less than capable because they were understood to be malnourished due to a lack of meat in their diet. We know this in part because the *Pocket Guide to China* given to U.S. soldiers specifically warned the soldiers to not "feel superior because you are better fed" than the Chinese soldier.[9]

We can also see this view in the records of Gen. Joseph Stilwell, who was America's senior military representative to China for much of the war. In November 1943, he sent an official memo to Chiang telling him that the supply arm of the Chinese military needed to provide "meat and oil, by local purchase, and by shipment. There are plenty of sheep, goats, and cattle, in Yunnan."[10] The reason for Stilwell's demand was his perception that "the majority of the [Chinese soldiers] are physically incapable of sustaining prolonged hardship."[11] Stilwell continued, "Malnutrition is common, due to poor diet. Meat and fats are entirely lacking, and salt and fresh vegetables are insufficient."[12] Even though the Chinese had withstood Japanese onslaughts for many years and adhered to Chiang's strategy to trade space for time, many Americans still felt the Chinese diet was a leading cause of China's supposed combat ineffectiveness.

For example, as part of the war effort in China, the U.S. military set up multiple military training centers to help China's army learn Western military tactics and techniques. Americans at the training center in Yunan sent a report to Stilwell after a year and a half of operations in 1944, in which they detailed some challenges they faced in training the Chinese soldiers. They blamed Chinese diet deficiencies as causing malnutrition and as the base cause of almost all the diseases found among the troops there.[13]

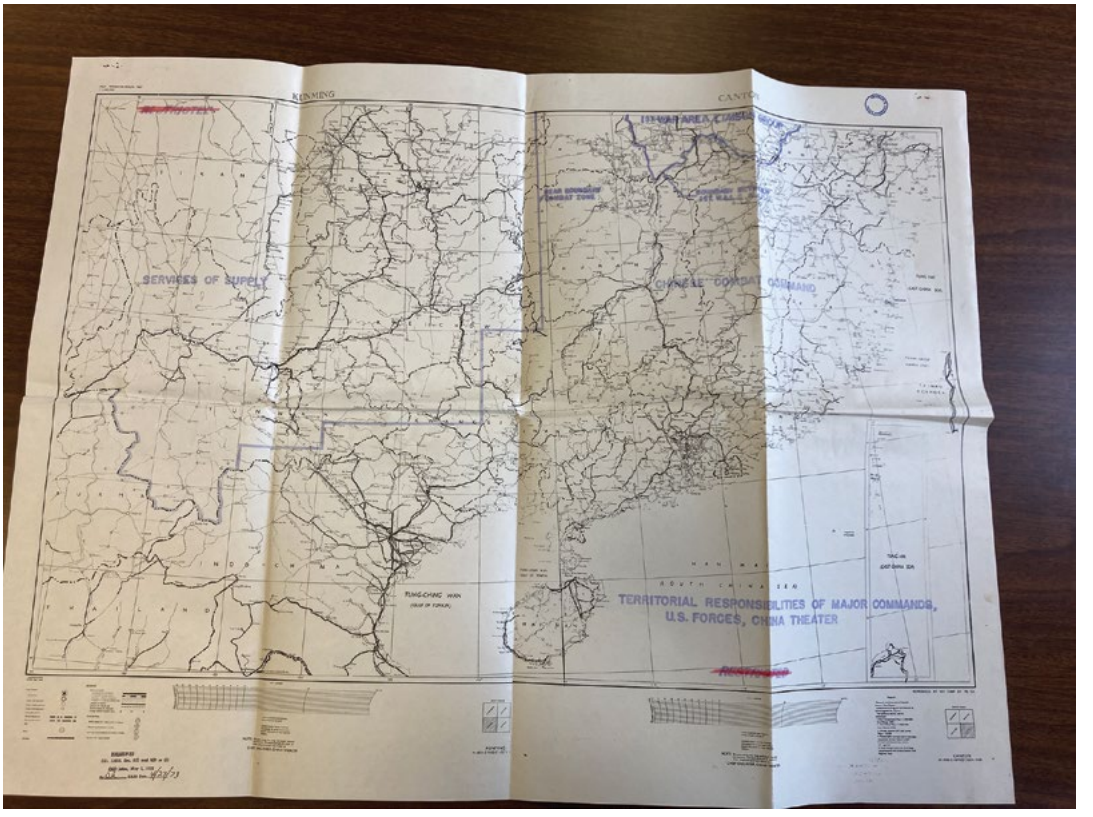
This frustration about nutrition also showed up in military discussions about food for horses. According to the Americans, Chinese soldiers in the field requested the same amount of fodder per horse. The Americans insisted that this was "incorrect for it should be based on the weight of the animal."[14] To Americans, the Chinese way of feeding horses, like feeding soldiers, was simply wrong. In a conference between the Chinese SOS and the American SOS held in June 1945, the Americans proved their point by bringing in veterinarian reports to show that horse rations needed to be based off the size and weight of the animal and "balanced properly" between quantities of fodder and beans.[15] The Chinese officers at the conference "expressed approval and pleasure" with these corrections.[16]

In the fall of 1944, when Gen. Albert Wedemeyer became America's senior military representative in China, he decided to make food reform among Chinese soldiers his number one priority. He became "convinced that the simple failure to feed the Chinese soldier underlay most of China's military problems and that the Chinese armies needed food even more than they needed guns."[17] Consequently, food became, in America's eyes, the primary means to judge the qualitative effectiveness of a Chinese soldier.

For Wedemeyer, however, it appears that he had more than just a simple desire for nutritional improvement in the Chinese soldiers. He linked his efforts to his aspirations to help China become a mature Western democracy. In a letter after the end of World War II to one Chinese general, he said that "throughout my service in China it has been my hope and desire that I could make a small contribution to improve the living conditions of the common people … [so that] your people could better determine how and by whom they will be governed. They could take an intelligent interest in the political and economic affairs of their government … [and] China would again take her rightful place in the family of nations."[18]

The idea that food could become a measure of political correctness is explored in detail by Charlotte Biltekoff in her book *Eating Right in America*. She makes the connection that "despite seemingly scientific origins, dietary ideals are cultural, subjective, and political. While its primary aim may be to improve health, the process of teaching people to 'eat right' inevitably involves shaping certain kinds of subjects, and citizens. … Nutrition is not only an empirical set of rules, but also a system of moral measures, and its presumably neutral quantitative strategies are themselves political and ideological."[19] By pushing a strongly held belief of the necessity of a different ration on Chinese soldiers while at the same time wanting political changes mirroring Western democracies for China, Wedemeyer essentially demonstrates Biltekoff's point, played out in this case in American policy toward China.

While there have been scholars who have written about food in World War II, none have focused exclusively on Wedemeyer and his attempts to change the Chinese military diet in 1945. Again, this is most likely because the Chinese theater ultimately did not play a large role in America's ultimate offensive against Japan. However, it is clear from the sources that Wedemeyer used every tool available to him to pressure, cajole, and encourage the Chinese to change their soldiers' diet. As an example, beginning on 6 December 1944 and through the end of January 1945, Wedemeyer's office



This map shows where the U.S. Services of Supply Command boundary ended in the China Theater circa 1945. (Photo by author)

sent no less than fourteen official memorandums detailing necessary improvements to the Chinese ration.[20] By 1 February 1945, the new ration was adopted in a joint Sino-American conference that mandated a Chinese soldier receive twenty-seven ounces of rice, two ounces of beans, one ounce of peanuts, eleven ounces of vegetables, one-third ounce of salt, and one ounce of meat "when local procurement [was] feasible."[21] This caveat included the understanding that "problems of procurement and distribution will frequently make it impractical to issue … and substitutions will be required."[22] The conference then listed all the substitutions that could be made. For meat, the options included beef, eggs, fish, fowl, and pork.

Just prior to the adoption of this ration, Wedemeyer told a British representative in January 1945 that he "believed he could institute proper feeding arrangements for all troops by May."[23] Wedemeyer further told the British that he had received a report from five U.S. nutrition experts who had studied [the Chinese soldiers nutrition] for four months. He claimed their conclusion was that roughly 57 percent of the Chinese army was under nourished.[24]

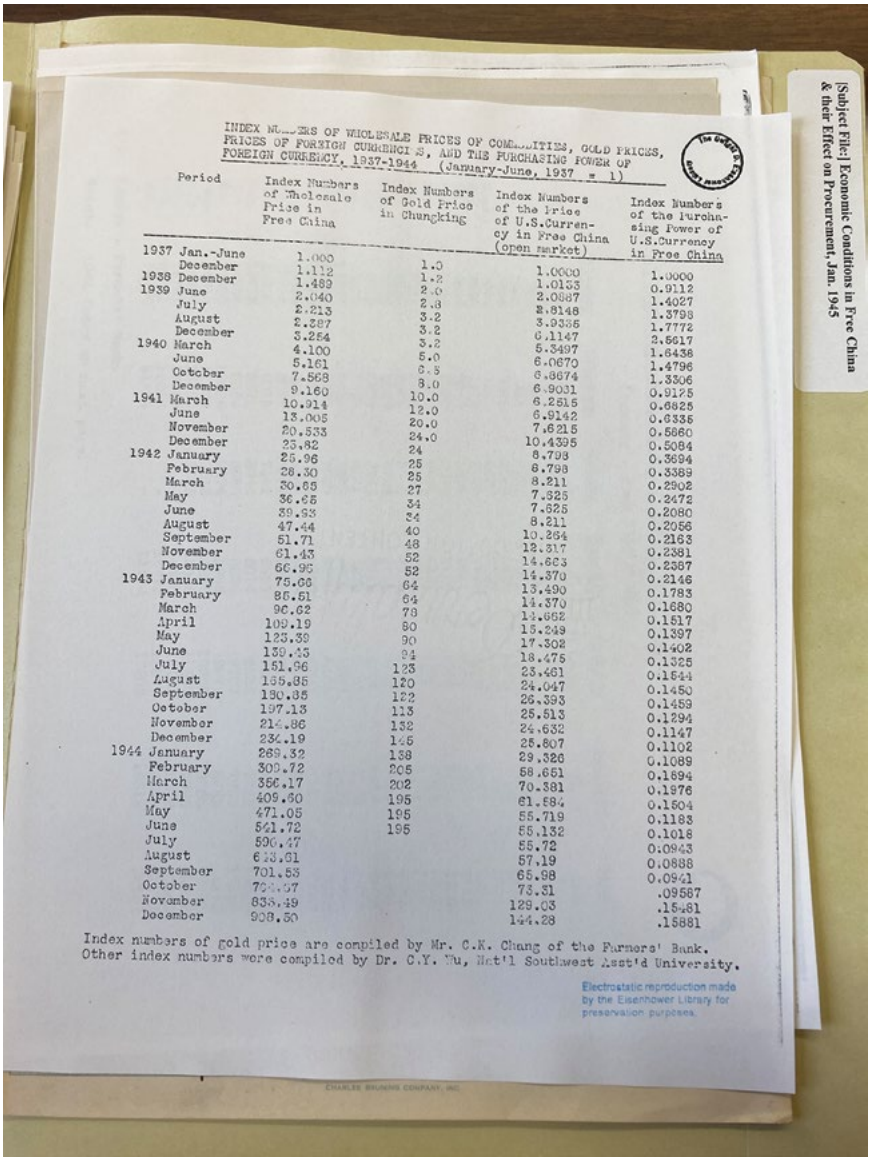
However, instituting change did not prove easy. From February to July 1945, nine memorandums were submitted to Chiang from Wedemeyer pleading for actual implementation of the ration that was agreed upon.[25] The Americans consequently did not trust the Chinese to implement this ration. America not only embedded U.S. Army officers in the Chinese Services of Supply Command to ensure the logistics functioned according to America's desires, but America also placed a U.S. Army officer as the first commander of the Chinese SOS.[26] Perhaps as a result of Wedemeyer's complaints and the insertion of U.S. Army officers into the Chinese SOS, the Chinese SOS and American SOS held all-day conferences during the first week of June 1945 to discuss the challenges and way ahead for feeding Chinese soldiers. Records of these conferences were preserved by the Americans. Interestingly, in these reports, the Chinese did not give much pushback to the ration adopted as it was understood to be "nutritionally balanced." However, if a soldier were to exert more energy than the calories in the ration allowed, it was decided at the conference to increase the amount of rice given to the soldier rather than increasing the amount of "meat, sweets, or vegetables."[27] Rice was probably chosen as the substance to increase because of its ease of accessibility in China.

Two weeks later, Wedemeyer again complained to Chiang and used such language as "we must as early as possible adopt [a] uniform ration for all members of the Chinese Military Forces including officers and enlisted men" that would include "a certain number of pounds

of meat."[28] Perhaps as a result of this complaint or as a result of the conferences held earlier in June, by the first week of July, Maj. Gen. Robert McClure, Wedemeyer's chief of staff, wrote to Wedemeyer that Chiang "has settled the ration problem and I believe he can solve most of our other problems."[29]

In analyzing the conference reports from June 1945, it is apparent that regardless of when the Chinese army adopted the new ration on paper, implementing this ration proved challenging. In China, units were traditionally responsible for their own sustenance. Commanders oversaw acquiring and distributing allotted rice by the government based on the number of soldiers on an official strength report. Soldiers were expected to forage for supplemental food or purchase it on the economy. Communities were expected to support army units as they marched through.

This Chinese system of delivery worked under certain circumstances. Specifically, if the economy was good and people were willing to sell to Chinese troops, and there were no famines devastating the land, Chinese soldiers could be fed well. This, after all, was the system that was used during the 1930s campaigns against the Communists.[30] However, as Hans van de Ven has shown in his research, there were multiple famines in the early 1940s that ravaged the land, and China's economy was subsequently devastated by massive hyperinflation. By 1941, the purchasing power of a soldier had decreased 80 percent, and by 1942, the price of grain had increased by over 3,000 percent.[31] By June 1944, "the monthly cost of living for ordinary soldiers in Chengdu, one of Sichuan's major cities, was over eleven times their pay."[32] Consequently, the ability for soldiers to purchase food on the local economy was severely hampered, regardless of how much food was in the local community.



[Subject File:] Economic Conditions in Free China & their Effect on Procurement, Jan. 1945

INDEX NUMBERS OF WHOLESALE PRICES OF COMMODITIES, GOLD PRICES, PRICES OF FOREIGN CURRENCIES, AND THE PURCHASING POWER OF FOREIGN CURRENCY, 1937-1944 (January-June, 1937 = 1)

Period	Index Numbers of Wholesale Price in Free China	Index Numbers of Gold Price in Chungking	Index Numbers of the Price of U.S.Currency in Free China (open market)	Index Numbers of the Purchasing Power of U.S.Currency in Free China
1937 Jan.-June	1.000	1.0	1.0000	1.0000
December	1.112	1.2	1.0133	0.9112
1938 December	1.482	2.0	2.0827	1.4027
1939 June	2.040	2.8	2.8148	1.3798
July	2.213	3.2	3.9355	1.7772
August	2.287	3.2	6.1147	2.5617
December	3.254	3.2	5.3497	1.6438
1940 March	4.100	5.0	6.0670	1.4796
June	5.161	6.5	6.8674	1.3306
October	7.568	8.0	6.9031	0.9125
December	9.160	10.0	6.2515	0.6825
1941 March	10.914	12.0	6.9142	0.6335
June	13.005	20.0	7.6215	0.5860
November	20.533	24.0	10.4395	0.5084
December	25.82	24	8.798	0.3694
1942 January	25.96	25	8.798	0.3389
February	28.30	25	8.211	0.2902
March	30.65	27	7.325	0.2472
May	36.65	34	7.325	0.2080
June	39.93	34	8.211	0.2056
August	47.44	40	10.264	0.2163
September	51.71	48	12.317	0.2381
November	61.43	52	14.663	0.2387
December	66.96	52	14.370	0.2146
1943 January	75.66	64	13.490	0.1783
February	86.51	64	14.370	0.1680
March	96.62	78	14.662	0.1517
April	109.19	80	15.249	0.1397
May	123.39	90	17.302	0.1402
June	139.43	94	18.475	0.1325
July	151.96	123	23.461	0.1544
August	155.85	120	24.047	0.1450
September	190.35	122	26.393	0.1459
October	197.13	113	25.513	0.1294
November	214.86	132	24.632	0.1147
December	234.19	145	25.807	0.1102
1944 January	269.32	138	29.326	0.1089
February	309.72	205	58.651	0.1894
March	356.17	202	70.381	0.1976
April	409.60	195	61.584	0.1504
May	471.05	195	55.719	0.1183
June	541.72	195	55.132	0.1018
July	596.47		55.72	0.0943
August	643.61		57.19	0.0888
September	701.53		65.98	0.0941
October	724.07		73.31	.09567
November	833.49		129.03	.15481
December	908.50		144.28	.15881

Index numbers of gold price are compiled by Mr. C.K. Chang of the Farmers' Bank.
Other index numbers were compiled by Dr. C.Y. Wu, Nat'l Southwest Asst'd University.

This index shows the dramatic inflation by month in China during the Second World War and helps us understand the necessity for feeding Chinese soldiers from a set ration rather than expecting them to purchase their food on the economy. (Photo by author)

Another challenge with the Chinese system of feeding its soldiers was when large units stayed in a specific area for an extended period of time. The local area may have had enough to provide adequate amount of food for itself, but with the demands of also supporting a large body of soldiers, local food quickly became scarce.[33] Consequently, America looked at methods to increase production of vegetables, transport food over long distances, and even distribute processing foods. However, increasing vegetable production takes time, the lack of suitable roads and refrigeration make distance a significant limitation, and

the lack of machinery make processing impractical. So, the Americans concluded that it was up to them to do everything for the Chinese soldier as the United States "cannot look to Chinese Governmental agencies for much help in improving the conditions of the Chinese Soldier."[34]

Nevertheless, the Americans were impressed by the food available in some of these locations. Dr. Frank Dickinson, who was the U.S. Army's civilian expert on nutrition in China, along with two others, conducted a site survey of Nanning, China, in 1945 in preparation for the upcoming summer campaign through Southern China.[35] Dickinson reported that there was "a plentiful supply of rice … good supply of vegetables … [and] fat hogs carrying lots of fat are available in large enough numbers to meet Chinese armies demands at regular market prices."[36] The Americans were positive about this area's supplies and its potential to feed a large body of soldiers.

However, despite these promising site surveys of differing local communities, America recognized that the Nationalist Chinese army could not effectively distribute food on its own. By 1945, America was used to a distribution system that delivered all the food a soldier needed directly to the front lines anywhere in the world from the industrial center of Chicago. America had practiced this system in World War I and refined it in the intervening years leading up to World War II. So, the American military decided to provide all the necessary resources to make the military food distribution successful to include food purchasers, trucks, fuel, and drivers.[37] Unfortunately, this meant that when America decided to wholesale leave China at the cessation of hostilities in August 1945, China was left to continue this system on its own, which it simply could not do. It lacked the requisite industrial capability to produce or maintain transportation equipment after years of warfare. This was evident during the Chinese Civil War that commenced soon after the end of World War II, when Nationalist Chinese troops returned to relying on units to locally procure food, which sometimes included forced requisitions on local communities.[38]

Ultimately, Chiang's forces lost the Chinese Civil War to the Chinese Communists and fled to the island of Taiwan, where they established an authoritarian government. Some historians place at least partial blame for this on the actions of Nationalist soldiers in some of the reclaimed areas of China after World War II.[39] Politically, China remains a Communist country, and the island of Taiwan only gained a democratic form of government within the last thirty years.[40]

Americans' assumptions that to be strong and capable of fighting, Chinese soldiers needed a diet that included meat coupled with a food delivery system patterned after America did not accord with the conditions in China. However, in the pressure of the moment, temporarily solving the problem America's way seemed to be the right decision to Americans. After all, in the fall of 1944, it was not certain how the Allies would defeat Japan. American planners were working on the assumption that the war would last into 1947 and that it might require deploying U.S. Army ground forces to China to fight through the Chinese mainland to Korea and then Japan. However, the successes in the Pacific and the decisions surrounding the use of the atomic bomb invalidated this assumption.

In analyzing the facts related to America's attempt to change the Chinese diet, it is debatable whether this attempt actually helped the nutrition of the Chinese soldier in any meaningful way. During the height of the summer 1945 campaign, the Americans reported that the changed ration and delivery system was able to provide food for only 185,000 soldiers, which was only a fraction of the five million total Chinese soldiers, most of whom served under regional governors.[41] Consequently, it is debatable how much immediate impact this event had on the ration of the common Chinese soldier. This goes to show that changing long-standing cultural food habits cannot be done swiftly, even when all the resources are provided.

Wedemeyer, for himself, continued to believe that he had been successful at helping the Chinese adopt an improved ration and distribution system for the Chinese soldier. In his memoirs, written almost a decade after the fact, he wrote that "the ration plan … had a salutary effect throughout [China]."[42] Wedemeyer, however, had at least two incentives for claiming success with the ration. First, it would serve to highlight his success in his role as the senior U.S. military leader charged with assisting China's military situation. Secondly, it would also show that the United States could work with the Chinese Nationalist Party's unique political reality without Chinese Communist Party involvement, something that Stilwell and his staff often questioned.[43] The

disagreement over which U.S. general was more correct about China continues to this day.[44]

Col. Charles F. Kearney, who was a U.S. liaison officer in the Quartermaster Department of the Chinese SOS, somewhat agreed with Wedemeyer's conclusions. Kearney believed "the Chinese were shown that armies on the march could be given an adequate, balanced diet," which was based on "what the Americans thought to be effective procedures."[45] Kearney, however, concluded in his report that he did not believe permanent or lasting changes had occurred in the Chinese military before the end of World War II.[46]

The impact of these events in 1945, however, are not limited to whether the Chinese soldiers had a new ration or not. Food became a tool of America to influence and pressure others to conform over the next half century. An immediate example of this was described by Christopher Aldous in *Food and War in Mid-Twentieth-Century East Asia*. After the end of World War II, the United States found itself attempting to once again change the diet of an Asian culture, this time in Japan. During Japanese occupation under Gen. Douglas MacArthur, the United States decided to invest itself in changing the diets of the civilians in accordance with American understandings of nutritional optimal health—which necessitated an increase in meat. Aldous explained that America believed that "Japan's reliance on grain crops, particularly rice, rather than 'a combination of grain and domestic livestock'—as in the U.S.—'contributed to the exceptionally high beriberi and tuberculosis incidence in prewar Japan, but also contributed to the steady decrease in height and stamina of the people.'"[47] The American military once again felt that the diet of an Asian culture was improper and used food as a force of power politics to implement change. It was only in 1952 that the United States allowed Japan to have autonomy again. To this day, Japan remains a close ally of America. Japan's food culture adjusted accordingly. The case of Japan was more fruitful than the experience in China, in part because the United States was willing to implement change for a much longer period of time. Any future conflict in the Pacific region will of necessity involve feeding troops from less industrial and culturally different nations. Consequently, studying the successes and failures of the U.S. Army in both China and Japan during and after World War II will educate planners on the way forward. ■

Notes

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3. "Campaigning," U.S. Army Pacific, accessed 20 December 2023, https://www.usarpac.army.mil/Our-Approach/Campaigning/.

4. Paul Kennedy, *Engineers of Victory: The Problem Solvers Who Turned the Tide in the Second World War* (New York: Random House, 2013), 290.

5. Amy Bently, *Eating for Victory: Food Rationing and the Politics of Domesticity* (Chicago: University of Chicago Press, 1998).

6. H. C. Hou, "Prevention and Treatment of Common Nutritional Deficiency Diseases," *The Chinese Medical Journal* 61, no. 2 (1942): 42–43, https://mednexus.org/doi/10.5555/cmj.0366-6999.61.02.p101.01.

7. "The Chairman of the Military Commission Jiang Zhongzheng Sent a Telegram to the Commanders of the Various Theaters," 2 November 1944, National Government Collection no. 001-087210-00001-008, vol. Military Food Quota and Appropriation, Academia Historica Archives, Taipei, ROC. The 2.5 cup average was calculated by taking the amount of total grain allotted for the year for an area with a known number of soldiers.

8. Wu Hsiang-hsiang, *The Second Sino-Japanese War: 1931-1945* (Taipei, ROC: Tsung Ho Book Co., 1973), 1110–12. Note 380 quotes Yang Shutian reminiscing about the situation as a soldier in the Chinese army during World War II. Yang was stationed for three years at the Xiling Gorge of the Yangtze River. He talks about Chinese soldiers given a ration of rice each day, which was then cooked with foraged wild onions, garlic, mushrooms, leeks, etc. To supplement the daily rice ration, the soldiers were paid a set rate of money so they could purchase from the local economy. The amount of money given was based on rank, with the lowest enlistee receiving fifty yuan per month and a sergeant paid one hundred yuan. According to Yang's reminiscence, it cost 350 yuan per month for nonstaple food in 1945. Consequently, "soldiers often have no food … and officers with family members cannot survive."

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10. "Report for the Generalissimo," 5 November 1943, box 24, folder 17, Stilwell Papers, Hoover Institution Library & Archives, Palo Alto, California (hereinafter cited as Stilwell Papers).

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12. Ibid.

13. "History of Field Artillery Training Center Yunan China 15 MAR 1943–16 OCT 1944," box 35, folder 24, p. 79, Stilwell Papers.

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16. Ibid.

17. Romanus and Sunderland, *China, Burma, India Theater*, 65.

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19. Charlotte Biltekoff, *Eating Right in America: The Cultural Politics of Food and Health* (Durham, NC: Duke University Press, 2013), 3, 7.

20. "Memorandum to His Excellency, The Generalissimo," December 1944–January 1945, box 84, folders 5–7, numbers 398, 385, 378, 355, 351, 321, 303, 301-a, 298, 289, 282, 278, 277, 264, Wedemeyer Papers.

21. "Memorandum to His Excellency, The Generalissimo," 31 January 1945, box 84, folder 7, number 398, Wedemeyer Papers; see also Romanus and Sunderland, *China, Burma, India Theater*, 243.

22. "S.O.P. of Ration Purchasing Commissions," box 25, folder Chinese Services of Supply File, p. 8, Aurand Papers.

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24. "Chinese Intelligence: November 17, 1944 – March 31, 1945." Cipher Telegram. From M.A. Chungking to The War Office. 31 January 1945. WO 106/3584, National Archives, Richmond, UK.

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26. The first commander was Maj. Gen. Gilbert X. Cheves. On 1 July 1945, Cheves was recalled to the United States and the Chinese army replaced him with their own officer. By this time, Gen. Wedemeyer did not want an American serving as the commander of the Chinese Services of Supply although their continued to be American officers embedded within the Chinese Services of Supply command.

27. "Conference Report," 6 June 1945, box 25, folder Chinese SOS—General Chen's Conferences, p. 1, Aurand Papers.

28. "Memorandum to His Excellency, The Generalissimo," 18 June 1945, box 85, folder 4, number 617, Wedemeyer Papers.

29. "Letter to Lieutenant General A.C. Wedemeyer from Major General R. B. McClure," 4 July 1945, box 82, folder 18, p. 3, Wedemeyer Papers.

30. William Whitson, *Interviews of Kuomintang Army Officers Conducted by Colonel William Whitson, 1965-1966*, vol. 1, oral interview 33, United States Military Academy Archives, conducted 24 August 1965, 33–36. More than one interviewee mentioned the same details. See, for example, interviews 36, 38, 44, 86, 87, 91, 95, 100.

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32. Rana Mitter, *Forgotten Ally: China's World War II, 1937-1945* (Boston: Houghton Mifflin Harcourt, 2013), 275.

33. "Economic Developments in Free China and Their Effect on Army Procurement," January-May 1945, box 26, folder Economic Conditions in Free China & Their Effect on Procurement, prepared by the Resources Section of the Central Purchasing and Procurement Authority, Headquarters, Services of Supply, p. 14, Aurand Papers.

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37. "Memorandum to His Excellency, The Generalissimo," 25 January 1945, box 84, folder 7, number 385, Wedemeyer Papers.

38. Wang Dingjun, *Guan Shan DuoLu: Huiyilu sibuqu zhisan* (Beijing, 2013), 235. According to a diary account by Wang Dingjun, during the Chinese Civil War in Manchuria, rather than having a separate agency purchase food from the local populace to then distribute to the soldiers, it was the foot soldiers themselves who interacted directly with the locals for food. "The cooking team would go from house to house to catch chickens," offending the local populace in the process of acquiring needed meat.

39. See, for example, Suzanne Pepper, *Civil War in China: The Political Struggle 1945–1949* (New York: Rowman and Littlefield, 1999); United States Relations with China (Washington, DC: Department of State, August 1949); Barbara Tuchman, *Stilwell and the American Experience in China: 1911–45* (New York: Macmillan, 1970).

40. The first island-wide election for the head of state was held in 1996.

41. Romanus and Sunderland, *China, Burma, India Theater*, 246.

42. Albert C. Wedemeyer, *Wedemeyer Reports!* (New York: Henry Holt, 1958), 336.

43. See Tuchman, *Stilwell and the American Experience in China*.

44. See Alfred E. Cornebise, *Soldier Extraordinaire: The Life and Career of Brig. Gen. Frank "Pinkie" Dorn (1901–81)* (Fort Leavenworth, KS: Combat Studies Institute Press, 2019), 169n92. Wedemeyer tried to demote Dorn, who had served as Stilwell's right-hand man, in China.

45. Quoted in Romanus and Sunderland, *China, Burma*, *India Theater*, 243.

46. Ibid., 246.

47. Christopher Aldous, "A Dearth of Animal Protein: Reforming Nutrition in Occupied Japan (1945-1952)," in *Food and War in Mid-Twentieth-Century East Asia*, ed. Katarzyna J. Cwiertka (Leiden, NL: Leiden University, 2013), 53.

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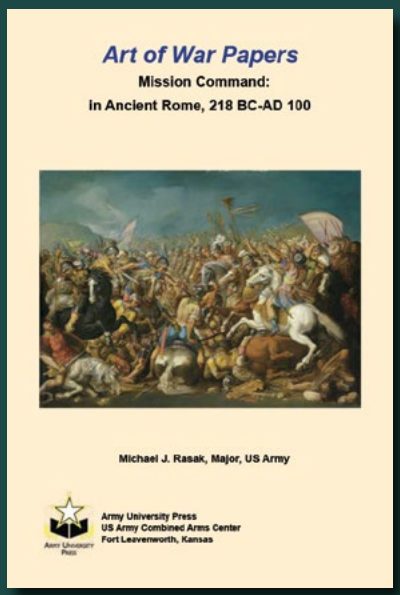

Mission Command: In Ancient Rome, 218 BC-AD 100

Michael J. Rasak, Major, US Army

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Whose Role Is It Anyway? The Inter-Service Race to Develop Intermediate-Range Ballistic Missiles

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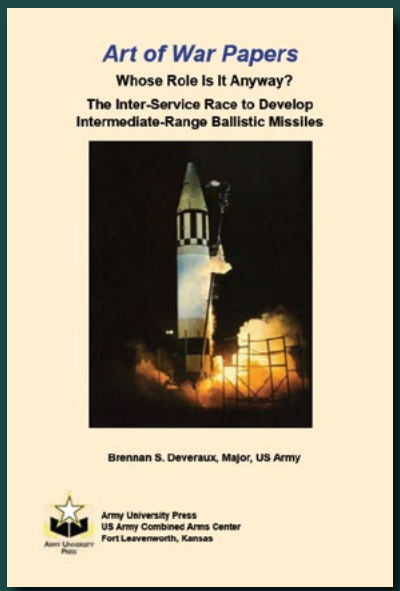

Army University Press Films New Release

Created for the Department of Command and Leadership and the Department of Military History at the U.S. Army Command and General Staff College, *The Korean War: The First Year* is a short documentary focused on the major events of the Forgotten War. Designed to address the complex strategic and operational actions from June 1950 to June 1951, the film answers seven key questions. Major events such as the initial North Korean invasion, the defense of the Pusan Perimeter, the Inchon landing, and the Chinese intervention are discussed.

To view *The Korean War: The First Year,* visit https://www.armyupress.army.mil/Films/Feature-Film-Catalog/Korea-First-Year/.

Soldiers from 1st Battalion, 66th Armor Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, ready their armored vehicles for review by Lithuanian President Gitanas Nausėda 27 May 2022 at Kaunas, Lithuania, during Defender-Europe 2022. Defender-Europe 22 is a series of U.S. Army Europe and Africa multinational training exercises in eastern Europe. The exercise demonstrates U.S. Army Europe and Africa's ability to conduct large-scale ground combat operations across multiple theaters supporting NATO. (Photo by Spc. Devin Klecan, U.S. Army)

Defender-Europe 2022

A Combined Arms Battalion's Long-Range Movement across Europe

Lt. Col. Paul G. Lockhart, U.S. Army
Maj. Matthew L. Simon, U.S. Army

In February 2022, as tensions built in Europe over the Russian invasion of Ukraine, the 1st Battalion, 66th Armored Regiment (1-66 AR) "Iron Knights," 3rd Armored Brigade Combat Team (BCT), 4th Infantry Division, was preparing its equipment for rail operations at its home station of Fort Carson, Colorado. The battalion leadership had recently returned from a predeployment site survey ahead of what was supposed to be a routine rotationally aligned force mobilization. As part of the rotation, the Iron Knights had been selected to participate in the U.S. Army Europe and Africa multinational exercise titled Defender-Europe 2022 (DE22), which would involve a multimodal (road, river, and rail) movement of a combined arms battalion (CAB) across Poland and Lithuania.

However, as war in eastern Europe grew more certain, it became unclear if U.S. Army senior leaders would continue the exercise as planned. Tactical, operational, and strategic variables were reviewed, and the decision to move forward with DE22 was made, which resulted in a tactical mission having strategic implications for NATO forces, allied nations, and Europe.

Defender-Europe is an "annual large-scale U.S. Army-led, multinational, joint exercise designed to build readiness and interoperability between U.S., NATO and partner militaries."[1] The Iron Knights' mission during the exercise would prove to be a test of the battalion's ability to project combat power into the heart of eastern Europe and the Baltic States and execute elements of the unit's assigned mission essential task list while also testing interoperability and a multinational command-and-control (C2) structure. This exercise required the Iron Knights to enter a theater of operations, establish command and support relationships with multinational partners, build combat power, and conduct a 1,500 km movement and maneuver with multinational partners through eastern Europe via multimodal transportation. The exercise culminated in a tactical deployment of all battalion assets during a 180 km tactical road march to a U.S. forward operating site at Camp Herkus, Lithuania. The mission's design was a proof of concept to gather lessons learned on the friction and challenges a BCT-or-larger force may encounter if required to execute combat operations in eastern Europe. This article highlights these lessons learned and the tactics, techniques, and procedures identified and used by the Iron Knights during DE22.

Phase I. Expeditionary Deployment Operations

In February 2022, the Iron Knights loaded equipment on rail at Fort Carson and conducted download a few weeks later at the seaport of embarkation in Charleston, South Carolina. The battalion initiated a readiness push prior to rail operations, increasing the unit operational readiness rate above 90 percent for all combat platforms. A team of Iron Knight soldiers loaded over 375 pieces of equipment onto two ships for movement, which would cross the Atlantic Ocean into the Mediterranean Sea. Equipment arrived at the seaport of debarkation (SPOD) at Alexandropoulos, Greece, in March 2022, marking the first time a U.S. Army CAB had entered Europe through Greece. The battalion downloaded all equipment for rail movement

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Maj. Matt Simon, U.S. Army, is the chief of tactics for the Armor Officer Basic Course at Fort Moore, Georgia. He served as the battalion executive officer for 1st Battalion, 66th Armored Regiment during Defender-Europe 22 and as the operations officer for the remainder of the unit's deployment to Europe. He has held a variety of armor and cavalry leadership and staff positions in armor and Stryker formations with deployments to Afghanistan and West Africa, and assignments in Germany and South Korea. A former military science instructor at the U.S. Military Academy at West Point, he holds a master's degree in military art and science from the U.S. Army Command and General Staff College.

and commercial line haul, after which it transited four European countries prior to arriving at the exercise starting point in Trzebień, Poland.

During Phase I of deployment operations into theater, the Iron Knights self-supported in close coordination with the Surface Deployment and Distribution Command. It was a true proof of concept that required the battalion to test its internal systems and movement processes. The initial movement phase in the continental United States (CONUS) identified points of friction with vehicles and equipment that would likely also manifest in Europe. CONUS operations allowed the battalion to take actions to mitigate those friction points, resulting in greater success in Europe. Three major lessons learned enabled a successful deployment of equipment.

People are our overmatch. A recurrent theme throughout this article is "people are our overmatch." Assigning the right leaders and soldiers at appropriate points of friction is necessary to successfully execute deployment operations. An officer in charge paired with an experienced noncommissioned officer, with a communication package for deployment nodes at Fort Carson (including the agricultural and sanitation node, container yard, "bronco" staging yard, and motor pool) proved decisive in the ability to successfully deploy equipment to port. The rail yard was controlled by a major (either the battalion executive officer or operations officer), which enhanced the unit's ability to liaison with echelons above brigade to resolve problems as they arose. Communications then filtered through a battalion C2 node located at the battalion headquarters. Treating rail load as an operation, with appropriate C2, allowed for quick resolution to problems.

The CONUS port C2 node consisted of a post-command captain and first sergeant as well as supporting operators and unit movement personnel. This experience proved invaluable during the successful rail download and subsequent upload of the battalion equipment onto two ships outbound to the port in Greece. The senior captain proved to have the right experience and ability to communicate regarding points of friction as well as to coordinate with multiple echelons of command to ensure proper load and stowage of equipment for the battalion. Furthermore, the experience of the port team (operators and maintainers) allowed for fast and quick troubleshooting of problems to ensure rapid upload of equipment.

The battalion's theater port C2 node in Greece consisted of the operations officer, the first sergeant from the forward support company, and a variety of operators and maintainers. A field grade officer as the officer in charge was a V Corps requirement, which proved to be a necessary assignment due to the high level of coordination required with theater movement control teams, customs, and echelons-above-brigade C2 elements. The maintenance team consisted of experienced maintainers, which proved necessary to address issues with equipment being afloat for a month across the Atlantic Ocean. Do not underestimate the experience required of a port detail. It should be comprised of the best and brightest from the unit, as this part of the operation sets the stage for later phases of the deployment. The Iron Knight team of maintainers was able to mitigate and correct faults, allowing operators the ability to drive most equipment onto trains and making download at Camp Trzebień, Poland, significantly easier.

Port maintenance. To resolve minor maintenance issues, the battalion port detail in South Carolina established a relationship with a local supply support activity a few hours away. This should be implemented by all battalions and brigades deploying from CONUS to any destination. This action allowed the battalion to maintain its operational readiness rate prior to loading the ships as well as minimize the use of the battalion's shop stock list (SSL) materiel at port, which would have required the opening of spare parts and specialty equipment containers. While it is not recommended to execute major maintenance activities at port, minor activities will simplify download and prevent towing vehicles at the SPOD.

Port maintenance in Greece, however, proved to be more complex and required the opening of SSLs and specialty equipment containers. The transport of equipment via sea vessel for an extended duration impacted equipment readiness rates. Due to inactivity, vehicles and equipment began to show power and electronic issues, primarily caused by the damp environment on the ships. While external packing lists were accurate, it was quickly discovered that part lists inside containers were not as accurate. This created a loss in time and work hours at port sorting and locating the right parts. Having the appropriate level of leadership

A ribbon bridge carrying an M1A2 Abrams tank from 1st Battalion, 66th Armored Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, crosses the Vistula River 13 May 2022 during Defender-Europe 22 at Dęblin, Poland. Defender-Europe 22 is a series of U.S. Army Europe and Africa multinational training exercises in eastern Europe. The exercise demonstrates U.S. Army Europe and Africa's ability to conduct large-scale ground combat operations across multiple theaters supporting NATO. (Photo by Spc. Devin Klecan, U.S. Army)

when loading the SSL and specialty containers would have prevented this issue through the proper labeling of interior storage boxes with parts inside shipping containers. Finally, having the experience necessary to troubleshoot electronics at port proved crucial to the successful upload of rail cars. Experienced maintainers trained in electrical troubleshooting are a must have for port operations at the SPOD.

Deploy yourself, when possible. A self-supported CONUS port allowed for the Iron Knights to identify and route any issues that needed to be communicated to the receiving port team in Greece. The adage "no one cares for your equipment better than you" is absolutely true. While not always feasible due to current constraints with deployment operations, battalions and brigades, when able, should manage the load out of their own equipment. Organic loadout enabled an accurate stow plan to be communicated forward to the SPOD detail as well as the ability to locate and stage the SSL and specialty containers upon arrival to support maintenance activities during vessel berthing. Self-supported deployment operations enabled the Iron Knights to execute a rapid transition from readiness build to combat operations due to ownership throughout the entire deployment process from the seaport of embarkation to exercise start.

Phase II. Readiness Build and Intertheater Mobility Operations

Ready to fight tasks. The rail transport of combat platforms from Fort Carson to Charleston with follow on sea movement to Alexandropoulos and subsequent rail movement through Europe to Trzebień posed a series of challenges to equipment readiness. The battalion theorized that the constant fluctuation of climate, both elevation from mountainous and dry terrain to a moisture-heavy sea level, caused weather damage to some combat platforms. Additionally, a series of storms along the four-country rail route (through Bulgaria, Romania, Hungary, and Slovakia) caused a

slight decrease in readiness during equipment staging in Trzebień. The battalion had less than two weeks to rapidly troubleshoot and execute field maintenance to build fleet readiness, test fire all weapons platforms as part of theater requirements, and execute sustainment crew qualification training to certify crews through the coming months. As a result, soldiers and leaders implemented a few strategies to regain the initiative ahead of a historic long-range movement (LRM).

Battle tracking and reporting. Once all equipment was staged at Trzebień, the battalion downloaded equipment, conducted inventories, and completed preventative maintenance checks and services (PMCS). The battalion enabled its tactical operations center (TOC) to not only validate the tactical network but also to help track maintenance progress and to ensure the unit was on pace to complete all live-fire prerequisites. The rapid setup up of the TOC and the application of the battalion tactical standard operating procedures (SOP) helped monitor ready-to-fight tasks to completion, and it ensured essential C2 systems were operational, and processes were implemented prior to the start of the LRM. Furthermore, due to the scope of the exercise and the role 1-66 AR would play, it was necessary to remain in communication with the battalion's organic brigade headquarters and echelons above brigade supporting the exercise well in advance of the movement.

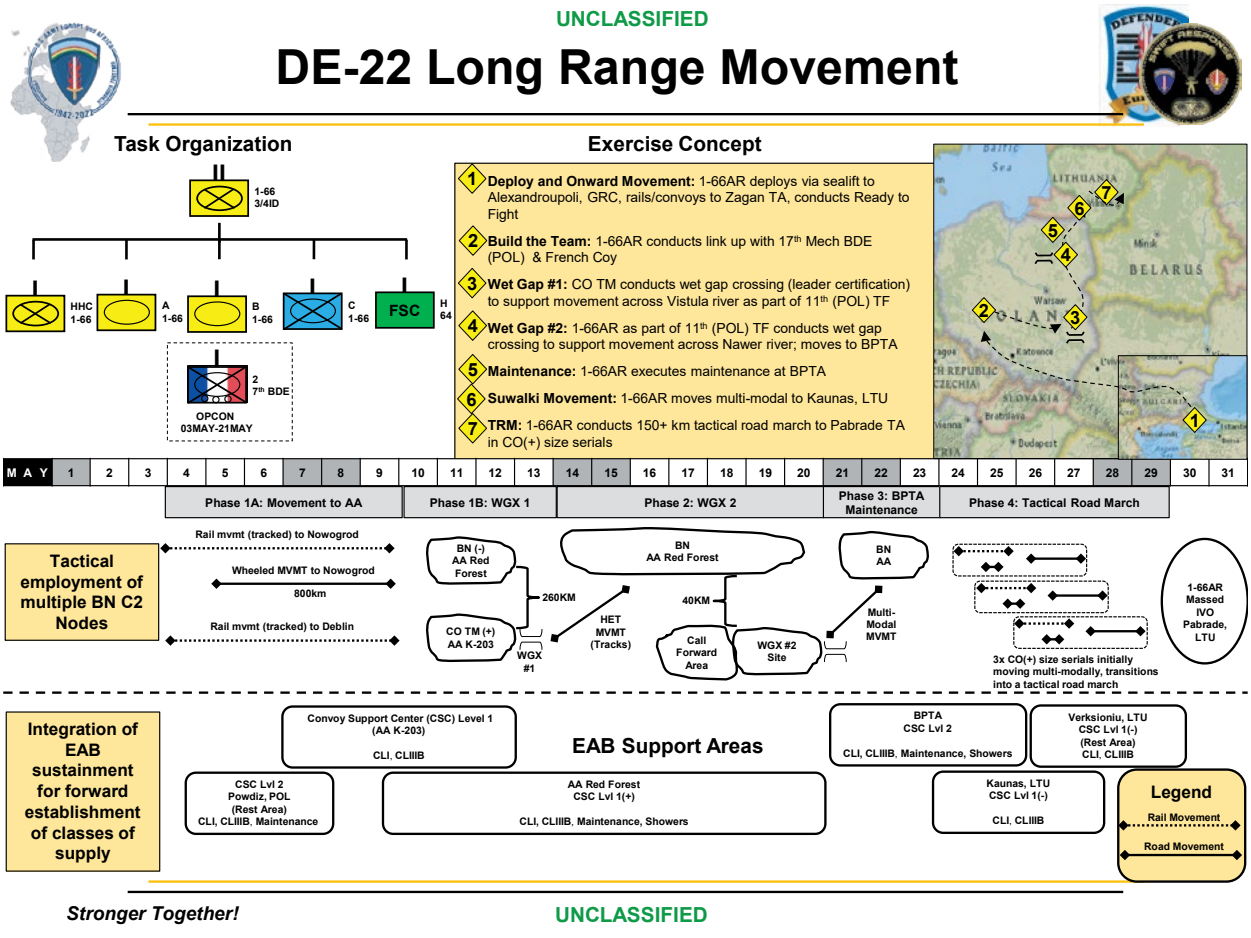
Where are the parts? Coordination with the brigade headquarters and adjacent battalions for parts sourcing within theater proved to be one of the biggest challenges during the readiness build period. Some parts were available at logistical readiness centers across multiple countries within Europe, while other parts were listed as on hand in SSL containers with adjacent units. A standing procedure for parts flow for the remainder of the rotation emerged during this period for 1-66 AR. As an example, 1st Battalion, 8th Infantry Regiment, had a part on hand for a 1-66 AR Bradley Infantry Fighting Vehicle, while 1-66 AR had a part on hand for a 1st Battalion, 8th Infantry Regiment, M1 Abrams tank. The result would be the establishment of exchange points, where units would transfer parts through rental vehicles at midway points more quickly to enable repairs. Moreover, the 64th Brigade Support Battalion would emerge from the ready-to-fight period sending "box trucks" across theater to locate, sign for, and distribute parts to expedite repair times. This model would help 1-66 AR achieve the requisite operational readiness rate ahead of the LRM.

Orders production and the rehearsal of concept drill. While the entire battalion was hard at work completing maintenance and live-fire tasks, the Iron Knight staff developed the operations order that would synchronize LRM activities for the next thirty days. The staff completed a full round of the military decision-making process, including the creation of a synchronization matrix and execution checklist for critical events during the LRM. Prior to the first train departing the railhead and the first wheeled serial departing the front gate of Trzebień, the battalion completed a rehearsal of concept drill that encompassed a rehearsal of all phases, critical events, friction points, and contingencies.

Phase III. The Long-Range Movement

Mobility operations in Europe are challenging and complex for myriad reasons. During the battalion's predeployment site survey in January 2022, the Iron Knights were identified as the number one priority unit for movement assets based on the required mission set during DE22. Circumstances in Europe became more complex, however, and the Iron Knights realized they would have to compete for mobility resources with multiple units as assets were allocated to support the war in Ukraine. While the events in Europe magnified these challenges during DE22, the realism of the exercise for the Iron Knights only increased as it created a real-world scenario of how battalion-and-above units would have to move and fight for resources during wartime operations.

During DE22, the Iron Knights were task organized under the tactical control of the Polish 17th Mechanized Brigade. 1-66 AR participated with its organic CAB elements consisting of the headquarters and headquarters company, two tank companies, one mechanized infantry company, and a forward support company. The 984th Military Police Company (minus) attached to the Iron Knights consisting of a military police platoon and headquarters section. Finally, one French mechanized infantry company consisting of three infantry platoons, a headquarters element, a bridging team, and a security force attachment were assigned under the



(Figure by Maj. Jonathan Proctor)

Figure 1. 1st Battalion, 66th Armored Regiment Defender-Europe 22 Concept Slide

operational control of the battalion for two wet-gap crossings (WGXs).

Following the completion of all ready-to-fight tasks and a sustainment crew qualification, the battalion departed Camp Trzebień on a 1,500 km tactical wheeled-vehicle movement from Poland to Lithuania with the entire wheeled vehicle fleet and sustainment assets. All tracked platforms travelled via commercial line haul and rail, allowing the battalion to test Polish and Lithuanian infrastructure at six railhead locations. As part of the exercise, the battalion executed two multinational WGXs to test interoperability between NATO allies and partners and a multinational combined arms live-fire exercise led by the 17th Mechanized Polish Brigade. The battalion's culminating event pushed the Iron Knights through the Suwalki Gap to execute a 180 km tactical road march with the entire fleet consisting of Abrams tanks, Bradley Fighting Vehicles, support and command tracks, and the wheeled fleet from Kaunas Rail Terminal in Lithuania to the battalion's final destination at Camp Herkus in Pabradė, Lithuania (approximately eight kilometers from the Lithuanian and Belarusian border).[2]

Over the course of the LRM, 1-66 AR stressed the battalion's mission command and sustainment nodes across a sustained distance and duration. Figure 1 depicts the array of forces throughout the LRM and the necessary integration of echelons-above-brigade sustainment to maintain combat power.

The ability to sustain and project combat power also required overreliance and continuous use of host-nation infrastructure (contracting, rail, road networks, and commercial line haul). Additionally, 1-66 AR had to decisively engage its mission

command nodes: the TOC, tactical command post (TAC), company trains command post, unit maintenance command post, and field trains command post. Integrating all C2 nodes was vital to maintain command and control of the formation spread well beyond its doctrinal depth and to allow the battalion would eventually also handle the remainder of all movements for the Iron Knights during two multinational exercises later in the deployment. Lastly, this same team coordinated all movements for rail and port operations departing theater. Building expertise, nested within the movement and maneuver warfighting function, is crit-

“Building expertise, nested within the movement and maneuver warfighting function, is critical to successful mobility operations in Europe. Units must build redundancy in the mobility cell and avoid rotating personnel in and out of the mobility operations team.”

to aggressively attack sustainment to maintain combat power for nearly thirty days of movement.

The successful completion of the LRM marked a historic and strategically significant event for NATO forces and the Iron Knights. The LRM tested the CAB's ability to project combat power over extended distances and across multiple European nations. Although other U.S. Army formations have previously conducted long-range movements throughout Europe, this was the first time in history a U.S. Army CAB projected combat power all the way from the SPOD in Greece into the Baltics. From this experience, there were lessons learned that can improve future unit's experiences in European mobility operations and multinational partnership.

Right person, right job. A reoccurring theme, having the right people coordinating with theater sustainment assets, host-nation forces, and division- and corps-level mobility sections proved to be the path to success. Since the battalion operated under a Polish brigade, the Iron Knights created an internal battalion movement cell. A senior first lieutenant, under the oversight of the battalion executive officer, coordinated all commercial and military mobility assets. The officer was not unit movement officer qualified; however, with prior service experience, maturity, the ability to clearly communicate requirements, and most importantly, the ability to build relationships with people, the first lieutenant ensured all battalion requirements were met. The newly established battalion movement cell coordinated all rail, military, and commercial line haul throughout the exercise, and it ical to successful mobility operations in Europe. Units must build redundancy in the mobility cell and avoid rotating personnel in and out of the mobility operations team. This negates knowledge gained and relationships established over the course of a rotation. Finally, the creation of a mobility smart book, continuity documents, and SOPs are key to maintaining knowledge of the mobility process. These documents help prevent relearning and allow lessons learned to be passed to incoming units during relief in place operations as they rotate into the European theater. As a result of this experience, the Iron Knight battalion developed a unit movement SOP to support future deployment operations.

March credits. March credits drive movement throughout the European theater.[3] Military convoys cannot move without them, and military units are at the mercy of host nations who approve the credits for specified routes and departure times. The Iron Knights learned that there is a deliberate process and timeline in Poland regarding military convoy approval. It would often take at least ten days to approve march credits, and approval for movement would usually come twelve to twenty-four hours prior to required departure times. During DE22, the Iron Knights had to forecast movements within these parameters and quickly learned that unforecasted movements required involvement at the Polish general officer level. Even with this level of involvement, movements were not guaranteed. To minimize friction with the movement process, the Iron Knights deployed a route reconnaissance team ahead of

march credit approval using civilian rental vehicles. The team consisted of, at a minimum, a cavalry scout and an engineer to validate that the selected route would support various vehicle and equipment types as well as movement through choke points and underpasses and over bridges. The results of the route reconnaissance were provided to host-nation partners and submitted as part of the march credit requests. Furthermore, the battalion engineer and an assistant S-3 officer developed deliberate analog and digital overlays that enabled common understanding of each leg of the wheeled movement. This process was crucial to movement during DE22; however, it was not uncommon for local national escorts to deviate from the prescribed route or for the Polish approval authority to change routes prior to departure. Future units should be prepared for this level of friction and understand that host-nation requirements and movements will take priority over exercise movements. These same challenges would likely occur during combat operations if U.S. and NATO military movements are not the priority of the host nation. To mitigate route changes, the battalion redeployed the reconnaissance team to revalidate the new route and identify bypasses as required. Doctrinally, the route reconnaissance task would have been delegated to the scout platoon, or in the case of a BCT, to the reconnaissance squadron. Unfortunately, the battalion could not deploy its organic reconnaissance assets in this way due to the Polish government's attempt to minimize military traffic during the exercise because of real-world requirements farther east. Ultimately, the use of the small reconnaissance team of cavalry scouts and engineers in a civilian rental vehicle proved to be a useful technique when validating routes.

Of note, march credits work differently in all European countries. Upon arrival in the Baltics, the Iron Knights had no issues receiving march credits in Lithuania and Latvia within twenty-four to seventy-two hours.

Communication is crucial. Language barriers and communication equipment hindered the speed of operations during the LRM. More specifically, the battalion had the ability to communicate with NATO secure communication keys and tactical voice bridges (TVB) for U.S. tactical radios to interface with multinational tactical radios. Unfortunately, not all multinational vehicle platforms had this capability. For Polish vehicles that did have the ability to integrate TVBs, leaders were hesitant to use it. This was likely due to two reasons:

- The Polish were uncomfortable communicating in English over radio. It is believed that this was to avoid misunderstandings during movement as well as during WGX operations. Polish partners preferred face-to-face communication, which required positioning of a U.S. liaison officer (LNO) with them throughout operations. During movement, the battalion initially communicated via cellphone with Polish escort officers who would then require the convoys to stop to allow for face-to-face communication to occur to accurately articulate needs. This slowed operations, and it could have been mitigated through embedded Polish interpreters with the U.S. forces or by having Polish-speaking U.S. soldiers within the formation (unfortunately there were none organic to the battalion).
- It was clear the Polish did not fully trust the TVBs to provide secure radio communications. The battalion determined that the lack of confidence in the TVBs was tied more to limited experience with the equipment than the ability of the technology to provide reliable secure communications. Going forward, it is important for U.S. and NATO partners to increase use of the TVBs to build trust in the equipment, in turn increasing interoperability and capabilities when executing multinational operations.

European infrastructure. Moving a CAB throughout eastern Europe validated that European rail infrastructure and roadways would support an armored BCT or larger force during large-scale combat operations. Below are three observations to enable successful movement of units in Europe over extended distances:

- Coordination with host-nation local police forces and escorts proved to be useful to maintain speed and initiative during DE22. This tactic is especially helpful to units as they move through urban areas and along key routes during combat operations.
- Wheeled fleets using host-nation roadways must aggressively plan rest stops, refuel-on-the-move (ROM) sites, and vehicle recovery sites and incorporate these factors into route reconnaissance planning. Stops need to be accurately communicated to host-nation forces to ensure understanding of ROM and space requirements. Additionally, time-distance analysis from point to point is critical to manage fuel

A Swedish soldier guides an M1A2 Abrams tank assigned to 1st Battalion, 66th Armored Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, as it crosses the Vistula River 13 May 2022 during a wet-gap crossing at Dęblin, Poland, as part of Defender-Europe 22. (Photo by Spc. Devin Klecan, U.S. Army)

consumption, maintenance, and rest for drivers, and to ensure movements are executed within march credit windows. To maintain tempo, units may require external sustainment support (e.g., refueling assets) to reduce time staged at a ROM site. Unique to the LRM, the battalion determined requirements to have sustainment assets prestaged at ROM sites. Supported by the 16th Sustainment Brigade, these predesignated stopping points were occupied ahead of the main body to maintain pace.

- Although NATO rail gauge exists throughout Poland and now in Kaunas Terminal, Lithuania, there are challenges in moving an entire brigade or division through eastern Europe using host-nation infrastructure. Phasing of units is critical when using rail as appropriate lift assets must be available and properly located at railheads to download equipment. During DE22, the phasing of movement, coupled with contracted lift assets placed ahead of download enabled mission success. In the event of combat operations however, the absence of overhead lift assets to move a non-mission-capable piece of equipment off a rail car causes significant delays for intertheater movement. Furthermore, railheads and urban areas throughout Poland are narrow and have limited space for movement, staging, and separating rail cars. Overloading railheads and small European communities could cause a bottleneck of both the staging of combat platforms and sustainment assets. The deployment of command nodes to coordinate with host-nation forces alleviates this congestion and may be required to ensure rapid movement and sustainment of combat platforms during large-scale combat operations.

Phase IIIA. Two Wet-Gap Crossings

An extensive amount of literature exists on how to execute a WGX operation and the Iron Knights did a thorough review of these products leading up to DE22, to include a review of resources developed by

the 1st Cavalry Division.[4] Additionally, the battalion had access to numerous videos posted to the Army Training Network website, and it executed a series of internal and external leader professional development sessions prior to and during deployment to prepare for WGX operations with multinational partners. A leader certification and live rehearsal prior to the first WGX located in the vicinity of Dęblin, Poland, on the Vistula River augmented preparatory training and leader development. The rehearsal was vital to the success of the battalion during both WGX operations and allowed for sound recommendations to the battalion's multinational partners during execution. It is highly recommended that future organizations use this method of preparation prior to a WGX training event.

Upon final certification, the Iron Knights conducted the first tactical WGX across the Vistula River with a mixed company team of combat and support equipment as well as elements of the French mechanized infantry company. Days later, the Iron Knights participated in a second multinational WGX in vicinity of Nowogród, Poland, on the Nawer River, followed by an organic U.S. battalion crossing the following day. During the multiple crossings, the Iron Knights validated many of the friction points associated with executing a WGX highlighted in the Center for Army Lessons Learned article produced by the 1st Cavalry Division, and the battalion also identified lessons learned from a multinational execution perspective.

Communication and C2. As stated earlier, the Iron Knights were not able to use standard communication packages to communicate with Polish partners during the WGX operations. To alleviate this friction, the battalion placed a U.S. LNO with the Polish TOC during both multinational crossings. The LNO communicated with U.S. forces quickly to pass on orders from the Polish higher headquarters. Conversely, the battalion TAC used the LNO to pass information to the Polish headquarters to keep the commander apprised of the crossing operation. Any deviation from the plan required rapid communication as approval to change the plan was held at the Polish brigade level. This placed a significant amount of responsibility on the U.S. LNO and required the right person to effectively communicate actions and intent between multinational forces.

The command relationship and the ability to collocate the French C2 node with the Iron Knight TAC made communication with the French mechanized infantry company significantly easier. This joint TAC concept worked exceptionally well and prevented placement of a second LNO with French counterparts. When possible, creating a joint command node is preferable to communicate information in real time. Care must be taken when establishing this node to ensure it does not become too large or emit a significant electromagnetic signature. The battalion joint node package included a three-vehicle set (two U.S. and one French) underneath a camouflage net. This enabled communication with the Polish TOC located near the WGX, the battalion TOC in the main assembly area, the wheeled convoy on the main routes, and U.S. and French forces moving from the assembly area to the staging area and across the WGX site.

Terrain management, timing, and route management. Terrain management complicates U.S.-pure WGX operations, and the inclusion of multinational forces further complicated the process. The Iron Knights quickly learned the criticality of communicating size and space requirements for U.S. forces and equipment during WGX operations. Additionally, the battalion had to learn and articulate size and space requirements of attachments and enablers. To put this into perspective, a U.S. bridging company requires the same amount of space as two armored CABs. The French and Swedish bridging units required a similar amount of space. In combat operations, units will not always be able to choose their preferred crossing site or method of crossing. When planning staging locations for a WGX, a map reconnaissance will not be sufficient to determine space allocation for crossing units and enablers. A thorough reconnaissance of the crossing site and the staging areas must be conducted and clearly communicated to the multinational headquarters. Additionally, equipment and crossing speeds need to be factored into the movement equation. This will ensure adequate space, timing, and phasing of forces are accounted for in the crossing synchronization matrix.

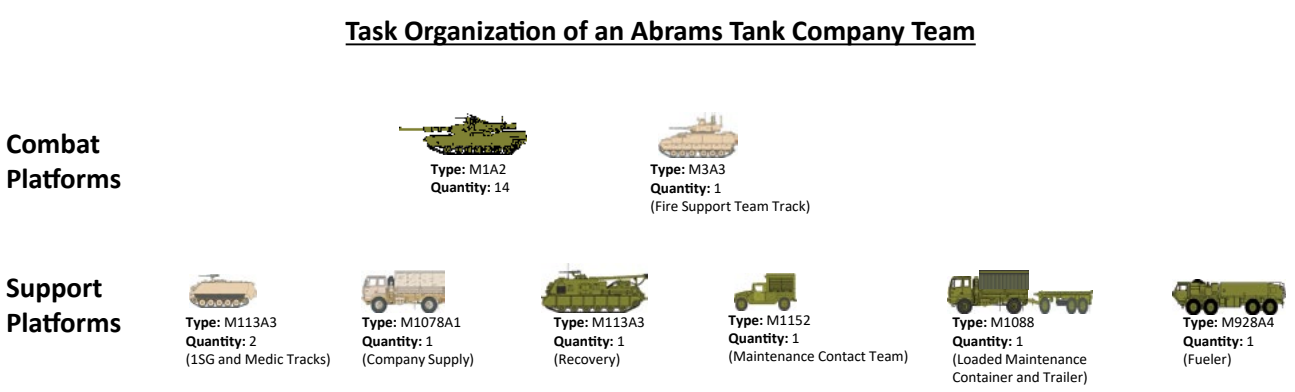
Enablers to manage routes, control traffic, and the movement of forces are also critical toward the execution of WGXs. Host-nation security forces, military police attachments, and French security forces managed civilian and military traffic and equipment flow at both WGX sites. This was not easy to coordinate due to the number of multinational partners and

Soldiers from Ares Company, 1st Battalion, 66th Armor Regiment, 3rd Armored Brigade Combat Team, 4th Infantry Division, conduct a tactical road march with their assigned vehicles 27 May 2022 from Kaunas to Pabradė, Lithuania, during Defender-Europe 2022. Defender-Europe 22 is a series of U.S. Army Europe and Africa multinational training exercises in eastern Europe. The exercise demonstrates U.S. Army Europe and Africa's ability to conduct large-scale ground combat operations across multiple theaters supporting NATO. (Photo by Michael Lysenko, Lithuanian Land Forces)

different communication methods used. This friction was overcome through placement of LNOs and the consolidation of C2 nodes. Despite the concerted effort to build a streamlined C2 structure, for future WGXs, a common communication network using TVBs or NATO secure communication keys needs to be implemented and utilized to simplify communication and increase interoperability.

Rehearsals are key. Just like the execution of the rehearsal of concept drill in Trzebień prior to the start of the LRM, the execution of a well-planned combined arms rehearsal prior to the start of the WGXs proved essential in ensuring all U.S., multinational partners, and enablers understood the plan and potential friction points. The number of moving pieces over the four-week period demanded multiple rehearsals be planned by phase of the operation. Additionally, changes occurred daily for movement timelines, routes, and crossing points due to the size and number of multinational units participating in the exercise. This forced the Iron Knight staff to create general plans with identified friction and decision points, which were then refined during rehearsals. At first, subordinate commanders were nervous they were receiving very generalized fragmentary orders from the battalion. By the end of the exercise, however, it was clear everyone understood the plan and executed competently due to the quality of the rehearsals. This process also gave subordinate commanders ownership of and buy-in to plans and the ability to work through the friction with fellow commanders and the battalion staff.

While rehearsals will never capture the entirety of problems encountered during combat operations, the battalion found success including enablers and



(Figure by Maj. Matthew Simon)

Figure 2. Abrams Tank Company Task Organization during a Tactical Road March

multinational partners in all rehearsals. Partners and enablers were also required to brief their portion of the operation to ensure shared understanding. Rehearsals were executed over large terrain models and focused on critical events as well as friction points for all involved. For the WGXs, this greatly reduced friction with communications, route management, and phasing of equipment movement at the crossing sites.

Well-developed operations orders are important, but they are no substitute for well-rehearsed plans understood by the entirety of the organization. It is critical that staff understand this and make a concerted effort to stick to planning timelines, incorporate all key players, and create shared understanding through well designed and executed rehearsals.

Phase IIIB. The Tactical Road March

Upon completion of the second WGX, 1-66 AR conducted a short maintenance halt in Bemowo Piskie Training Area, Poland, before continuing a multimodal movement (rail and convoy) up to Kaunas Rail Terminal, Lithuania. This final phase of DE22 required the Iron Knights to move through the strategically important Suwalki Gap to a staging point at the terminal. Staging at Kaunas tested the newly installed NATO rail gauge, and the Iron Knights became the first NATO unit to enter the Baltics through this terminal. Following download of combat equipment in Kaunas, the battalion organized into company teams and embarked on a four-day, 180 km phased tactical road march in company-sized serials. The battalion's entire track and wheeled fleet demonstrated the ability to move along the Lithuanian highway and rural road infrastructure from Kaunas Terminal to Camp Herkus. This direction of travel led the Iron Knights eight kilometers short of the Lithuanian and Belarusian border, where the Iron Knights spent the remainder of their nine-month rotation in Europe.

The tactical road march proved to be one of the most challenging events of DE22 as it required the Iron Knights to execute significant coordination with host-nation military and police forces, complete detailed route reconnaissance, and develop a robust sustainment-on-the-move plan that would test the battalion's ability to self-support utilizing internal sustainment and recovery assets. Innovation was key during this phase of movement as maintenance repairs, the transportation of parts and supplies, and reliance on host-nation traffic control was more robust than the wheeled movements executed days before in Poland. Most lessons learned from the tactical road march apply across all unit types and serve as a starting point for future movements of this kind whether as part of training or large-scale combat operations.

Space is a constraint. Like Poland, the rail infrastructure in Lithuania is limited by the space available to download equipment. As a result, staging space available at the terminal necessitated the phasing of the Iron Knights for the tactical road march. Had the battalion attempted to download an entire CAB's worth of equipment at the rail station, it would have quickly run out of space and sustainment resources. Furthermore, movement along the designated tactical road march route highlighted the minimal space available to execute a ROM, tactical assembly

area operations, recovery, and maintenance. Host-nation infrastructure, urban sprawl, and land and wildlife management all played a role in the movement of the company-size elements (see figure 2) over four days. Units executing future tactical movements in Lithuania, as well as the other Baltic States, need to be aware that terrain will canalize the movement of both friendly and enemy forces should a tactical engagement occur in this region. Terrain becomes restrictive moving in any direction from points of entry throughout the Baltics.

The Iron Knights mitigated risk to mission and risk to force posed by the terrain by phasing the battalion in a doctrinal deployment of both combat and sustainment forces.

Additionally, a thorough route reconnaissance provided preidentified locations coordinated with the host nation for ROM sites as well as assembly areas for rest and maintenance. During a wartime scenario, NATO units must rely on and trust the knowledge of host-nation forces to navigate civilian traffic as well as for route selection. Recognizing that space will be a significant constraint, host-nation forces will provide the best intelligence preparation of the operational environment to ensure rapid movement of forces to objective areas.

Effects on equipment. Unlike a U.S. Army Stryker BCT, which is primarily a wheeled vehicle fleet, a track-heavy CAB has different sustainment challenges during longer range tactical movements. Track pads, for example, began to experience heat issues due to continuous speed on hard surface roads and highway systems. Upon transition of movement from roads to dirt surfaces, track pads began to smolder as the soft surfaces cooled the pads from the constant friction they endured during road movement. To ensure this does not impact combat operations, track pads need to be inspected and deemed serviceable to execute long distances. Lastly, if multiple LRMs are planned, a sustainment and resupply plan must account for replacing track as required. After completion of DE22, track was replaced on most Iron Knight vehicles.

ROM is also another challenge that needs to be factored into tracked vehicle movements. With resupply trains task-organized to each company, fuelers would have to move from the rear of the convoy to the front to conduct refueling. This did create some friction along the narrow roadways while the tailgate resupply method was used. Again, a thorough route reconnaissance to identify ROM sites is critical to ensuring minimum disruption to traffic flow for either civilian traffic or passing military units. Additionally, track units, specifically tank units, need to ensure all vehicle fuel transfer systems are operating correctly to minimize the number of times units need to stop for ROM operations.

Finally, innovative and expedient field maintenance, along with key positioning of SSL materiel, needs to be factored into any movement plan. Recovery of vehicles proved to be easier at this stage of the exercise. Although the LRM and WGXs tested the ability to self-recover, there were periods where expedient and innovative recovery and maintenance solutions were needed to ensure vehicles reached assembly areas and forward operating site locations. Positioning and moving SSL materiel to execute these repairs proved critical to the movement plan. Most vehicles carried spare parts that commonly break on track vehicles, aiding rapid maintenance on the move. Additionally, maintenance contact trucks as part of the resupply trains carried additional parts and moved quickly to disabled vehicles to troubleshoot. There were instances in which a deadlining fault was identified by maintainers but deemed safe to resume movement. Commanders need to be prepared to accept this risk and trust their maintenance team and operators to make an educated decision quickly to prevent mission failure. While the Iron Knights did not execute this mission during combat operations, the movement was treated as such, and mission command at the company level enabled success. This will be no different during combat operations. Effective and clear communication will be key for commanders to understand the level of risk they are assuming when operating vehicles in a degraded condition.

Phase IV. Consolidation and Reorganization

Upon arrival to Camp Herkus, the Iron Knights executed a deliberate thirty-day after-operations maintenance period. The team conducted a significant technical inspection and PMCS on all combat and support platforms. Innovative and expedient repairs conducted during the movement required follow-up repair in accordance with U.S. Army technical manuals. While most of these repairs were quick and easy, parts flow and availability played a significant role in the time it took to rebuild the fleet readiness. The following lessons learned apply to all units regardless of mission.

More miles equal better readiness. The more you use your fleet the better it will operate. This was especially true of the Iron Knights' combat platforms, which despite some wear and tear, had less power-related issues due to continual use over the course of the LRM. Conducting command maintenance once a week is not sufficient to keep a fleet combat ready. As maintenance is a continual operation, road testing and training must also remain continual to move the fleet as much as possible when at home station. Continual use not only tests the vehicle platform itself, but also the ability to self-recover or use organic recovery assets. If one were to examine the current Russian and Ukraine conflict, a key lesson learned is to train and sustain how you will fight. Do not let the first time a system is tested be when a soldier's life is on the line in combat. Exercise your fleet and systems regularly, even when inconvenient. You will learn exactly what is needed to keep it operational.

Your support fleet is just as important as your combat fleet. U.S. Army senior leaders and commanders at echelon place significant emphasis on combat platforms as they drive metrics related to a unit's overall readiness rating. If all the tanks, infantry fighting vehicles, and artillery pieces function, then "you can fight" is the common vernacular. The Iron Knights would posit that if you cannot sustain or recover your combat platforms, then it does not matter if they work or not. A holistic approach to maintenance programs needs to be developed by all units to ensure support vehicles are equally maintained along with the unit's combat platforms. The recovery of downed sustainment vehicles was the primary factor that slowed operations during the 1,500 km LRM. To aid in this shift, the U.S. Army needs to move away from using pre-positioned fleets at combat training centers. Units training at a combat training center CTC need to ensure their utility vehicles and trailers can shoot, move, and communicate just as well as their combat platforms. PMCS needs to be conducted to standard and enforced for support vehicles. This can be accomplished with a separate dedicated command maintenance day for the forward support company. Maintainers are often overly focused on the unit's combat platforms at the expense of their own vehicles. Creating time for support maintenance activities will ensure proper operation when needed. Finally, the sustainment fleet must be exercised just as routinely as combat platforms to ensure continuous operation and the ability to support the unit whenever and wherever needed.

Conclusion. Key Lessons Learned during DE22

Tactical. Enabler support at WGXs is crucial for a successful crossing.

Enabler support. WGX operations require a significant number of enablers that are not common training partners for CABs. Understanding the capabilities and the roles of these enablers is critical to a successful crossing. Integration of enablers early in the planning process at the division, brigade, and battalion levels will mitigate operation failure. These enablers must be primary briefers during CARs as well as participants in CAR injects to both identify friction or common problems during WGXs. Finally, liaison officer placement with enablers may be necessary, especially if units are working with multinational partners. The LNO, with an adequate communications package, can alleviate confusion and quickly pass information between units that may be delayed due to language barriers or incompatible communications equipment.

Terrain management. Units may not have the luxury of choosing the location of the WGX site. Crossing near urban terrain poses challenges for effectively spacing units to conduct multiple crossing sites. Understanding the space required for enablers such as a multirole bridge company and multinational bridging assets as well as maneuver units is critical during the planning phase of the operation. Terrain needs to be allocated by unit and time-distance analysis conducted to ensure maneuver units do not culminate prior to reaching the WGX site. Enablers such as military police units are critical in controlling force flow to the WGX site as well as coordinating with local law enforcement to ensure seamless travel of crossing units. On the far side of the crossing site, routes and objectives need to be properly spaced to ensure units do not get congested prior to reaching follow-on objectives.

Operational. The DE22 LRM serves as a case study for large-scale combat operations. Operational reach and reliance on host-nation support (readiness, recovery, contracting, multimodal transportation, lines of communication) are necessary to enable mission success when executing operations over extended distances. The availability of assets to move a CAB may be hindered by theater-level operations. Reliance on commercial assets will impact timelines for movement. U.S. Army-level headquarters (theater, corps, and division) must prioritize movements

Soldiers with Cutthroat Company, 1st Battalion, 66th Armor Regiment, 3rd Armored Brigade, 4th Infantry Division, dismount an M2 Bradley Fighting Vehicle and transition into battle formation during a platoon live-fire exercise at Pabradė Training Area, Lithuania, 13 October 2022. (Photo by Sgt. Lianne M. Hirano, U.S. Army)

of subordinate maneuver units to ensure objectives are met in order of priority.

Strategic. Although DE22 was orientated on achieving tactical objectives, movements over historically significant terrain (e.g., through the Suwalki Gap) and validation of allied nation infrastructure all had strategic implications. A multinational exercise of this scale effectively showed NATO's ability to quickly provide and deploy combat credible forces that are postured within the theater of operations to deter adversaries and reassure partners. This exercise could not have come at a more important time in European history. ■

Notes

1. "DEFENDER-Europe 22 Activities Begin this Month, Includes More Than 11 Nations," U.S. Army Europe and Africa, 3 May 2022, https://www.europeafrica.army.mil/ArticleViewPressRelease/Article/3017481/press-release-defender-europe-22-activities-begin-this-month-includes-more-than/.

2. The Suwalki Gap is considered a strategically important piece of terrain on NATO's eastern flank. The corridor moves south to north through Poland into the Baltic States directly between Russia's Kaliningrad to the west and Belarus to the east.

3. "March credits (in Germany and Italy) or movement bids (in Atlantic Resolve countries) are documents that allow one or more vehicles to move over a controlled route in a fixed time, according to movement instructions. The documents specify the departure time, speed, route and distances between turns." Alex Brubaker and Lucas W. Pedigo, "Moving across Europe for Operation Atlantic Resolve," Army.mil, 5 July 2016, https://www.army.mil/article/169538/moving_across_europe_for_operation_atlantic_resolve.

4. For more on wet-gap crossing, see "Maintaining an Armored Division's Momentum through a Wet Gap Crossing," Center for Army Lessons Learned, 27 August 2020, https://usacac.army.mil/node/2748.

V Corps

A Case Study in Deterrence for Split-Based Headquarters with Regionally Aligned Forces

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Maj. Adam Steveley, U.S. Army
Dr. John Bonin

The war in Ukraine is transitioning. As Ukraine and Russia approach the third offensive window in the spring of 2024, the operational dilemma for commanders in the United States remains calibrating the appropriate U.S. force presence and command and control (C2) to deter further aggression while simultaneously mitigating unintended escalation. V Corps, headquartered at Fort Knox, Kentucky, has occupied a prominent role in determining a solution to this dilemma since its recent reactivation, deployment, and enduring presence at its forward headquarters in Poznań, Poland. Additionally, the corps has increasing operational and strategic influence in Europe during competition activities below the threshold of armed conflict due to its forward posture. However, looking forward to the next five years, the sluggish Ukrainian counteroffensive amid competing U.S. strategic priorities in Asia will force U.S. Army Europe and Africa (USAREUR-AF) and U.S. European Command to answer the following questions: What is V Corps' role in Europe? How should V Corps fight?

This article's intent is a professional discussion based upon relevant experiences from corps operations in competition since the culmination of Army 2030 redesign experimentation. This analysis hopes to provide important caveats that will inform bridging solutions between current dependence on rotational, modular division forces for large-scale combat operations (LSCO) and the Army 2030 concept of a fully resourced division available for multidomain ground combat. Fundamentally, combat troops provided through rotational, six-to-nine-month modular-division deployments create significant risks in credible postures to deter a resurgent Russia. The analysis identifies the risk and presents recommendations to improve competitive advantages early in crisis and avoid conflict.

Part 1. Defining the Problem

Army 2030 concepts identify divisions as fully organized with organic assets (non-modular) and decisive units of action during large-scale ground combat.[1] The potential of achieving this capability, permanently based in Europe, seems unlikely in the next seven years, however. Stated priorities in the *National Security Strategy*, in addition to eastern European infrastructure limitations, preclude nonmodular solutions to European land warfare by 2030.[2] There must be an interim recognition and guiding principle for divisions and corps where the *modular division*, not the fully equipped ideal, on a *rotational* basis is the unit of action initially available to fight in large-scale ground combat.

This article provides a practical bridging solution to how V Corps, as a caveat, must fight in the absence of expected materiel as the primary U.S. corps among multiple other NATO corps-level formations. Army 2030 design experimentation terminated prior to the Russian invasion on 24 February 2022 and requires refinement based on current practice.

Part 2. How the Corps Fights: Current Doctrine

Competition doctrine. How should the corps fight during competition and conflict according to doctrine? During *competition* activities, Field Manual 3-0, *Operations*, defines two explicit roles: (1) operational control responsibilities for Germany-based units (12th Combat Aviation Brigade, 41st Field Artillery Brigade, and 2nd Cavalry Regiment) and (2) exercise management.[3] Doctrine also states that it is normal for the corps in competition to have an engineer brigade, a military police brigade, an expeditionary sustainment command (ESC), an operational fires command, an expeditionary military intelligence brigade, and a medical brigade in general support. As the Mission Command Capability Development Integration Directorate has correctly noted in its forthcoming "Operational Concept and Organizational Design" for the 2030 corps, "In the active component, however, there are only *three* expeditionary-military intelligence brigades (E-MIBs); *three* signal brigades; one chemical, biological, radiological, and nuclear brigade; two explosive ordinance disposal (EOD) groups; *three* expeditionary sustainment commands (ESC); and two theater enabling combat aviation brigades (TE-CAB) to support *four* corps."[4]

Problem. Currently, the corps cannot fight as doctrine dictates without modularity. Two years into the Ukraine crisis, V Corps has not received an assigned or aligned ESC or sustainment brigade. Despite not having these formations, V Corps is responsible for a support area in Poland with only rotating division assets for tasking. Current expeditionary military intelligence brigade support is rotational, and the current expeditionary military intelligence brigade has obligations at Fort Liberty, North Carolina, that contend with upcoming fiscal year 2024 exercise requirements in the European theater. Additionally, the 18th Military Police Brigade and the newly activated 7th Engineer Brigade have only one battalion each and are assigned to 21st Theater Support Command (21 TSC). At a time when V Corps most requires support in competition, it must rely on modular and rotational solutions to prepare for LSCO. Army 2030 updates should be explicit about this interim reality and provide recommendations for risk mitigation in the event of crisis and conflict.

LSCO doctrine. In LSCO, the corps operates as the senior tactical echelon, synchronizing assets across all domains to degrade the enemy in the deep area to shape high payoff targets and set manageable conditions for subordinate commands to shape.[5]

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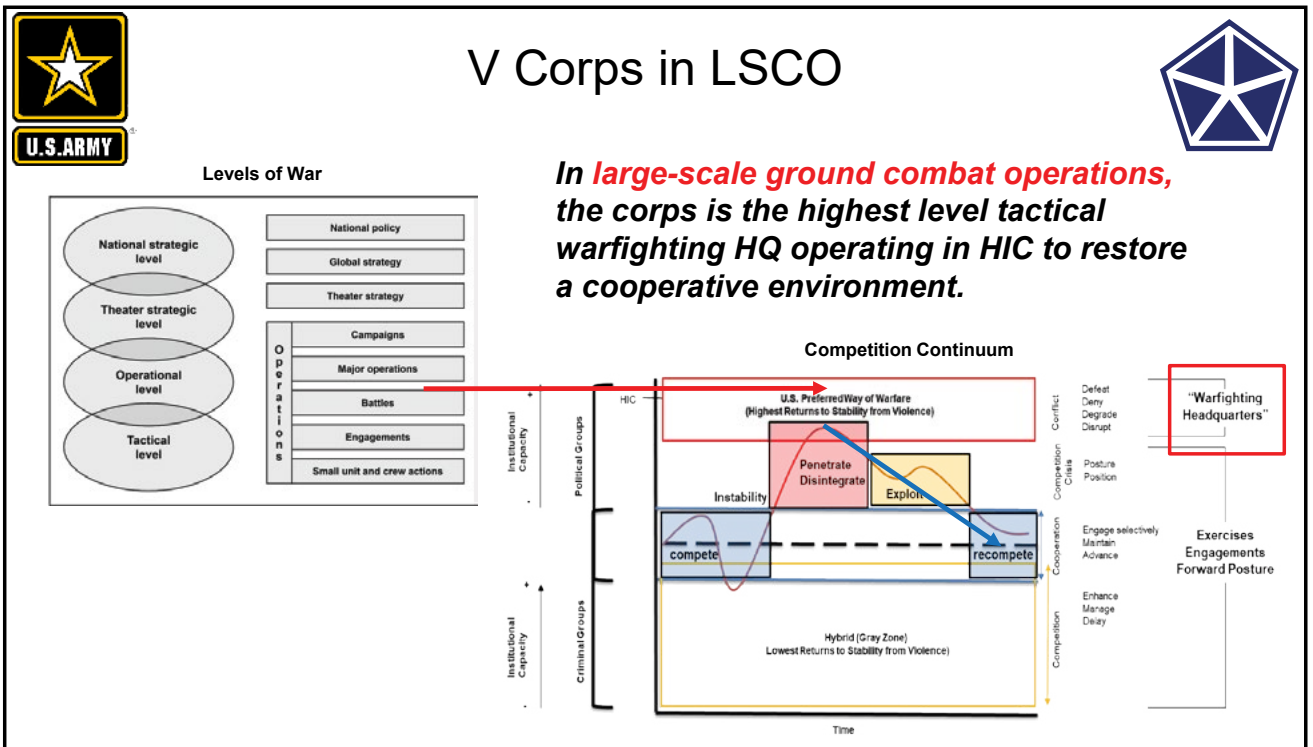
Maj. Gen. Robert Burke (*left*), V Corps deputy commanding general, and Sgt. Maj. Mike Lamkins, V Corps operations sergeant major, unfurl the unit colors during a welcome ceremony 5 April 2022 at Barton Barracks in Ansbach, Germany. The presence of the V Corps headquarters in Europe expands U.S. Army Europe and Africa Command's ability to direct land forces in Europe to reassure NATO allies and reaffirm U.S. commitment to European security. (Photo by Capt. Angelo Mejia, U.S. Army)

The corps will focus seventy-two to ninety-six hours out, guarding against "reaching down" into the division fight, while degrading enemy integrated fires commands, integrated air defense systems, C2, and enemy aviation.

So what? Resource constraints in competition compound in LSCO. Army 2030 visions and current doctrine create an impression of fully resourced divisions available for a distant fight. Crisis in Ukraine and the urgency of operational support in the land domain have stressed staffs at the corps and division levels. Staff officers above brigade require doctrinal clarification concerning "how the corps fights" because of how dissimilar conditions are to what is described, particularly regarding competition. Additionally, policymakers may believe extant capabilities exist inside formations when, in fact, they do not. The appearance of the V Corps Chrysler patch on a USAREUR-AF task organization chart implies a fully equipped corps. Further investigation, however, reveals a lack of assigned units and enablers to fight as doctrine dictates. Doctrine, authorities, and training must address the extant realities of the fighting force today and provide a bridging caveat between now and the Army of 2030 to increase relevance.

Part 3A. How V Corps Fights—LSCO

During LSCO, the corps would fight as it trained during Warfighter Exercise (WFX) 22-01. During WFX 22-01, the corps deployed to Grafenwöhr Training Area in Bavaria with the tactical command post (TAC) in an adjacent motorpool. The rear command post remained in the United States, operating from Fort Riley, Kansas. After Russian incursion, the corps deployed to Ansbach, Germany, in March 2022 where it fought from



"The effective integration of landpower across the conflict continuum requires an expeditionary, scalable, and operationally flexible headquarters able to exercise command in a variety of roles. The combatant commander (command authority) can use the corps headquarters as the nucleus for a JTF, LCC, or as an ARFOR headquarters in major operations and campaigns. ***Alternatively, it can serve as the headquarters for a tactical echelon during large-scale operations***." ATP 3-92, *Corps Operations,* 1-1

(Figure by authors)

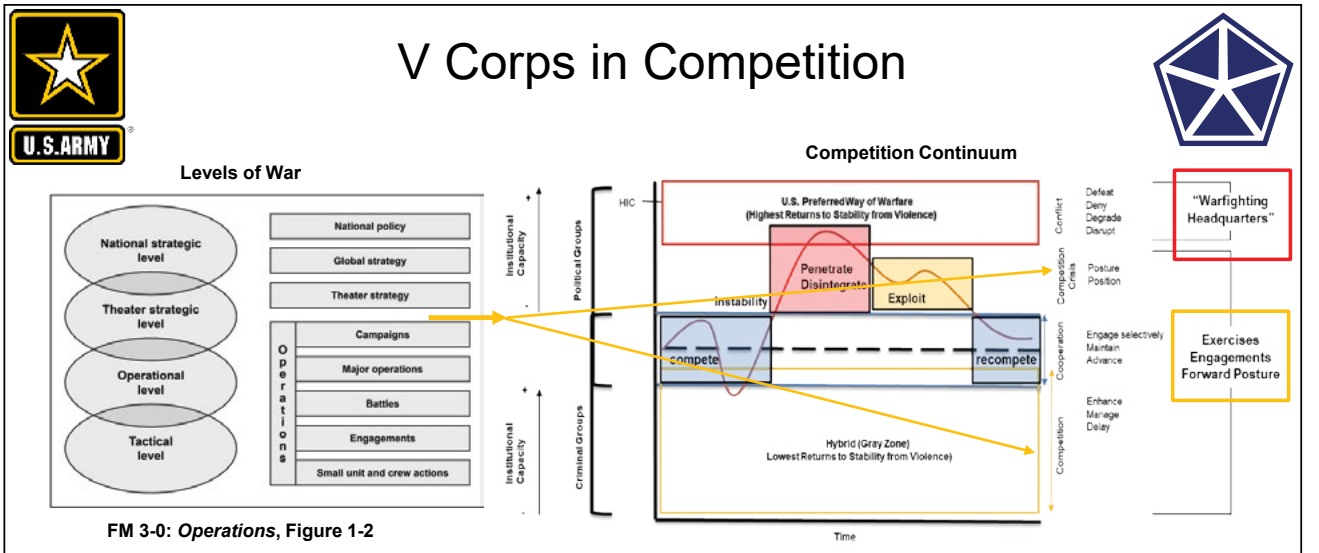
V Corps in Large-Scale Combat Operations

an abandoned Department of Defense middle school. The TAC operated from Victory Corps Forward at Camp Kościuszko (Camp K). In the event of real-world conflict, the main command post (MCP) and tactical command post would forward deploy into either Eastern Germany or Poland in conjunction with other NATO land forces and under the command of a NATO land component command (LCC). (The battlefield geometry would largely be determined by the enemy situational template.) The corps TAC would manage the operational fight while the corps MCP displaces from Fort Knox in a contested environment. Once established, the MCP would perform corps functions by synchronizing assets across all domains in the deep area to enable the division fight in the corps close area. Depending on commander discretion, the rear command post retains the flexibility to remain at Fort Knox during conflict to secure the rear area or displace to Germany.

Of note, V Corps is not currently validated to fight as a NATO multicorps LCC or a U.S. European Command joint task force (JTF). The corps would require augmentation as well as validation during a Warfighter exercise to perform those roles. Additionally, NATO accreditation would be required to serve as a NATO asset.

Part 3B. How V Corps Fights—Competition

Although the corps is trained and validated for LSCO, the largest measure of its success (and reputation) is developed during competition activities below the threshold of armed conflict. In fact, the degree to which the corps is successful in competition likely diminishes the probability of conflict. Corps activities below the threshold of armed conflict, therefore, are decisive in preparing for conflict that will remain elusive if the corps



FM 3-0: *Operations*, Figure 1-2

In competition, V Corps campaigns daily across the competition continuum through exercises, rotational forward posture, permanent forward presence, and engagements to achieve advantages and avoid escalation.

"The effective integration of landpower across the conflict continuum requires an expeditionary, scalable, and operationally ***flexible headquarters able to exercise command in a variety of roles***. The combatant commander (command authority) can use the corps headquarters as the nucleus for a JTF, LCC, or as an ARFOR headquarters in major operations and campaigns. Alternatively, it can serve as the headquarters for a tactical echelon during large-scale operations." ATP 3-92, *Corps Operations*

(Figure by authors)

V Corps in Competition

is successful. In competition, V Corps has four roles: permanent forward presence, rotational forward posture, exercises, and engagements. The following discussion explains the predominant competition activities and highlights risks in the current environment.

Permanent forward presence. In its current design, Victory Corps Forward (VCF), located at Camp K in Poznań, is V Corps' permanent presence in Europe. At the beginning of 2023, USAREUR-AF authorized the first permanent change of station (PCS) opportunity for V Corps soldiers. The tours are unaccompanied and one year in duration. The "Korea model" for U.S. service members on PCS served as the baseline for V Corps PCS rotations in Poland. Infrastructure constraints (housing, youth services, commissary, and schools) remain the largest hurdles for moving families into Poland. Notably, VCF is not considered the V Corps TAC. The TAC deploys out of VCF and will require augmentation from the MCP for operations in LSCO. V Corps' permanent forward presence helps facilitate its operational control of German-based brigades: 2nd Cavalry Regiment, 12th Combat Aviation Brigade, and 41st Field Artillery Brigade.

Risk #1: Manning and talent. One-year unaccompanied tours in Poland often dissuade the highest talent potential from within the Army. Military families would be more likely to select V Corps from the marketplace of available jobs if they could reasonably expect long duration tours in Europe with families or stability at Fort Knox with families. The guaranteed separation created by the requirement for permanent forward presence deters talent and stresses corps directorate talent management. Furthermore, assigning V Corps divisions and brigades would allow highly talented officers to stabilize their families as they conduct unaccompanied tours prior to assuming key

Soldiers from V Corps, headquartered at Fort Knox, Kentucky, unload baggage from trucks 8 March 2022 at Barton Barracks, Ansbach, Germany, as part of a deployment to build readiness, improve interoperability, reinforce allies, and deter further Russian aggression. The deployment of U.S. forces here is a prudent measure that underpins NATO's collective war-prevention aims, defensive orientation, and commitment to protect all allies. (Photo by Dani Johnson)

developmental or Centralized Selection List billets in Europe. This would allow for longer tour times in the European theater of operations, expand an officer's understanding of the operational environment prior to filling a key billet, and provide greater stabilization for families. These incentives would likely draw the highest talent.

Furthermore, split-based presence poses challenges for operational awareness within the headquarters. Camp K retains a comparative advantage for operational awareness due to its colocation with down-trace units and higher headquarters that may not be fully conveyed to the MCP during handovers with staff elements. The efficacy of a split-based C2 headquarters is the vestige of a preconflict Europe and risks efficiencies to effectively campaign in competition.

Rotational forward posture. The largest (emergent) responsibility for the G-5 (plans) shop at V Corps is managing the rotational force posture for what is currently two divisions, three brigade combat teams, one rotational aviation brigade, one division support battalion, and select enablers. As the United States began to build combat power in Europe throughout 2022, V Corps found itself in the unenviable position of bearing all the risks of readiness once units arrived at forward operating stations with none of the command authority to influence training and readiness during stateside events. This produced an environment where, early on, III Corps and U.S. Army Forces Command were delivering units unfamiliar for the tactical problem set in Europe. V Corps' planners spent over a year drafting "business rules" and conducting planning sessions with III Corps and Forces Command to communicate training requirements and institutionalize V Corps equities in readiness and deployment activities with modest success.

The rotational model for force employment degrades effective deterrence for three reasons:

Soldiers from the 7th Infantry Regiment conducted section live fire 22 May 2022 at Grafenwöhr, Germany. The regiment is part of the 1st Infantry Division and V Corps in Europe, which works alongside NATO allies and regional security partners to provide combat-ready forces, execute joint and multinational training exercises, and retain command and control for its rotational and assigned units in the European theater. (Photo by Maj. Patrick Connelly, U.S. Army)

- the United States has not practiced a contested deployment across the Atlantic, diminishing distinguishable credibility for expeditionary deployment in LSCO;
- unit readiness consumed during deployment and reception, staging, onward movement, and integration activities precludes the ability to arrive and move immediately to battle positions; and
- NATO interoperability requirements take time to build and have largely been achieved by the outgoing unit by the time of redeployment. The rotational force postures will, at best, *assure* allies and partners of continuing U.S. investment; however, it is insufficient to *deter* by threat of punishment.

Risk #2: Readiness and rotations. The six-to-nine-month rotational model for divisions and brigades does not provide the required expertise, planning time, or opportunities for substantive engagement, particularly with a corps that is split-based. Divisions will struggle to be the "decisive echelon" if rotational for less than twelve months.

Additionally, V Corps in competition is currently the *tactical* headquarters (HQ) while simultaneously performing several functions of the LCC and ARFOR (the senior Army component of a combatant command). The transition to crisis and conflict would quickly overwhelm the staff, particularly with continued management of brigade-and-below rotational forces entry into theater from the United States.[6]

Risk #3: Sustainment. The Army created an echelon of command for tactical C2 (V Corps), but it did not simultaneously source its echelon command for sustainment (an expeditionary sustainment command). 21 TSC retains support requirements from Estonia to Bulgaria with only an additional rotational division sustainment battalion at echelon (operational control to V Corps).

Exercises. If position and equipment are the "means" of strategic competition, exercises are the

"ways" to gain competitive advantages "left of conflict." Exercises enhance a competitive edge in three ways:

- they communicate capability and resolve outwardly (to adversaries and fence-sitters),
- they increase readiness and interoperability inwardly (both within alliance/partnership structures and within units), and
- they are a mechanism for operational flexibility in crisis.

Preplanned and communicated events allow commanders to respond to crisis without risking escalation due to the appearance of precoordinated training, as 2nd Cavalry Regiment did during initial crisis after the invasion in February 2022.

Risk #4: Exercise support and staffing. Training and validating the corps while simultaneously building its infrastructure was a significant challenge. At times, the corps staff felt they were "flying the plane while constructing it." Nevertheless, when building future headquarters capacity, exercise support must remain a central pillar within each directorate. Modified table of organization and equipment (MTOE) and manning increases to authorize a G-37 Training and Exercise (TREX) Directorate is essential. Currently, the G-37 TREX is constructed from existing manpower. To ensure an internal culture of training and readiness, staffing the G-37 with a colonel as the director initially will equip the staff for rapid validation.

Engagements. Throughout Lt. Gen. John Kolasheski's tenure as commanding general of V Corps, the corps was able to move quickly to improve interoperability across NATO's eastern flank. By well-developed relationships, demonstrated tactical competence, and a reputation as America's tangible commitment to European security, V Corps' engagements were more successful than what would be possible only through the rotational division construct.

Risk #5: Corps G-5 in competition is not current operations. The tendency for a corps headquarters in competition is to focus on current operations and crowd the division planning horizon. The G-5 in competition, however, straddles the operational/tactical divide and must enable theater strategic objectives between three and five years out. Developing a corps subordinate support campaign plan and operational approach that bridges tactical force posture with an understanding of long-term operational goals provides an essential service for the theater.

Part 4. How V Corps Should Fight (Competition Caveat to Army 2030)

The corps should fight with 150 soldiers and a permanently stationed presence at Camp Kościuszko. The stated presence of 235 (about one-third of the corps) for rotational forward presence creates a significant burden upon the MCP. Individuals begin to rotate to the forward command post to satisfy a "tax" divorced from an analysis of requirements. This manning program begins to undermine the performance of the MCP as individuals begin to assume O1A/O2A (branch and combat arms immaterial) current operations roles while in Poland rather than their branch-required tasks.

The following are recommended mitigations to reduce risk identified above and increase V Corps' competitive advantages in competition.

Risk #1: Manning and talent. Authorizing permanent PCS billets at Camp K will help V Corps to compete for talent in the AIM (the Army's talent management system) marketplace more effectively (people want to live in Europe). Furthermore, specific authorizations for PCS will create continuity and remove the unpredictable nature of VCF manning at the directorate level. (Ultimately, V Corps headquarters needs to be "wholesale" located within Europe.)

Recommendation #1. Of those 150 assigned to Camp K, the majority ought to be from the G-33 (current operations). Situational awareness for battle tracking and current operations is increased with a forward presence. Subordinate units can pick up a phone and reach someone at corps far easier when they are in the same time zone.

Recommendation #2. As part of the 150, senior officers (V Corps liaison officers) should be allowed to PCS with families and live in Wiesbaden, Germany, collocated with USAREUR-AF HQ and working from the V Corps annex on Clay Kaserne.

Risk #2: Readiness and rotations. When 1st Infantry Division's deployment was extended to twelve months after the incursion, the expertise they had obtained and provided to V Corps was invaluable. Creating permanence by assigning a division to V Corps and increasing rotations to twelve months (minimum) mitigates the risk of combat power lost during brigade rotations. It also promotes division ownership of the European theater and enables long-term

concurrent planning. Furthermore, increasing division permanence assists corps staff with brigade and below tactical command—particularly during rotational force reception, staging, onward movement, and integration—should escalation occur.

Recommendation #3. To build expertise and combat-credible formations, V Corps needs an assigned and permanent division HQ in Poland. This nonrotational division will decrease continuity gaps and assist the corps in fine-tuning tactical employment of forces while V Corps helps manage brigade and enabler rotations from its split-based locations. *Minimally*, should divisions continue rotations, they should be twelve months in duration. In addition, permanently align the armored brigade combat teams with rotational missions to USAREUR-AF.

Recommendation #4. To provide the credible LSCO capability needed and reduce the armored brigade combat team (ABCT) rotational burden, the 2nd Cavalry Regiment should be converted from a Stryker brigade combat team to an ABCT and assigned to the forward division HQ. The Stryker equipment set could replace one ABCT set in Army pre-positioned stocks to allow for rotational Stryker brigade combat teams.

Recommendation #5. V Corps must be manned, equipped, and validated as a JTF and NATO-ready corps.

Risk #3: Sustainment. V Corps requires an ESC to better facilitate the concept of sustainment. Commensurate with the increase in mission command capability, sustainment requires a command echelon to assist with theater support requirements.

Recommendation #6. To relieve the sustainment burden on 21 TSC, reassign 1 TSC, currently at Fort Knox in support of Army Central Command, as the V Corps ESC. This collocates the corps ESC with the MCP at Fort Knox and aligns Army assets with priority requirements. Identify a reserve theater support command for support to U.S. Central Command.

Risk #4: Exercise support and staffing. The tyranny of the present for the corps' "close area" in competition is the movement of personnel and equipment within its area of operations. This adversely affects the corps' participation in exercises.

Recommendation #7. Exercises are the mechanisms to achieve mobility and advantage in competition. All exercises in the Victory area of operations must be treated as an operation and battle-tracked in the current operations and integration cell.

Risk #5: Corps G-5 in competition is not current operations.

Recommendation #8. Use the operational approach and corps subordinate support campaign plan to develop a thirty-six-month calendar that identifies critical decision points (around exercises, cultural events, and unit transitions) that the corps commander can influence to achieve competitive advantages during competition and prevent crisis. Synthesizing exercises, engagements, and posture over the long term helps the commander think and enables granular division planning.

Part 5. Defense-in-Depth and Deterrence (Theory)

V Corps is leading the tactical edge of experimentation to determine the minimum combat power needed to deter lethal action against NATO. One division mission command element, one armored brigade combat team, and one rotational aviation brigade was *insufficient* to deter violence in Ukraine; however, it appeared suitable to deter violence against NATO. The United States is currently calibrating the right force posture and force mix to assure allies and partners and deter Russian aggression.

Unlike our powerful USAREUR prior to 1989 with some 215,000 soldiers, the United States has assumed a de facto "defense-in-depth" strategy within Europe. This is similar to what the Romans did to secure its empire in the third century. As described by Edward Luttwak, in his analysis *Grand Strategy of the Roman Empire*, a defense-in-depth strategy is "based on a combination of static frontier forces and mobile field armies."[7] As opposed to a permanent forward-basing solution with forces across the entire border (preclusive security and deterrence by punishment), defense-in-depth strategies rely on smaller formations that could abandon perimeter fortifications and augment strongpoints to defend against an incursion (deterrence by denial). Luttwak refers to the mobile, defensive force as an "elastic defense" and the static strongholds as the central component of defense in depth.[8] Defense-in-depth strategies developed a reliance upon local part-time peasant-soldiers called *limitanei* to defend gaps in the frontier due to lack of mobilized forces; thereby, accepting degrees of incursion that would be managed by more capable mobile forces or massing available limitanei.

This strategy presents strategic and operational risks. First, the probability of violence (failure of deterrence) is higher due to the problems of misperception and private beliefs about the potential for military success by the adversary.[9] Furthermore, the strain on the force and reliance upon less-experienced troops creates risks that undermine regional state control and its ability to satisfy its ultimate obligations to the governed: security. In addition, it is politically infeasible for NATO to abandon the territory of its members. The United States and NATO are adopting the Roman approach to border security albeit with *increased* expectations for defense because of Article 5.

Conclusion

The strategy of rotating mobile forces between strongpoints across the eastern flank as an economy of force alternative to a large, standing presence in Europe is consistent with the Romans' solution to defensive strategy in the third century. As the United States pursues a similar strategy, it would be wise to protect against the dangers presented to the force. The limited supply of mobile forces required the Romans to enlist limitanei, who, though proximate to the land they were defending, were not as well trained or reliable as full-time troops.[10] Executing a defense-in-depth strategy stresses the NATO professional force and requires economies of scale with allied and partner reserve forces serving as the equivalent of the limitanei.[11] The U.S. defense in depth in Europe will deter by denial as long as partnerships with professional military forces remain strong. It is reasonable to conclude that, if the Russian threat diminishes, the incentive for our allies and partners to invest heavily in defense will wane. The Army was right to reactivate V Corps. Conditions since 2020, however, have changed. To mitigate strategic risk in the future, the permanence of V Corps' posture in Europe, trained as a JTF for U.S. European Command contingencies and as a NATO LCC, with an assigned division and other recommendations as argued above will sustain a combat credible posture even as the political winds and attention shift away from Europe once the Russian threat diminishes. The risk mitigations discussed in this analysis present competition strategies for echelons above brigade to help articulate "how the corps should fight" with a modular division to prepare for conflict—or avoid it. ■

Notes

1. Kevin Hadley, Savannah Spencer, and Justin Martens, "How the Army 2030 Divisions Fight (Formerly known as Waypoint 2028)," version 3.5 (white paper, Fort Eustis, VA: TRADOC Proponent Office—Echelons Above Brigade, 2 February 2023), 3.

2. The White House, *National Security Strategy* (Washington, DC: The White House, October 2022), 23–36, https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf.

3. Field Manual 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2022), 4-19.

4. Mission Command Capability Development Integration Directorate (MC CDID), "United States Army Futures Command Operational Concept and Organizational Design Concept for the 2030 Corps in a Senior Tactical Role, v0.9 DRAFT" (Fort Belvoir, VA: MC CDID, 14 June 2023), 13. (This document is not yet available for public release.)

5. V Corps original document, "How the Corps Fights" (2023).

6. Army Techniques Publication (ATP) 3-92, *Corps Operations* (Washington, DC: U.S. GPO, 2016), 1-1. Based on the failed 2003 experience of V Corps as Combined Joint Task Force 7, ATP 3-92 recommends against a corps operating as a land component command and tactical headquarters during major operations.

7. Edward N. Luttwak, *The Grand Strategy of the Roman Empire: From the First Century A.D. to the Third* (Baltimore: Johns Hopkins University Press, 1976), 132.

8. Ibid., 130.

9. James D. Fearon, "Rationalist Explanations for War," *International Organization* 49, no. 3 (Summer 1995): 381, https://doi.org/10.1017/S0020818300033324.

10. Luttwak, *Grand Strategy*, 171.

11. The White House, "Ordering the Selected Reserve and Certain Members of the Individual Ready Reserve of the Armed Forces to Active Duty," The White House, 13 July 2023, https://www.whitehouse.gov/briefing-room/presidential-actions/2023/07/13/ordering-the-selected-reserve-and-certain-members-of-the-individual-ready-reserve-of-the-armed-forces-to-active-duty/. The Biden administration's 13 July 2023 decision to authorize Army Reserve and Individual Ready Reserve (IRR) mobilization for the U.S. European Command (not to exceed three thousand Army Reserve soldiers, 450 of whom can be IRR) demonstrates the strain defense-in-depth strategies have on the active force.

Lessons Learned by the 75th Ranger Regiment during Twenty Years of Tactical Combat Casualty Care

Col. Ryan M. Knight, U.S. Army
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Since the late 1990s, the 75th Ranger Regiment has been a leader and strong advocate for advancing tactical combat casualty care (TCCC). As an early adopter, the Ranger Regiment tailored TCCC to best support the Ranger mission as well as the regimental commander's intent. Emphasized throughout the organization was command ownership of the casualty response system, a ubiquitous mastery of the basics of TCCC by medical and nonmedical first responders, and a medical provider proficiency in the most current emergency medicine and trauma care practices.[1] Combat casualty care was a team effort. The goal was to reduce battlefield morbidity and mortality, and especially to eliminate prehospital preventable death.

Among U.S. military fatalities incurred during the initial ten years of conflict in Afghanistan and Iraq, approximately 24 percent had injuries that were determined to be potentially survivable.[2] Injury survivability determinations are based on ideal circumstances, instantaneous knowledge of all injuries, and immediate availability of unlimited Level I trauma capabilities. Trends in injury survivability can help clinicians and researchers identify opportunities for improvements in diagnostics and therapeutics, both for the prehospital and hospital environments.

Among fatalities incurred by the Ranger Regiment over twenty years of combat operations, the regiment maintained zero prehospital preventable deaths.[3] Death preventability determinations are based on real-world and actual circumstances, the tactical impacts of the environment and enemy, and other notable factors that impose substantial limitations on optimal and timely care. Trends in death preventability can help medical and nonmedical personnel identify opportunities for improvement in tactics, techniques, and procedures (TTPs); personal protective equipment; and evacuation and care of casualties.

The mission of the 75th Ranger Regiment is to execute joint special operations missions in support of U.S. policy and objectives. The regiment is also considered

A U.S. Army Ranger combat medic from 2nd Battalion, 75th Ranger Regiment, takes part in routine medical training in August 2019. The 75th Ranger Regiment has been a leader in and strong advocate for advancing tactical combat casualty care across the Army. (Photo by Jaerett Engeseth, U.S. Army)

to be the Army's premier raid force.[4] Capabilities of the regiment include airborne, air assault, and other direct-action raids used to seize key terrain, destroy strategic facilities, and capture or kill enemy forces. Rangers are trained to conduct assaults, ambushes, and other missions at all levels, from squad- to regimental-size operations.

The table of organization and equipment for the 75th Ranger Regiment is similar to that of a standard light infantry brigade, and the battalions within the Ranger Regiment are comparable to light infantry battalions. As such, lessons learned and best practices from the Ranger Regiment can be readily applied to similar organizations across the U.S. Army and U.S. Marine Corps. Additionally, beyond these organizations, the philosophy and principles of the regiment are pertinent to all U.S. Department of Defense (DOD) units preparing for and conducting combat operations.

The 75th Ranger Regiment is comprised of a regimental headquarters, a special troops battalion, a military intelligence battalion, and three rifle battalions. The Ranger Regiment currently has a total of six physicians, five physician assistants, and 122 medics to support nearly four thousand assigned personnel. The regimental headquarters, the special troops battalion, and each rifle battalion have a physician, physician assistant, and medics. The military intelligence battalion has one physician and one senior medic. The regimental headquarters has four medics and is staffed primarily to advise and support battalion operations and training. The special troops battalion has twenty-seven medics, and each rifle battalion has thirty medics. Medical personnel within the regimental headquarters provide support to personnel within the headquarters and also supplement the battalions as dictated by the mission. Medical personnel within the special troops

battalion support personnel within the battalion and the battalion mission. Each rifle battalion has fourteen headquarters company medics. Six of these medics are maintained centrally, and eight ambulance team and treatment squad medics are aligned functionally as two additional medics for each of the four rifle companies. Each of the four rifle companies has four assigned medics, a company senior medic and one medic for each of three platoons. Medical personnel within the battalion headquarters company provide support to personnel within the headquarters and also supplement battalion and line company operational requirements as dictated by the mission. All medics assigned to the 75th Ranger Regiment are trained to the level of Advanced Tactical Practitioners, a tactical paramedic, as military occupational specialty 68W, W1 Special Operations Combat Medics. These ranger medics are the continuity and core of the casualty response system; they are the organizational standard bearers for TCCC.

Ranger lessons learned and best practices for casualty care apply not only to other military units conducting combat operations but also to military units conducting operations other than combat. Additionally, these principles can apply in the civilian sector for untoward events that generate casualties such as vehicle collisions, falls, shootings, bombings, and natural disasters.

The rangers' focus on mastery of the basics—which includes the five priorities of marksmanship, physical training, medical training, small-unit tactics, and mobility—has created a lethal yet lifesaving force that has been successful in completing the operational mission while simultaneously mitigating preventable death among ranger casualties. A continuous cycle of performance improvement efforts, including capturing and analyzing data and routinely reporting casualty statistics and trends, is paramount for advancing novel diagnostics and therapeutics and evaluating and refining TTPs, personal protective equipment, and systems of casualty response and care. These performance improvement efforts identify gaps and drive quantifiable change that saves lives. Objective data and subsequent evidence-based recommendations can be used to efficiently procure resources; refine personnel, training, and equipment initiatives; and guide force modernization and research efforts. Collecting and analyzing data for performance improvement is cost-effective, as it informs decisions and justifies expenditures of time and monies.

A death rate or mortality rate is a measure of the number of deaths in a specific population that is scaled to the size of the

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population per unit of time. A case fatality rate (CFR) is the fraction of an exposed group, or a proportion of a population, diagnosed with a certain illness or injury who end up dying from that illness or injury. For combat casualty care of military forces, the CFR is a summary statistic that provides a measure of the overall lethality of the battlefield among military personnel who sustain a battle injury.[5] The CFR can assist in assessing the quality of a unit's casualty response system and provide context to trends in injury survivability and death preventability. Killed in action (KIA) fatalities are defined as battle-injured casualties who die in the Role 1 prehospital environment. Died of wounds (DOW) fatalities are battle-injured casualties who die after arriving at a facility with surgical capability (e.g., Role 2 forward surgical facility, Role 3 combat support hospital, Role 4 overseas or continental hospital). The CFR can be calculated by taking the total number of KIA and DOW, and dividing this number by the total number of casualties with battle injuries that includes KIA and wounded in action (WIA), both survivors and DOW, and then multiplying this quotient by 100:

CFR = (KIA + DOW / KIA + WIA [Survivors + DOW]) x 100

A medic from the 75th Ranger Regiment participates in combat trauma management training 15 April 2015 at Fort Benning, Georgia. Mastery of the basics, blood product resuscitation, a command owned casualty response system, and tactical medical planning contributed to lives saved in the Ranger Regiment from 2001 to 2021. (Photo by Pfc. Eric Overfelt, 75th Ranger Regiment)

From 2001 to 2021, the U.S. military achieved a cumulative CFR of 9.5, or 9.5 deaths for every one hundred battle-injured casualties, for combat operations in Afghanistan and Iraq.[6] During the same time, the Ranger Regiment had a lower cumulative CFR of 7.6.[7] The difference between these two numbers is not statistically significant; however, this difference does equate to fifteen lives. In other words, in addition to the ranger lives saved by the advancement of communal efforts by the U.S. military and the Ranger Regiment as a whole, as many as fifteen additional rangers may be alive today due to unique aspects of the casualty response system as established, maintained, and advanced by the Ranger Regiment.

Discussion

Multiple factors may have contributed to the lower CFR achieved by the Ranger Regiment. The regiment

has a history of advancing prehospital medicine on the battlefield, serving as early adopters of cutting-edge emergency and trauma medicine, and working to translate efforts across the DOD and civilian trauma systems.[8] Additionally, combatant commanders and other nonmedical leaders within the regiment have and continue to recognize the importance of prioritizing combat casualty care.[9] Initial and sustainment medical training, with competency assessments during each nine-month operational readiness training cycle, develops and maintains knowledge, skills, and abilities of individual medical and nonmedical first responders throughout the organization. In addition to individual training, unit collective training and the integration of casualty care and evacuation within each battle drill fosters a cohesive team and a mastery of the basics through rehearsals, repetition, and conditioning.

Several TTPs and standard operating procedures can be captured from the Ranger Regiment that have likely contributed to the unit's maintenance of zero prehospital preventable deaths during combat operations. The authors surmise four key principles as critical in advancing the regiment's combat casualty care system and are paramount to the unit's success. These principles are not specific to the counterterrorism fight and will be imperative and applicable to providing casualty care in various environments, intensities, and scale of combat in the future. The Ranger Regiment has and must continue to emphasize (1) a mastery of the basics equating to TCCC training for all that includes an emphasis on immediate hemorrhage control, (2) far-forward blood-product resuscitation, (3) a command-owned and directed casualty response system, and (4) tactical medical planning.

Mastery of the Basics—TCCC for All

Integrating best practices from the contemporary medical literature and lessons learned from prior wars and conflicts, the U.S. military made substantial progress achieving the most current cumulative CFR of 9.5 for the Afghanistan and Iraq conflicts.[10] In comparison, this rate is significantly lower than the previously reported 19.1 CFR for World War II and 15.8 CFR for the Vietnam War.[11] The Ranger Regiment achieved an even lower CFR of 7.6 for the conflicts in Afghanistan and Iraq.[12] A mastery of the basics in TCCC by all rangers, not just medics, was a notable contributor to this low CFR. The regimental commander has directed and continues to direct that all rangers maintain medical training and proficiency as one of the five basic priorities of effort. The regimental commander mandates TCCC training for all each training cycle that is deliberate, planned, and integrated, and then verifies this dedicated training time during the quarterly training brief with each company commander. Adherence and progress are checked during command and staff briefings as battalion commanders must report the percentage of rangers trained on TCCC as part of the unit's true combat medical readiness statistics. This medical training is based on the Joint Trauma System and Defense Health Agency TCCC for All Service Members course and includes an emphasis on best practices and evidence-based guidelines for prehospital trauma care on the battlefield such as immediate hemorrhage control using tourniquets, pressure dressings, and hemostatic dressings, as well as other TCCC self and buddy care.[13] This was initiated in 1997 and codified in the Ranger First Responder program and the Ranger Casualty Response System. The Advanced Ranger First Responder program was established in 2016 and since has trained nonmedics in advanced medical skills beyond the scope of Combat Lifesaver training to augment battlefield medical providers and care.

TCCC training for all, including nonmedics, medics, and medical providers, is made as realistic as possible through combat simulation and holds every ranger and leader accountable for TCCC and medical skills proficiency. In the Ranger Regiment, casualty response and care principles and practices are drilled and trained through the entire system from the point of injury through casualty evacuation and surgical care. This training is an integral component of battle drills, with simulated casualties in realistic scenarios while conducting platoon live-fire exercises or similar maneuver events, and includes self-care, buddy care, and treatment by medics and other medical providers. Instead of concentrating on casualties after training, this training emphasizes responding to casualties during any phase of the operation. This mastery of the basics, and use of realistic training and rehearsals, are required to advance and provide more sophisticated casualty care at the point of injury by ranger medics and Advanced Ranger First Responders. Senior noncommissioned officers and officers evaluate junior noncommissioned

A Ranger infantryman from 1st Battalion, 75th Ranger Regiment, who is a qualified Advanced Ranger First Responder, practices providing a blood transfusion from a universal donor to a ranger in need of blood. Rangers carry some whole blood in the field, but when it runs out, predetermined universal donors provide their own blood to keep their fellow rangers alive. Implementing the Ranger O Low Titer (ROLO Whole Blood) Program, Ranger units maintain a list of universal blood donors and train first responders to administer blood transfusions to treat battlefield casualties. ROLO is now a program of record in the U.S. Army, and can be implemented at any unit. (Photo courtesy of the 75th Ranger Regiment)

officers and officers and their unit's casualty response system, emphasizing command ownership and a team approach toward casualty scenarios.

Through a mastery of the basics, realistic training, and rehearsals, medical and nonmedical first responders and leaders have not had to hope for the best and rise to the occasion. Rather, all have been trained for what is expected and to also expect the unexpected. They anticipate casualties and injuries, especially hemorrhagic injuries, during every phase of the mission. They are also conditioned to provide hemorrhage control and other time-sensitive emergency and trauma care that saves lives. For traumatic events resulting in severe and critical injuries, decreasing time to a required medical capability is essential for reducing morbidity and mortality. Providing timely hemorrhage control and other trauma care basics is a must on the battlefield.

Blood Product Resuscitation

Hemorrhage has been, and likely will continue to be, the most prevalent mechanism of death among fatalities with a potentially survivable injury on the battlefield.[14] Key to survival is rapidly controlling the hemorrhage and replacing the blood that was lost. The medical and trauma literature continues to validate further the necessity and mortality benefit of early blood product resuscitation while also demonstrating the harm of providing crystalloid (clear fluid, such as saline) resuscitation in trauma patients.[15] Ranger medics have been carrying blood products on combat missions, including freeze-dried plasma since 2011 and cold-stored whole blood since 2014.[16] In addition to freeze-dried plasma and cold-stored whole blood, these lifesaving blood products also include packed red blood cells and liquid plasma. The Ranger Regiment

Rangers assigned to Delta Company, 3rd Battalion, 75th Ranger Regiment, overwatch and provide cover for an assault on a night raid during a training exercise at Fort Irwin, California, 24 February 2015. The Rangers specialize in raids and assault missions deep inside enemy territory. (Photo by Pfc. William Lockwood, U.S. Army)

has trained, validated, and rehearsed blood product resuscitation indications and implementation procedures throughout the casualty response system to include the regiment's buddy transfusion Ranger O Low Titer (ROLO Whole Blood) Program. The ability of ranger medics to carry and initiate whole blood and other blood product resuscitation at or near the point of injury for the combat wounded within minutes of injury has had an impact on the regiment's combat casualty care and mortality. Early whole blood and blood product resuscitation are of critical importance in eliminating preventable combat death and reducing fatality rates.

Command-Owned and Directed Casualty Response System

As described by Gen. Stanley McChrystal, Command Sgt. Maj. Mike Hall, and others in a 2017 article, eliminating preventable combat deaths is an organizational issue that requires leadership from both medical and nonmedical leaders.[17] Responsibility, accountability, and ownership are fundamental leadership traits essential for the success and advancement of organizations and the multitude of efforts within those organizations. Leaders direct priorities, set standards, and then monitor and enforce those standards. Effective leaders translate their vision to subordinates and create a shared understanding of buy-in and ownership at all levels, which then drives innovation and improvement.

Command direction and oversight, including allocation of time, money, and personnel, exemplify where the priority of effort and accountability are placed. Combat casualty care must include dedicated and planned training that is formally scheduled. Organizations must allocate resources, including time, to support realistic medical training rather than just relying on informal periods of instruction such as hip pocket training that is conducted impromptu if extra time becomes available. Currently, the 75th Ranger

Regiment's command-directed and planned training during each operational readiness training cycle includes three days of Ranger First Responder (TCCC for all personnel), two weeks of Advanced Ranger First Responder (for at least one infantryman per squad), and two weeks of Ranger Medic Assessment and Validation for all ranger medics.[18] This medical training focuses on repetitive hands-on learning to master the basics before applying these basics to realistic simulated casualties using moulage on fellow rangers, instead of mannequins, as training models. Commanders also prioritize combat casualty care by actively budgeting for medical training and modernization. Ranger medical leaders are then able to plan and resource realistic training, supported by tasked, nonmedical rangers allocated by the commander through this prioritization of medical training. Additionally, the ranger medical leaders can modernize expendable items at the pace of medicine through this allocation of funds.

The Ranger Regiment must always be operationally ready at a moment's notice. Thus, medical training proficiency and mastery must be continually emphasized and maintained to support this ever-present requirement. The organization has developed and instituted standards for nonmedical personnel, medical personnel, and leader medical training. The regimental medical leadership has maintained a performance improvement process to continually gather lessons learned, refine education and training, and standardize and advance care. Ultimately, medical proficiency and a mastery of the basics by all equates to every ranger understanding, training, and rehearsing their individual and collective role in the casualty treatment and evacuation process. This results in a Regimental Casualty Response System with each ranger and each ranger team working at the maximum potential for their training level and expertise.

Tactical Medical Planning

It should be expected that casualties will occur during combat operations. A plan should be in place before each mission. Every aspect of the casualty treatment and evacuation process must function smoothly to eliminate preventable combat death and decrease the CFR. This requires an individualized, well-rehearsed, and well-understood tactical medical plan. In addition to understanding the mission and the commander's intent, the tactical medical planner must understand the forces and resources arrayed on the battlefield.[19] Medical planning and contingency planning in support of ranger missions are bottom-up processes. Platoon and company medics understand the tactical mission and medical plan, and the mortality impacts of time and any delay to receiving blood products and surgery when needed.[20] This bottom-up planning process, with the proper leader involvement and understanding, ensures that resources are available, unnecessary evacuation delays are avoided, and the medical plan is practical and understood by all involved, from the lowest person conducting the mission to the highest level leader on the mission command team. The distribution and synchronization of timely and appropriate combat casualty care is dependent on deliberate and thoughtful tactical medical planning. Ultimately, this tactical medical planning may equate to increased survival in casualties with severe and critical injuries.

A tactical medical plan is created by individualized mission medical planning that factors in the nuances and variables of each mission and does not apply a cookie-cutter medical common operating picture to the mission. The medical plan is tailored to the mission. The medical plan includes contingency planning for the evacuation and care of any casualties incurred during each phase of the mission (e.g., infiltration, actions on the objective, and exfiltration). Ranger leaders plan the location of all medical assets during each phase of the operation, including the location of blood products, and incorporate air, ground, and water transport platforms into the evacuation plan for both nonstandard casualty evacuation and standard medical evacuation. Within the restrictions of the tactical mission, time to blood and time to surgery is prioritized and reduced, rather than applying the tactical mission to the strategic medical common operating picture. Through proper tactical medical planning, rehearsals, and training, the entire system comes together to streamline the treatment and evacuation of casualties. This ultimately helps to decrease the CFR and eliminate preventable death on the battlefield.

Conclusion

Throughout twenty years of combat operations in Afghanistan and Iraq, the U.S. military and the 75th Ranger Regiment achieved low cumulative case

fatality rates. Additionally, the regiment maintained zero prehospital preventable deaths. More rangers are alive today because of a command-owned and directed casualty response system that trained all rangers and encouraged innovative medical practices and procedures. The regiment's lessons learned and subsequent requirements are applicable across the DOD. They also apply beyond recent conflicts to future conflicts.

The principles of TCCC mastery and training for all, far-forward blood product resuscitation, command ownership of the casualty response system, and tactical medical planning are applicable to all combat environments, including large-scale combat operations. While large-scale combat operations may require caring for casualties in the prehospital environment for an extended period of time compared to the shorter times experienced during combat operations in Afghanistan and Iraq, the basis of prolonged casualty care is built upon and reliant upon the tenants of TCCC.[21] Additionally, leaders in all units can apply these basic elements to their respective populations to similarly reduce combat mortality.

The U.S. military must continue to improve and emphasize mission-critical tasks. Minimizing preventable combat deaths is one of these mission-critical tasks. No father, mother, brother, sister, family member, or friend should have to lose their loved one to a preventable combat death. Additionally, no leader or teammate should have to bear the burden of losing one of their comrades-in-arms to a preventable combat death. ■

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Combat Studies Institute Staff Ride

The Combat Studies Institute Staff Ride Team develops and conducts live and virtual staff rides as an educational tool for the U.S. Army. By focusing on the timeless and universal aspects of warfighting, staff rides provide important insights into military operations, concepts of leadership, and the face of battle, through vignettes and topics for discussion. The Staff Ride Team also provides information and guidance to U.S. Army organizations on how to conduct staff rides for the purpose of educating leaders.

For more information, including how to request staff rides, visit https://www.armyupress.army.mil/Staff-Rides/Virtual-Staff-Ride/.

Capt. Kyle Nielsen, an emergency medicine physician from 173rd Infantry Airborne Brigade, explains the importance of using a Thermal Angel (equipment used to warm blood) during a class on walking blood banks in their Role 2 prolonged field care training 13 September 2019 during Exercise Saber Junction 2019 at the Grafenwoehr Training Area, Germany. (Photo by Pfc. Ashunteia' Smith, U.S. Army)

Blood Types and Titers

Saving Lives on the Battlefield with Blood Far Forward

Lt. Col. D. Max Ferguson, U.S. Army

Second only to wartime tactics aimed at avoiding unnecessary injuries, a robust and timely whole blood transfusion capability is the most effective and most important lifesaving intervention on the battlefield. Severe blood loss causes 90 percent of battlefield deaths.[1] Administering whole blood to critically wounded soldiers within thirty-six minutes is crucial for casualty survival; therefore,

timely access to whole blood is especially important in large-scale combat operations (LSCO) where it is difficult to get medical help within the "golden hour."[2] Consequently, walking blood banks (WBBs) and access to stored whole blood will be an essential part of casualty care, making lifesaving blood available to remote aid stations and even platoons treating casualties at the point of injury.

Donors of Low-Titer Group O Blood Are Essential

A recipient's blood type has little relevance in most prehospital and emergency whole blood transfusion programs. The donor blood is what matters, and the universal donor (an individual whose blood can be transfused into anybody) is one with *low-titer, Group O blood*.[3] *Titer* refers to the concentration of specific antibodies in blood; the level of those antibodies correlates to the strength of a possible immune reaction. Low titer means that the likelihood of an adverse reaction to an O blood transfusion is low. In contrast, more substantial reactions related to high-titer Group O blood or non-Group O blood can endanger the life of the recipient. Consequently, the key to establishing WBBs is identifying those soldiers with O blood type (either Rh positive or negative) and screening that group to see if their blood is low or high titer.[4] Soldiers with O blood and *low* titers are the acceptable WBB donor candidates for all combat casualties.

The screening process to identify suitable donor candidates occurs ahead of deployments. The first step is to establish an accurate roster of prescreened low-titer O volunteer donors. The next step is simulating blood transfusions and WBBs in unit training events to foster unit awareness and, ultimately, to save lives on the battlefield with whole blood.

Military Applications of Whole Blood

The benefits of administering fresh whole blood on the battlefield were first identified in World War I.[5] Whole blood provides red blood cells for anemia, plasma, and platelets for clotting. Such transfusions on the battlefield remained a staple practice through World War II.

Advances in storing, screening, and freeze-drying individual blood components (like plasma and red blood cells) after the Korean War, along with the ability to rapidly evacuate casualties to Role II and Role III hospitals, reduced the emphasis on whole blood in tactical care.[6] Notwithstanding, analysis of combat care in Iraq and Afghanistan, where over ten thousand units of whole blood were transfused since 2002, revealed that whole blood transfusions produced consistently superior results to treating casualties with blood components.[7]

Today, prehospital care, battlefield medical evacuation, and surgical teams all use transfusion to save lives. Of note, special operations units like the 75th Ranger Regiment routinely practice whole blood transfusion programs within their formations.

Predeployment Blood Screening

Recognizing the importance of rapid, whole blood transfusions, the Department of Defense (DOD) issued DOD Instruction 6480.04, *Armed Services Blood Program*, in January 2022 (and updated in June 2023), directing the implementation of predeployment whole blood donor screening for all active and reserve units deploying overseas for more than thirty days. But this DOD policy is still pending implementation.[8]

Irrespective, *services and combatant commands do not need to wait for authority to implement their predeployment requirements. The operational Army can initiate its own screening requirements now and begin establishing WBBs for training and combat.*

The 2nd Brigade, 10th Mountain Division (2/10th MTN), understood the value in building a WBB program ahead of its deployment to Operation Inherent Resolve. In the spring of 2023, the unit spent

Lt. Col. D. Max Ferguson, U.S. Army, commands 2nd Battalion, 14th Infantry Regiment, 2nd Brigade, 10th Mountain Division (2/10th MTN). He recently earned a PhD in public policy through the Army as an ASP3 Goodpaster Scholar. He is a career infantry officer with six deployments to Iraq, Afghanistan, and West Africa with conventional and special operations units. Ferguson came to recognize the importance of whole blood on the battlefield as a battalion commander deployed to Iraq from 2023 to 2024. Units like his throughout Iraq and Syria in 2/10th MTN relied on walking blood bank programs inside their battalion Role 1 troop medical clinics to treat trauma patients.

$30,000 of its own operations and maintenance funds to screen 3,184 soldiers, resulting in 1,072 soldiers with low-titer O blood who volunteered as donors. The initiative enabled 2/10th MTN to maintain eleven active WBBs at their outstations across Iraq, Eastern Syria, and Kuwait. No other DOD personnel in the combined joint task force (CJTF) underwent whole blood screening prior to deploying to the Central Command area of operation, so 2/10th MTN soldiers were the only soldiers capable of donating to a WBB across the CJTF.

> Services and combatant commands do not need to wait for authority to implement their predeployment requirements. The operational Army can initiate its own screening requirements now and begin establishing WBBs [walking blood banks] for training and combat.

The Challenge of Titer Testing

The main difficulty in screening for ideal blood donors lies in the complexity of the testing process. While medics can easily determine a person's blood group using the Eldon Blood Typing Kits, which take just five minutes and a simple finger prick, testing for titer levels is more challenging. Currently, there is no quick test for titer levels; this requires a lab technician to analyze the blood in a laboratory setting. Each titer test can take anywhere from thirty to ninety minutes to complete. For perspective, a single lab technician might spend up to 150 hours testing just one hundred blood samples, indicating the time-intensive nature of this process.

Why Low Titer Matters

When testing for titers, we determine if the donor's blood has a high or low level of antibodies that could potentially harm the recipient.[9] Low titers in O blood means it is safe for A, B, or AB blood types because it will not cause harmful reactions. High titers, indicated by an antibody ratio above 1:256, mean there may be too many antibodies for the blood to be safely used as a universal donor.

Though this can remain a contingency option when low-titer O donors are not available, the exact match method (e.g., A with A, B with B, etc.) is not feasible or safe for prehospital combat applications and mass casualty situations. Each distinct blood type has unique compatibility matches with some similar blood types, but they are not as intuitive as A matches with A and B with B, etc.[10] Therefore, if not using the "universal donor" (Group O) blood, the risk of a mismatch between donor and recipient is too high. Receiving even one unit (500 ml) of mismatched blood can trigger a lethal transfusion reaction.

The Need for Both Stored and Walking Blood

The U.S. military must have a nimble, capable, and redundant blood program to prevent death from survivable injuries on the battlefield. The most effective blood treatment option on the battlefield is whole blood.[11] And whole blood comes from the Armed Services Blood Program (ASBP) or WBBs.[12] Stored blood from the ASBP provides a crucial battlefield support capability, as does fresh whole blood from WBBs.

The difference between ASBP and WBB can be framed as a distinction between quality and quantity. Stored whole blood from ASBP will be carefully screened and managed so quality of the blood is very high (from a safety perspective). Medics can and should carry stored whole blood in the field, but these few units of blood are best suited for initial acute injury response during prehospital or Role 1 care.

There are challenges with getting whole blood rapidly into a bleeding casualty and having a refined system using both stored whole blood (from the ASBP) and fresh whole blood (from a WBB) are needed. Stored whole blood requires refrigeration, portable specialized coolers, temperature monitoring, and a logistical cold chain transport. This is difficult, especially for maneuver units that might have competing priorities for transport;

Low-titer O whole blood is stored at the Fort Leonard Wood Blood Donor Center 22 June 2023 for the Armed Services Blood Program. This lifesaving blood product can be transfused into patients of any blood type, making it a valuable tool for the military, which often needs to transfuse blood in austere environments. (Photo by Carl Norman, Defense Health Agency)

the size, weight, and storage capacity of blood coolers marginalize their value in the tactical environment.[13] However, if there is a low-titer Group O donor in the formation, they are the "blood bank"—hence, the term "walking blood bank."

In contrast, WBB programs reduce the need to rely solely on stored whole blood systems. Field blood transfusion kits are lightweight, compact, and make whole blood continuously accessible. For example, the Ranger O Low Titer (ROLO) Whole Blood Program has become a staple for rangers, with each assaulter carrying a blood transfusion kit in the back of their body armor (see figure 1). The key to effectively employing whole blood transfusion to casualties on the battlefield is having whole blood available with a multidimensional approach using both ASBP provided WB and the WBB.

Ultimately, the two blood programs complement one another, and both are necessary. The WBB is an essential capability that *augments* ASBP's solid blood system.[14] It is crucial that the DOD maintains both capabilities. The stored whole blood program from ASBP is not postured to support the breadth of demands that LSCO will generate. Fresh whole blood from WBBs fills that gap, helping surge access to blood on the battlefield to small maneuver units and remote locations. But drawing fresh whole blood should be reserved for medical emergencies at the direction of on-scene commanders based on their assessment of the tactical situation. Ongoing DOD-funded research is examining at the clinical differences between fresh whole blood and stored whole blood.[15]

Recommendations

A new Golden Rule for LSCO. If the golden hour was the standard in previous conflicts to get a casualty to a surgical capability, *the new benchmark for tactical combat casualty care should be thirty-six minutes to the first blood transfusion* because blood transfusions within thirty-six minutes of a potentially lethal injury improves survival fourfold.[16] There is no other battlefield medical capability that

UNCLASSIFIED

Battlefield Transfusion System Package Product List

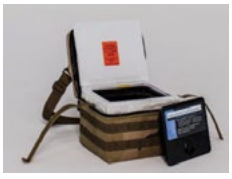
Field Blood Transfusion Kit
(Donor & recipient)

NSN 6515-01-618-3730
$110
Recommend: LFX + deployed
1x kit issued to pre-screened Low Titer O Whole Blood (LTOWB) volunteer donor

Portable Cold Storage Blood Systems

1. Solid State Refrigerator-freezer
"HemaCool" **40 units blood**
NSN 4110-01-629-9593 **$9000**
Req batt/electricity: Role I/Role II

2. Golden Hour Cooler
NSN 6530-01-505-5306 **$2300**
4 units, passive cold 48 h
MEDEVAC/designated CASEVAC



3. Golden Hr Series S Medic
NSN 6530-01-654-0062 **$600**
2 units, passive cold 24 h

(Figure by Maj. Justin Stewart, 2/10 BDE surgeon)

Figure 1. Comparison of Field Transfusion Kits and Various Portable Blood Storage Systems

has evidence to support the ability to save lives like blood.[17]

Screen soldiers before deployment. Whole blood donor screening must occur during predeployment soldier readiness processing. This is a critical step in establishing a WBB program. Soldiers with O blood must be identified, and their blood samples must be sent to a lab for screening to determine the candidates' titer levels. Field expedient kits like the Eldon Kit (see figure 2) allow medics to quickly determine blood groups and rapid tests exist to screen for transfusion transmissible diseases (like HIV and hepatitis). But O group blood must be screened for Anti-A and Anti-B antibody titer levels using special chemicals that require a laboratory setting.

Units assuming a response force status should also prescreen their soldiers for whole blood donor candidates. Waiting until a deployment is too late. There is merit to screening all soldiers for whole blood donor compatibility.

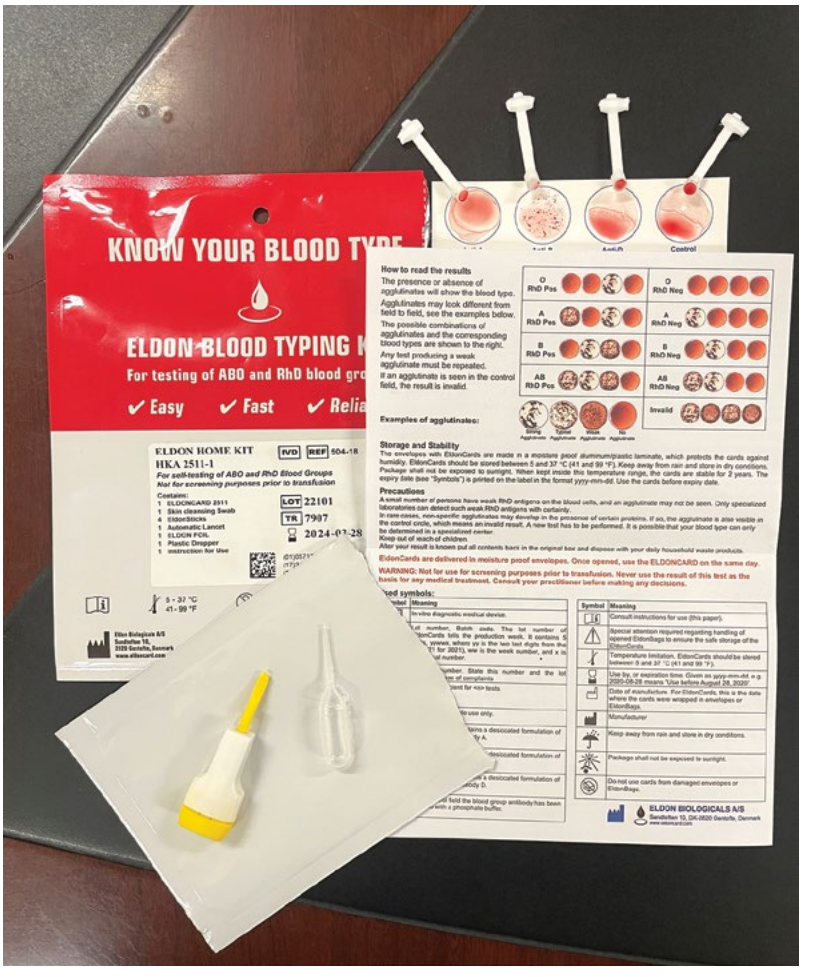
Walking blood bank training. The WBB has been used for over a century; however, the joint requirement for training with WBBs does not exist. Aid stations and maneuver units need to practice activating WBBs and performing blood transfusions in both combat and emergency scenarios using fresh and stored whole blood. Training is necessary to increase proficiency and to educate the force on important considerations like major mismatch and transfusion reactions.[18] Services should explore how to expand on training initiatives like the U.S. Marine Corps' four-day Valkyrie Battlefield Transfusion Program course at Camp Pendleton, California, or adapt the 75th

Ranger Regiment's ROLO program for soldiers in conventional units.[19]

Additional Research Opportunities

Developing a rapid titer test. A valuable effort that medical researchers can pursue is developing a rapid Anti-A/Anti-B antibody titer test that medics can use in the field. The only available screening method is time intensive, resource demanding, and costly. Developing a rapid field test to check if a person's blood titers are high or low would be a major advancement. Such a test would have worldwide applications, and it would expand the Army's ability to establish WBBs, ultimately saving lives in future LSCO.

FDA-approved test for transfusion-transmissible diseases. Being able to rapidly assess the safety of blood includes rapid testing for hepatitis, HIV, and other blood-borne pathogens. While rapid tests for HIV and hepatitis exist, they are not FDA approved. (However, they are > 90 percent sensitive and specific.)[20] Having FDA-approved rapid tests for transfusion-transmissible diseases would allow the expansion of WBBs.



(Photo by 1st Lt. Caleb Homol, 2nd Battalion, 14th Infantry Regiment)

Figure 2. Eldon Blood Typing Kits

Testing frequency for titer levels. Titer levels can change over time, so it is not clear how often they need to be tested. Early studies suggest testing twice, three months apart, may be enough to confirm a person's titer level.[21] However, we need more research to find the best testing schedule for Army units before they deploy.

Research on soldiers donating blood. We should study how donating blood affects soldiers in combat. An initial study suggests little impact on soldiers' ability to do physical tasks or shoot accurately after giving 450 ml of blood (one unit). But, we need to know more about the effects of donating 1000 ml of blood, which the usual amount taken in WBB draws.[22]

Conclusion

Blood and war are inextricably linked. The military has learned and relearned this lesson in every war over the past century. Combat casualty survival on the battlefield depends on a well-resourced and well-trained blood capability. Not equipping and training for stored and fresh whole blood transfusions will come at a cost of lives lost on the battlefield

Leaders need to maintain a reliable WBB plan for each deploying unit and those performing advanced combat training. Screening formations for low-titer O group blood donor candidates and incorporating whole blood transfusions into training events will save lives at home and overseas.

Whole blood in thirty-six minutes needs to be the new benchmark for casualty care in LSCO. Ready access to stored whole blood and WBB programs along with individual soldier proficiency in blood transfusion techniques will make that standard possible. ■

This article was written as a catalyst paper to help advance the conversation about how to transform prolonged casualty care on the battlefield for future LSCO fights. The concepts and ideas in this paper originate from across the community of tactical combat casualty care providers, including the unit-driven initiative by 2nd Brigade, 10th Mountain Division, to establish a brigade combat team walking blood bank program for their 2023-2024 deployment to Combined Joint Task Force–Operation Inherent Resolve. Col. Jennifer Gurney, chief of the Joint Trauma System, was instrumental in developing this article and contributing a medical perspective. The mission of the Joint Trauma System is to ensure every service member injured has the best chance of survival and optimal recover. Gurney focused her career on improving combat casualty care and leads the Army's research on whole blood on the battlefield. She has championed the need for expanding access to whole blood on the battlefield for years. It is time for maneuver leaders and close combat units to embrace what medical research has conclusively shown: whole blood far forward on the battlefield saves lives.

Notes

1. Brian J. Eastridge et al., "Death on the Battlefield (2001–2011): Implications for the Future of Combat Casualty Care," *Journal of Trauma and Acute Care Surgery* 73, no. 6 (Supp. 5) (December 2012): S431–37, https://doi.org/10.1097/TA.0b013e3182755dcc.

2. "The traditional (pre-2015) concept of the golden hour is based on movement of the injured person to a fixed location or echelon of care within 60 minutes. The evolved concept for 2015 and beyond involves delivering advanced resuscitative capability to the injured person within one hour, regardless of location or echelon of care." Todd E. Rasmussen et al., "In the 'Golden Hour': Combat Casualty Care Research Drives Innovation to Improve Survivability and Reimagine Future Combat Care," *Army AL&T Magazine* (January-March 2015): 82, https://cccrp.health.mil/ScientificPapers/In%20the%20Golden%20Hour.pdf. The thirty-six-minute limit is from Stacy A. Shackelford et al., "Association of Prehospital Blood Product Transfusion during Medical Evacuation of Combat Casualties in Afghanistan with Acute and 30-Day Survival," *Journal of the American Medical Association* 318, no. 16 (October 2017): 1581–91, https://doi.org/10.1001/jama.2017.15097.

3. There are eight blood groups across the ABO and Rh blood group system. The four types are A, B, AB, or O with each group either Rh positive or Rh negative, for eight total variations.

4. Group O-negative is commonly considered the universal donor but for Army walking blood bank purposes, either variant of the O group is suitable. Healthy adult males and females of any blood group can receive O-positive blood, though females who are Rh negative may experience a condition called alloimmunization complications during future pregnancies, even years after the transfusion. There are medications available to take during pregnancies to counter this issue, so the overall risk is low but still important to acknowledge.

5. Fresh whole blood refers to drawing warm blood from a donor and making it immediately available to a trauma patient. Fresh whole blood can be administered to a patient within twenty-four hours without cold storage or can be preserved for storage if refrigerated within eight hours of the draw. Stored whole blood needs to be kept cold in a fridge or specialized cooler and has a shelf life of about two weeks. It cannot be administered cold to a patient, so heating elements are needed to bring stored whole blood to the right temperature during transfusions.

6. Jennifer M. Gurney and John B. Holcomb, "Blood Transfusion from the Military's Standpoint: Making Last Century's Standard Possible Today," *Current Trauma Reports* 3 (2017): 144–55, https://doi.org/10.1007/s40719-017-0083-1; J. R. Hess and M. J. Thomas, "Blood Use in War and Disaster: Lessons from the Past Century," *Transfusion* 43, no. 11 (November 2003): 1622–33, https://doi.org/10.1046/j.1537-2995.2003.00576.x.

7. Jennifer M. Gurney and Philip C. Spinella, "Blood Transfusion Management in the Severely Bleeding Military Patient," *Current Opinion in Anaesthesiology* 31, no. 2 (April 2018): 207–14, https://doi.org/10.1097/aco.0000000000000574; Cecily K. Vanderspurt et al., "The Use of Whole Blood in US Military Operations in Iraq, Syria, and Afghanistan since the Introduction of Low-Titer Type O Whole Blood: Feasibility, Acceptability, Challenges," *Transfusion* 59, no. 3 (March 2019): 965–70, https://doi.org/10.1111/trf.15086; Jennifer M. Gurney et al., "Whole Blood at the Tip of the Spear: A Retrospective Cohort Analysis of Warm Fresh Whole Blood Resuscitation Versus Component Therapy in Severely Injured Combat Casualties," *Surgery* 171, no. 2 (February 2022): 518–25, https://doi.org/10.1016/j.surg.2021.05.051.

8. Department of Defense Instruction (DODI) 6480.04, *Armed Services Blood Program* (Washington, DC: Department of Defense, 29 June 2023, incorporating change 1), https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/648004p.pdf?ver=09Gn5iK7UP7ucvoCjrVzyQ%3D%3D. The official DOD requirement will be initiated not later than eighteen months after the Defense Health Agency issues standardized procedural guidance pursuant to the DODI.

9. Antibodies are measured as a special blood protein in a given volume of blood that directly correlates to the strength of an immune reaction. A titer test determines a person's immunity to a particular blood agent.

10. To review the unique combinations of patient to donor matches, see "Blood Type Compatibility Chart," Stanford Blood Center, accessed 8 January 2024, https://stanfordbloodcenter.org/donate-blood/blood-donation-facts/blood-types/0318-south-bay-center-infographics_compatibility-web/.

11. In addition to whole blood, medical providers can maintain stores of individual packaged blood components such as packed red blood cells, frozen fresh plasma, cold-stored platelets, and liquid plasma.

12. The Armed Services Blood Program (ASBP) was established in 1952 by President Harry Truman because the United States entered the Korean War without a blood capability, and thousands

of U.S. service members died as a result. The ASBP now falls under the Defense Health Agency. The ASBP has not been resourced to support the full range of military operations for large-scale combat operations (LSCO) or to even surge for increased tempo during a contingency. The Walking Blood Bank can bridge this gap for a very short period but has substantial challenges in a highly kinetic environment. Additionally, ASBP functions have a lag time to get to full operational capability; for example, the ASBP took nearly a decade to become a fully functional program in 1962 after it was mandated by Truman in 1951. Continued diminishment of the ASBP will result in an unacceptable lag time during LSCO and force attrition from preventable deaths.

13. See Micah J. Gaspary et al., "Obstacles to an Effective Low-Titer O Walking Blood Bank: A Deployed Unit's Experience," *Military Medicine* 186, no. 1-2 (January-February 2021): e137–42, https://academic.oup.com/milmed/article/186/1-2/e137/5909708. For reference, the average trauma patient can expect to need eight units (one unit = 500 ml) of whole blood. So, carrying two to four units in a portable cooler may be of marginal use in a restricted LSCO or mass casualty situation. Patients with severe blood loss may require fifty units or more to save their life. One blood transfusion study found, "with 50 reliable donors, we could likely massively transfuse two to four patients."

14. Anthony B. Hall et al., "Blood Utilization at Abbey Gate," *Trauma* 25, no. 2 (December 2022): 174–75, https://doi.org/10.1177/14604086221145653. The Abbey Gate attack on Hamid Karzai International Airport on the afternoon of 26 August 2021 demonstrated the need to augment blood component supplies with walking blood banks when nineteen patients required blood, exceeding the available stockpiles at trauma centers.

15. Jennifer M. Gurney et al., "Determining Resuscitation Outcomes in Combat Casualties: Design of the Deployed Hemostatic Emergency Resuscitation of Traumatic Exsanguinating Shock (Deployed HEROES) Study," *Journal of Trauma and Acute Care Surgery* 93, no. S2 (Supp. 1) (August 2022): S22–29, https://doi.org/10.1097/TA.0000000000003681.

16. Shackelford et al., "Association of Prehospital Blood Product Transfusion during Medical Evacuation."

17. Russ S. Kotwal et al., "The Effect of Prehospital Transport Time, Injury Severity, and Blood Transfusion on Survival of US Military Casualties in Iraq," *Journal of Trauma and Acute Care Surgery* 85, 1S (Supp. 2) (July 2018): S112–21, https://doi.org/10.1097/ta.0000000000001798; Shackelford et al., "Association of Prehospital Blood Product Transfusion during Medical Evacuation"; Jeffrey T. Howard et al., "Use of Combat Casualty Care Data to Assess the US Military Trauma System During the Afghanistan and Iraq Conflicts, 2001–2017," *Journal of the American Medical Association Surgery* 154, no. 7 (July 2019): 600–8, https://doi.org/10.1001%2Fjamasurg.2019.0151.

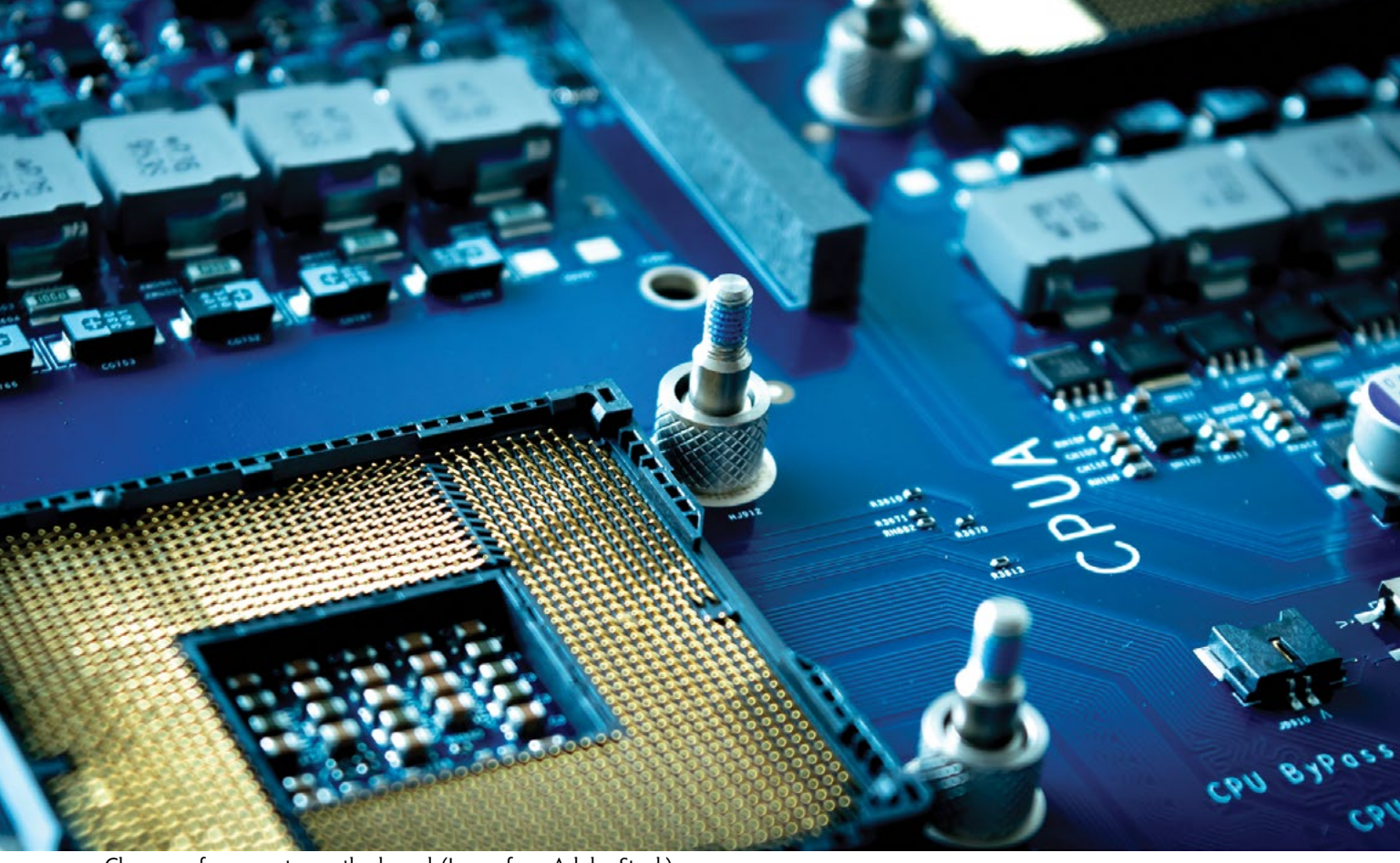
18. A blood transfusion reaction can lead to a dangerous anaphylactic situation. Giving a nonmatched unit of blood has potentially grave (and rapid) consequences where patients can go into renal failure and die. Sometimes it can be treated with steroids or EpiPen treatments to stabilize the patient. The risk of transfusion reaction from nonmatched blood creates a major complication for any trauma patient in any circumstance, but the risk of accidentally causing a blood transfusion reaction in an austere tactical scenario is especially dangerous. This is why prescreening and training are so important.

19. For more on ROLO, see Kaoru H. Song et al., "Ranger O Low Titer (ROLO): Whole Blood Transfusion for Forward Deployed Units," Military Medicine 188, no. 7-8 (July-August 2023): e2733–37, https://doi.org/10.1093/milmed/usab473. The Army also runs a five-day "Tactical Combat Medical Care" course at Fort Sam Houston, Texas, for providers and senior NCOs.

20. Andrew P. Cap et al., *Whole Blood Transfusion*, Joint Trauma System Clinical Practice Guideline 21 (Fort Sam Houston, TX: Joint Trauma System, 15 May 2018), https://jts.health.mil/assets/docs/cpgs/Whole_Blood_Transfusion_15_May_2018_ID21.pdf.

21. Bailey et al., "Changes in Donor Antibody Titer Levels Over Time."

22. Geir Strandenes et al., "Donor Performance of Combat Readiness Skills of Special Forces Soldiers Are Maintained Immediately after Whole Blood Donation: A Study to Support the Development of a Prehospital Fresh Whole Blood Transfusion Program," *Transfusion* 53, no. 3 (March 2013): 526–30, https://doi.org/10.1111/j.1537-2995.2012.03767.x.



Close up of a computer motherboard. (Image from Adobe Stock)

Biological Electronics

A Transformational Technology for National Security

James J. Valdes, PhD
James P. Chambers, PhD
Diane M. Kotras

Military systems rely on microelectronic components, and the potential for increased efficiency and speed of computing processing made possible by biological components convey potential advantages to mission capabilities. These include, but are not limited to, lower energy requirements, hence reduced battery loads; signature reduction due to reduced heat production; more flexible responses

by autonomous systems; and more efficient data manipulation and storage. Next-generation weapons systems are increasingly data-driven and will require computing power beyond the capability of current electronics. The ability to pack more transistors into semiconductor chips is reaching its physical limit, ending the well-known Moore's law, the observation that the number of transistors that could be put on a silicon chip doubles every year. It is simply a matter of limited space, and massive parallel processing or three-dimensional chip architectures are partial but not comprehensive answers. Radical new approaches to next-generation microelectronics are needed.

Biological structures and organisms perform many of the same functions as electronic and optical devices, including electron transfer; signal generation, transduction, and amplification; data analysis, reduction, and storage; and energy harvesting. The languages of biology and electronics are quite different. The former is primarily represented by small molecules and ions and the latter by electrons and photons, which operate at different space and time scales.

Semiconductors are the building blocks of electronic brains in military systems. They conduct electrons over relatively long distances, such as between transistors, whereas cells transfer electrons over very short ranges between molecules. Early work on biosensors focused on immobilizing cells or cellular components onto the surface of optical fibers similar to those used for telecommunications or on the surface of semiconductors to exploit the ability of cells to recognize and respond to many thousands of environmental stimuli (see figure 1).[1] These stimuli include, for example, chemicals, toxins, biological molecules, radiation, heat, and magnetic fields. More recent observations suggest that cells may be incorporated into electronic devices, conveying information processing capabilities many orders of magnitude beyond that of current *in silico* (silicon-based) systems alone while using far less energy per task.[2] The combination of *in carbo* (carbon-based) and *in silico* components has the potential to significantly disrupt the semiconductor industry, which the Semiconductor

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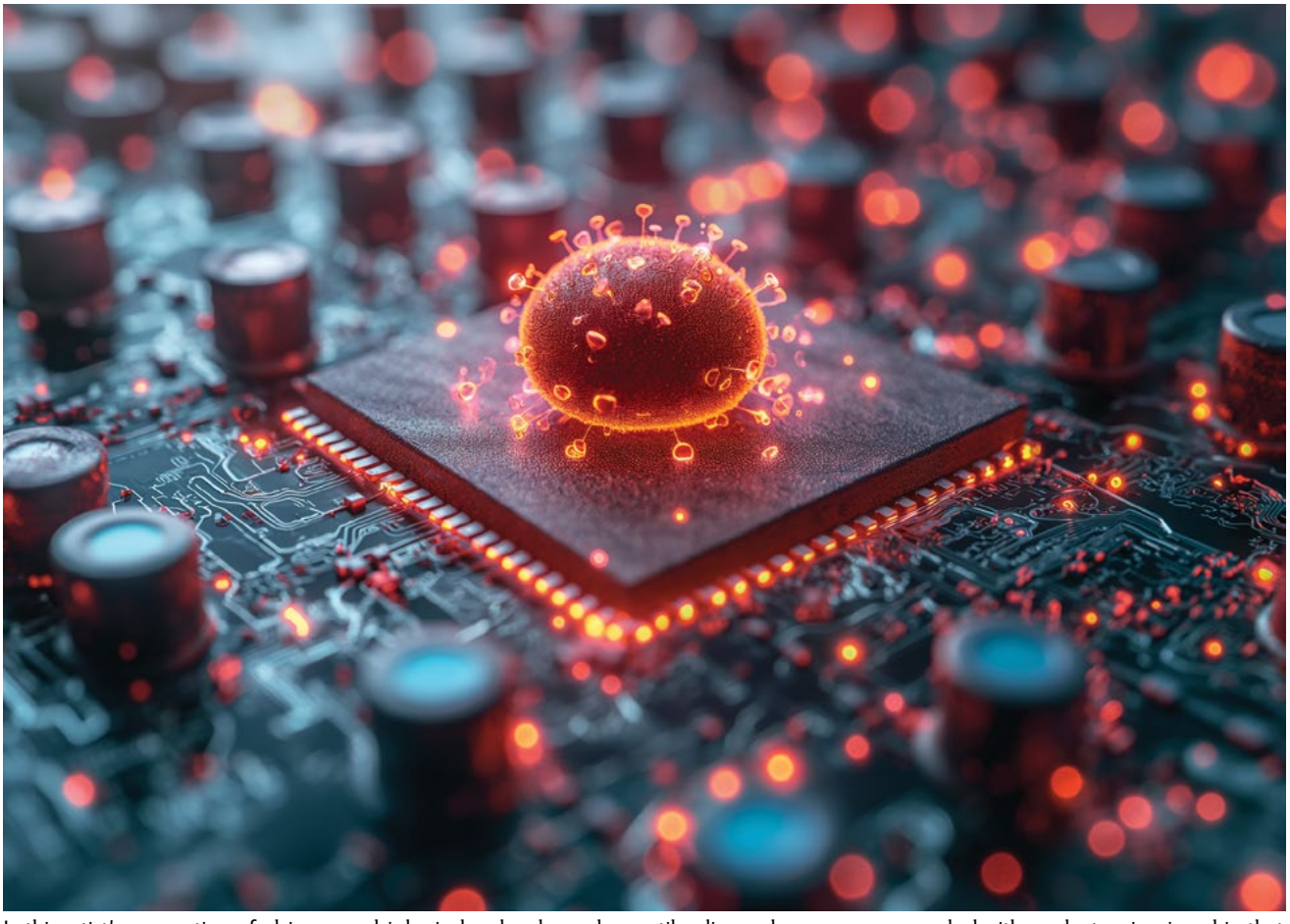


In this artist's conception of a biosensor, biological molecules such as antibodies and enzymes are coupled with an electronic microchip that processes data. (AI illustration by Gerardo Mena, Army University Press)

Figure 1. Artist's Conception of a Biosensor

Industry Association estimated to be more than $400 billion in 2018.[3]

The Biden administration's Executive Order 14081 explicitly calls for "genetic engineering technologies and techniques to write circuitry for cells and predictably program biology in the same way in which we write software and program computers."[4] Finally, the 2022 Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act recognizes the critical importance of developing advanced next-generation semiconductors.[5]

Background

Extremophiles are organisms that live at the extremes of environmental conditions such as very high or low temperatures, high ambient radiation, or low oxygen or nutrient conditions. Robert Baier, of the National Science Foundation's Center for Biosurfaces at the State University of New York at Buffalo, as well as Anne Meyer and Robert Forsberg, observed that the extremophile bacterium *Pseudomonas syzgii* could "armor" themselves with semiconductor crystals by embedding them in the cell membrane and, more amazingly, these bacteria penetrate and survive within semiconductor wafers under zero oxygen conditions during the chip fabrication process (see figure 2).[6] While this was initially viewed as a contamination problem for semiconductor fabrication, it became the impetus for the idea that biological cells could be incorporated into electronic devices to confer enhanced properties that traditional semiconductors lack. Living bacteria have also been found to be encased in minerals, and their intact biological functions under these extreme conditions suggest that these bacteria almost certainly

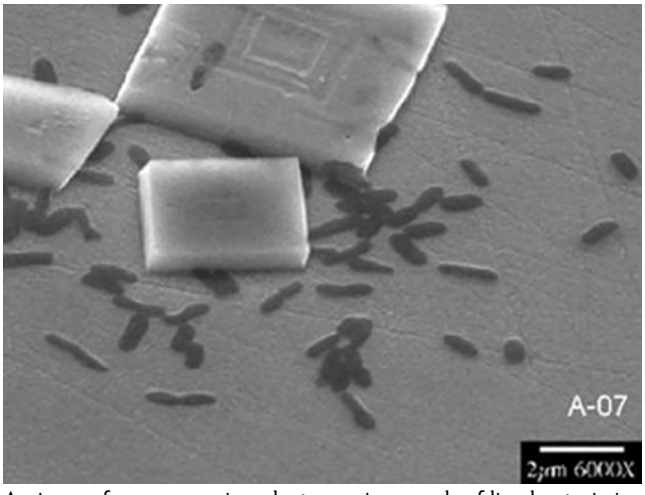
engage in electronic communication via the movement of electrons as with electricity, opening the possibility for functional organism-based biological semiconductor fabrication.[7]

Ralph Calvin, Paolo Lugli, and Victor Zhirnov point out that living cells process complex inputs and outputs spanning multiple modalities (e.g., chemical, electrical) and accomplish these computational operations at decreased energies, which cannot be matched by today's silicon-based electronic systems.[8] In a comparison of a theoretical silicon "cell," represented by a 1 $u m^3$ memory and logic circuit, with a biological cell, they calculate that the silicon cell has 10^5 bits of memory, 300 to 100,000 logic bits, consumes 10^{-7} W of power, and generates 1 W/cm^3 of heat. In comparison, the biological cell has 10^7 bits of memory, > 10^6 logic bits, uses 10^{-13} W of power, and generates 10^{-6} W/cm^2 of heat, a difference of six orders of magnitude of energy use in favor of the biological cell. This is a million-fold difference. The military's reliance on technology requires a lot of power and biological systems' efficiency in this area could reduce logistics and sheer weight burden of batteries.

The "Grand Challenges" to electronics are to reduce energy consumption and heat generation while increasing processing power. Biological systems are clearly superior to traditional electronics with respect to these characteristics. The advantages to military systems in efficiency and computational power and the potential to design intrusion or hacking resistant, self-healing circuits can scarcely be overstated.

Current State-of-the-Art

Current concepts of hybrid bioelectronic devices focus on using the biochemical processes in living systems as a "biological front-end," biological recognition elements such as antibodies, which would interact directly with the external environment and share information with a silicon semiconductor "back-end," the physical component that processes the data. Biochemical processes, which operate at small scales that semiconductor devices cannot match, react to the environment and transduce a signal that is usually either ion transport through a cellular membrane, or activation of proteins within the cell. In some cases, ephaptic transmission, direct stimulation of one cell by another via magnetic fields, may occur. Mechanisms, whereby cells can use



An image from a scanning electron micrograph of live bacteria interacting with semiconductor materials. (Figure courtesy of the Baier Lab, State University of New York at Buffalo)

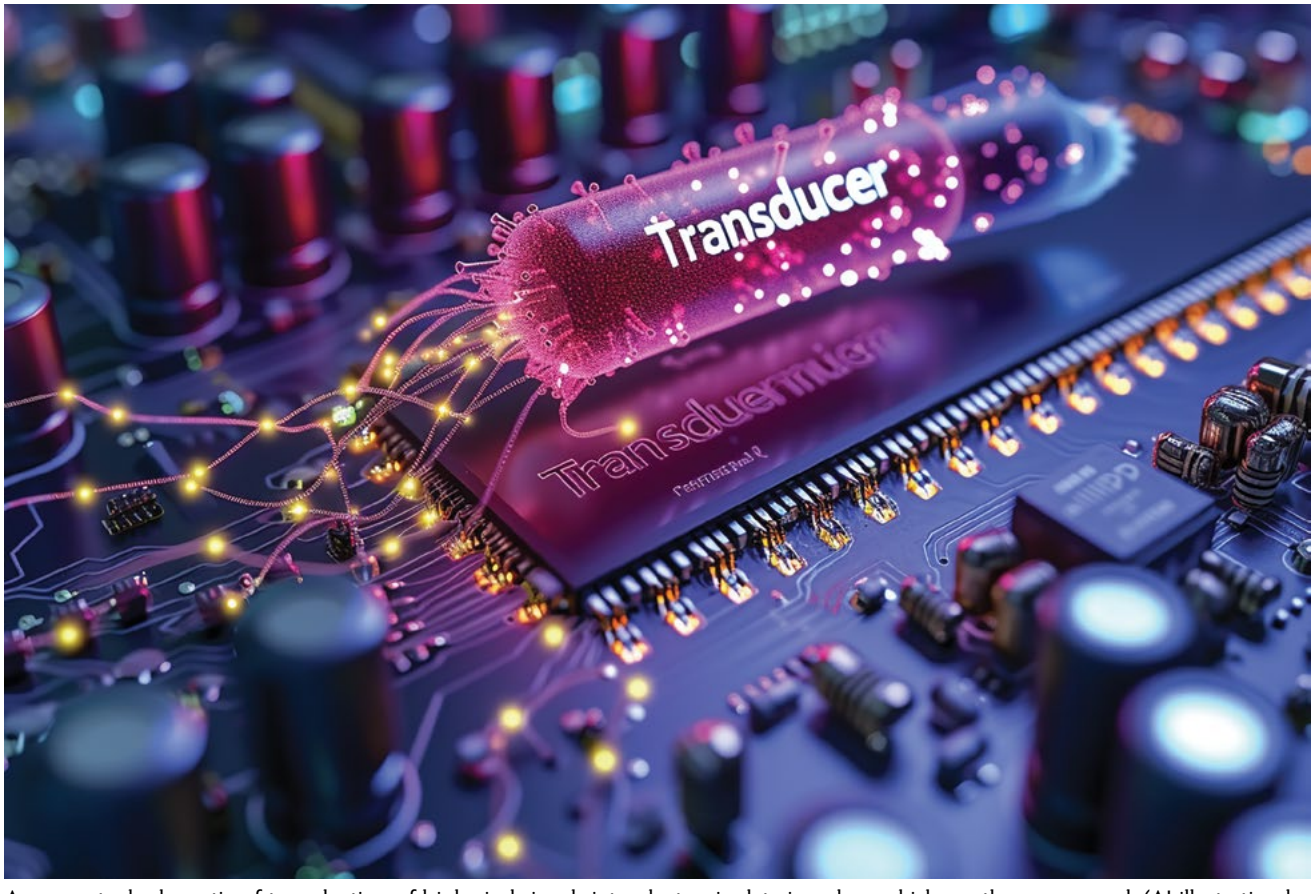
Figure 2. Live Bacteria Interacting with Semiconductor Materials

electro-conductive pili (structural fibers protruding from a cell) to transport electrons as electrical current, will be discussed in clarifying detail later in this article. The pili can be utilized as part of the cell assembly itself or manufactured and used as stand-alone electronic components.[9] In a scenario in which a cell is the component that interacts with the environment, the biological front-end transmits its information to the semiconductor back-end that handles computation, control, and information storage (see figure 3).

Long-Term Vision for Future

In the short-term, living cells or their components would be used to build bioelectronic devices, but the longer-term focus is to design programmable abiotic (nonliving), artificial "cells" with many of the functions of biotic (living) cells. These functions include sensing, information processing, and self-repair. There is considerable similarity between mathematical models that describe noisy electron flow in transistors and noisy molecular flows in biochemical reactions in living cells, and both are subject to the laws of thermodynamics. In other words, they both follow the same natural rules, and their similarities suggest that *cells and electronic components could interact in a predictable and controllable manner*.

The Department of Defense (DOD) Community of Interest for Advanced Electronics listed "bioelectronics"



A conceptual schematic of transduction of biological signals into electronic data impulses, which are then processed. (AI illustration by Gerardo Mena, Army University Press)

Figure 3. Conceptual Schematic of Transduction of Biological Signals

as one of the technologies to watch for in the future, and the National Institute for Standards and Technology Advanced Manufacturing Technology Program awarded funding to the Semiconductor Research Corporation in 2015 to develop a Semiconductor Synthetic Biology Consortium (known as SemiSynBio). The mission is to bring together the semiconductor and biotechnology industries to develop new energy-efficient information technologies.[10] The short-term goals of SemiSynBio are to develop biological self-assembly for features that are on a much smaller scale than the resolution of lithography, the current semiconductors manufacturing technology. The long-term goal is to design new types of artificial cells or their components that can be integrated into semiconductors. In 2022, the National Science Foundation announced SemiSynBio III, "Semiconductor Synthetic Biology Circuits and Communication for Information Storage." The age of biological electronics, once the stuff of science fiction, is becoming reality.

Issues and Obstacles to Advances in Bioelectronics

The current national and commercial efforts to "onshore" manufacture critical technologies such as semiconductors is especially supportive of bioelectronics. The potential for supply chain disruptions for critical electronic materials and components is relevant to the DOD. For example, there are few trusted second sources for field programmable gate arrays and application-specific integrated circuits. By contrast, the precursors for manufacturing biological components are abundant, inexpensive, and freely available.

Microbes and bioelectronic devices. Bacteria communicate with each other and the physical environment through various biochemical and electrical mechanisms. Many microorganisms are known to be electroactive and electron transport, a form of bioelectric communication, has been demonstrated between different species (*Geobacter metallireducens* and *G.*

sulfurreducens).[11] Many bacteria form biofilms, and the movement of electrons between bacteria is believed to be the mechanism by which the biofilms are electrically active. These slimy biofilms are essentially colonies whose inhabitants (bacteria) communicate to regulate metabolic processes, such as growth, energy production and use, waste disposal, and reproduction.

Lori Zacharoff and Mohamed El-Naggar suggest that multistep "hopping" of electrons allows conduction over long-length scales previously thought to be impossible in biological systems and further suggest that understanding these processes is critical to the design of a new generation of "living electronics."[12] Recall that length scales in traditional electronics are much longer than those in cellular systems; this mismatch is a drawback for the former and a potential obstacle for designing bioelectronic systems. The structural foundation of this electron transport is thought to be the electrically conductive pili (cellular fibers known as e-pili), which microorganisms have evolved to interact with the environment and with each other.[13] The composition of the e-pili is critical in that increasing the content of aromatic amino acids facilitates electron transport, providing a genetic technology by which designers can "tune" e-pili electrical characteristics by manipulating the content of these amino acids along the length of the fiber. Derek Lovley further posits that *the ability to genetically engineer the composition of e-pili suggests the possibility of manufacturing a "green" electronic material from bacteria that can be easily manufactured via fermentation. These renewable feedstocks have the added benefit of being biodegradable* (see figure 4).[14]

Yang Tan et al. have used the electrically conductive pili of *G. sulfurreducens* to produce "microbial nanowires."[15] They genetically manipulated the bacteria by substituting tryptophan for the carboxyl terminus phenylalanine and tyrosine to produce high aspect ratio (extreme length-to-width ratios) electrically conductive nanowires that are physically robust and suitable for use as electronic components. To illustrate scale, a human hair is about 70,000 nm thick, a bacterial cell is about 1,000 nm, and nanowires are several nanometers. Other microbial species, such as *Aeromonas hydrophila*, express electrically conductive filaments that appear to facilitate intercellular communication. Laura Castro et al. genetically manipulated such nanowire formation by adding synthetic acyl-homoserine and suggested that these components could be useful as biological conductors in electronic devices.[16]

The large number of microorganisms that express e-pili, the relative ease with which these can be genetically manipulated, and their nanoscale structures suggest that there exists a large natural reservoir of biomaterials that can lend new characteristics to traditional electronic devices. These biomaterials can be produced with minimal environmental impact compared to today's semiconductor manufacturing methods, offering another advantage of biological systems versus electronic components.

Combining Bioelectronic Power Generation with Devices

In a seminal review paper, Michael Stroscio and Mitra Dutta describe the many subtle ways in which biological structures and processes could be combined with electronic devices to provide new functionalities.[17] They point out that the nanoscale of electronic devices permits direct contact with electroactive cells and subcellular structures such as ion channels, receptors, and other proteins that span the cell membrane and communicate with the external environment. A growing scientific literature exists in which the transmembrane protein bacteriorhodopsin (BR) is used as a sensing element—the "front end," as previously described—for electronic devices. For example, Yu-Tao Li et al. reviewed the BR literature specifically as it pertains to the design of bioelectronic devices.[18] They describe photochemical and electrochemical applications and speculate on new designs for high-performance BR-based hybrid bioelectronic devices.

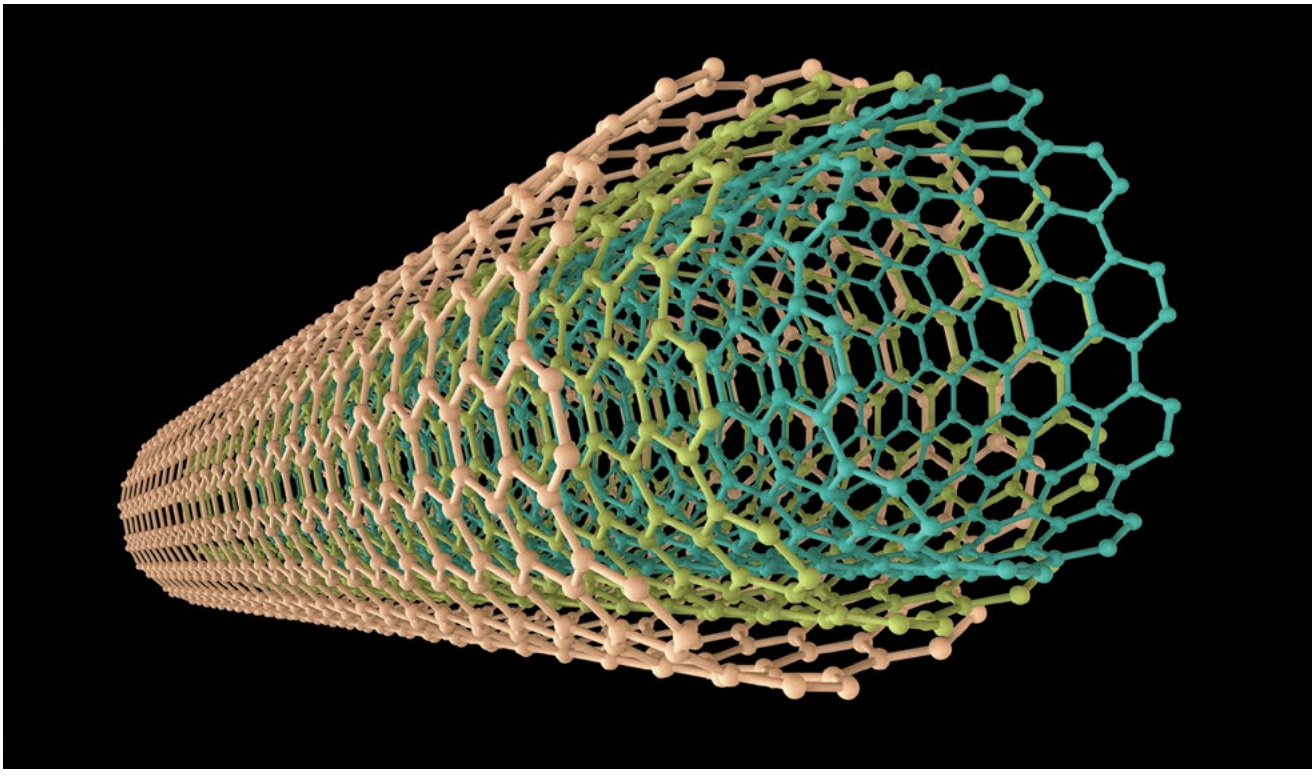
Special properties of biological components. Ion channels and receptors further offer an "analog" capability in which responses to environmental stimuli are not necessarily "on" or "off" as with traditional electronic devices but are graduated with initial responses to very small chemical, physical, and electrical perturbations in the environment and that can be tuned for sensitivity and specificity. The increasing reliance of tactical missions on precision smart weapons and, more specifically, autonomous systems require the ability to respond to input of very low signal-to-noise ratios; this analog aspect of biological systems would permit finely graded responses.

In this artist's conception, a bacterium is shown interacting with an electronic chip via its conductive nanowire pili. (AI illustration by Gerardo Mena, Army University Press)

Figure 4. Bacterium Interacting with an Electronic Chip

Leon Juarez-Hernandez et al. describe a bio-hybrid interface between cells and a poly(aniline) semiconducting polymer.[19] The cells remain functional as assessed by standard electrophysiology, which measures a cell's electrical activity, hence viability, and this was achieved with heart, skeletal muscle, and nerve cells. These bio-hybrid interfaces also demonstrated memristive properties; that is, the ability to alter function in response to prior electrical activity (experience). This is a primitive model for learning and memory and analogous to the concept of Hebbian circuits in the human brain, a circuit of brain cells that becomes either more or less sensitive and responsive with use and can "remember" previous actions. Thus, coupled with artificial intelligence, the bioelectronic component could add flexibility to the response repertoire of autonomous systems. Leon Chua first proposed the concept of the memristor and it has now become an active area of research.[20]

There have been other remarkable instances in which organic components have demonstrated semiconducting properties.[21] That organic polymers could serve as semiconductors has been well known and, in fact, was the subject of a Nobel Prize.[22] The demonstration that a small peptide composed of two phenylalanine amino acids has the optical and electronic properties of semiconductor nanocrystals was completely unexpected and adds important new dimensions to this area.[23] These can form the building blocks of quantum dots, which are nanoscale crystals with semiconductor properties intermediate in size between meso- and molecular-scale materials, "meso" being a size between materials of molecular size and the large objects of everyday experience. This peptide



(Image from Adobe Stock)

Figure 5. Molecular Structure of a Carbon Nanotube

also self-assembled to form nanotubes composed of millions of quantum dots. The authors point out that, unlike metal-based quantum dots, these are biodegradable and nontoxic, and because they are formed with a single peptide bond, they are cheap and easy to manufacture and have minimal environmental impact upon disposal. Because there are twenty natural amino acids and many hundreds of noncanonical (man-made, not found in nature) amino acids, the likelihood of designing quantum dots with properties not found in traditional electronic materials is almost limitless (see figure 5).

As with peptide quantum dots, many biological materials self-organize. Recent advances in additive manufacturing have also led to the use of inkjet printing to manufacture organic semiconductors. Yoon-Jung Kwon, Yeong Don Park, and Wi Hyoung Lee describe the printing of an organic field effect transistor using inkjet printing and organic semiconductor inks. Organic field effect transistors have the advantage of being cost-effective, compatible with most plastics, and can be tailored with specific mechanical properties.[24] This makes them suitable for devices that must function in a physiological environment, such as human-machine interfaces and prostheses for physical or cognitive enhancement, and as components for soft robotic systems. Petri Ihalainen, Anni Määttänen, and Niklas Sandler published a review of roll-to-roll and inkjet printing of proteins, biomacromolecules, and cells, and the application of these techniques to biosensors, diagnostics, and DNA sequencing.[25] The inverse relationship of biology and semiconductors is also worth noting, as many organisms have been shown to synthesize inorganic metallic nanoparticulate semiconducting materials with unique optical, electronic, and mechanical properties and with potentially high value to industry.[26]

Technical hurdles. There is little question that biological cells, their components, and their synthetic analogs will enable the design of new classes of semiconductors and other bioelectronic devices with unique properties and distinct advantages in information processing capacity and vastly reduced energy consumption and heat generation. As would be expected

in such a new area of inquiry, we have identified several theoretical and practical problems that will need to be addressed. The most challenging of these is the precise immobilization of cells and/or their functional components within or onto semiconductors, genetic engineering of cells to introduce genetic control switches with which to control cellular activity, reconciling the differences in space and time scales of the languages of biology and electronics so they can communicate seamlessly, and engineering completely artificial cells with designer properties and the functional equivalents of living cells. Synthetic biology will be a critical technology in realizing fully integrated bioelectronic devices, which is the ultimate goal of the SemiSynBio consortium.[27] More prosaic considerations are to define the design parameters for a benchtop foundry simulator, a small-scale model of a semiconductor foundry with which to conduct the required experiments, and the selection and adaptation of analytical techniques such as cryo-electron microscopy for real-time morphological and electrochemical characterization of immobilized microbes as they exist in an electronic device.

Discussion and Conclusions

The semiconductor industry is rapidly nearing the physical limits of traditional materials. It has already started to look at alternate techniques with which to pack more computing power into very limited space. As previously noted in this article, a biological cell consumes approximately six orders of magnitude less energy and generates approximately six orders of magnitude less heat than comparable *in silico* semiconductors. While these numbers are somewhat theoretical, they point out the relative advantages that biological systems have over electronics and the potential to disrupt the semiconductor industry if biological cells, whether natural, bioengineered, or artificial, could be integrated with traditional semiconductors. In addition, the cell's ability to process many modalities of input/output simultaneously is advantageous, as are the redundancies and feedback loops that allow for self-correction and self-repair. In fact, the ability of cellular circuits in the brain to self-modify their sensitivities, the Hebbian circuits described earlier, is a key component of memory and underpins the theoretical description of memristors, described earlier in this article. A hybrid biological semiconductor could also confer the advantage of self-healing to computer networks.[28]

The concept of hybrid biological semiconductors is likely DOD Technical Readiness Level-2, defined as a concept whose application has been formulated. As described earlier, the National Institute for Standards and Technology's Advanced Manufacturing Technology Program has funded the development of a roadmap by the SemiSynBio consortium, and the National Science Foundation's SemiSynBio III is the more recent iteration. New classes of biologically based semiconductors would have wide applications in intelligent process control for autonomous systems, chemical and biological detection, integrated medical devices for enhanced human performance, advanced manufacturing processes, DNA-based memory storage, environmental monitoring and control, and would save enormous amounts of energy now used to cool server farms, and reduce heat signatures of military systems in the field. The overlap of biological semiconductors with the broader field of biomaterials presents opportunities to develop biosensors, other implantable biomedical devices, and tissue scaffolds based on novel hydrogels, three-dimensional polymers in which the liquid component is water, that have important implications for military medicine such as wound healing and smart physical and cognitive prostheses.

In summary, capitalizing on the ability of biological systems to process information more efficiently than current *in silico* semiconductors presages a new frontier in information technology. Biological electronics offer the possibility of intrusion-resistant and self-healing networks, and microbes' ability to modulate signals may provide resistance to electromagnetic pulses.

The DOD's recent investments in synthetic biology and biotechnology have it well-positioned to assess the potential for military applications. Future military systems will benefit from heretofore unimaginable advances at the nexus of biology, materials science, and physics. The resulting breakthrough discoveries will provide the Nation's security posture with greater operational capabilities and cost benefits. ■

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What's the best way to win arguments on the internet? Don't argue. On the rare occasion where it may be permissible for a senior leader to engage on personal social media accounts, leaders must consider whether they actually should. Ultimately, the application of the U.S. Army's "Think, Type, Post" will conclude that they should, in fact, not. (Illustration by Michael Lopez, *Military Review*)

How to Win Arguments on the Internet

Maj. Joseph D. Levin, U.S. Army

Providing credible, accurate, and timely information serves as the best means to counter misinformation, disinformation, and propaganda, which can lead to deterred competitors and defeated adversaries. Maintaining trust, transparency, and credibility is critical when providing public information. Soldiers must never compromise this.

—Field Manual 3-61, *Communication Strategy and Public Affairs Operations*

You are the brigade judge advocate for a brigade combat team. The brigade commander, Col. Smith, calls you to discuss a high-profile incident from your brigade that is receiving substantial media attention while under investigation. Smith learned that anonymous accounts, private citizens using their real names, and some news stations are spreading false information and rumors about the incident on social

media. This misinformation risks harming the investigative process, the installation's relationship with the local community, and the Army's overall reputation.[1] Capt. Stephens, a company commander from a different brigade, is also forwarding and reposting memes on his social media accounts ridiculing the situation and Smith's brigade. Stephens uses an unofficial account with a profile picture of himself in his Army uniform. Smith initially called to ask your thoughts on whether the investigation can move more quickly and whether the results can be released once done to help put this issue to rest quickly. While talking, Smith also mentions that she wants to respond to these rumors on social media directly and set the record straight. She also plans on directly responding to Stephens' social media posts with some pointed mentoring. What is your advice to Smith?[2]

The role of the information environment has grown rapidly in the past few decades. The military has always understood the importance of information on the battlefield, but its role has evolved and grown with the evolution of digital and social media. This is true in domestic operations and in combat. The modern information environment and social media have a deeper and more complicated impact on the military's relationship with its civilian leadership and the public, which impacts civilian oversight of the military and recruiting efforts.

A public affairs (PA) crisis is defined as "an event that affects an organization's long-term sustainability and reputation … [and] has the potential to create significantly negative media coverage."[3] Public affairs crises can happen at different echelons, from local matters of interest to individual units (e.g., receiving an unfavorable mention on a social media website such as U.S. Army WTF! Moments) and up to national or internationally noted incidents like Fort Hood's response to the murder of Spc. Vanessa Guillén.[4] In the current era of the 24/7 news cycle and the rise of social media, most major incidents or events have a PA aspect. This means that—in addition to pure PA crises—most crises are *also* PA crises.

As part of reviewing the circumstances surrounding Guillén's death, the Fort Hood Independent Review Committee's report assessed Fort Hood's PA climate and handling of the PA crisis stemming from the Guillén investigation.[5] It concluded that Fort Hood's preparedness and handling of the PA portion of the Guillén crisis was mishandled in every conceivable way. Fort Hood's leadership did not have an adequate preestablished relationship with the community, which denied the leadership the initial credibility it needed when the crisis began. Its public affairs office (PAO) inadequately responded to the PA crisis, allowing misinformation to dominate the narrative. The command's PA efforts and direct communication were poorly received and often reflected the wrong tone, further harming the command's credibility, preventing effective messaging, and undermining trust. This overall reduced soldiers' sense of personal safety and public confidence in Fort Hood's ability to prevent similar incidents.[6]

The Fort Hood report made several recommendations regarding responses to PA crises:

1. establish better relations with the public and community around installations,
2. develop increased PA capacity to respond to crises,
3. respond quickly and factually to PA crises to inform the public and help shape perception,
4. use a trained spokesperson to respond to crises, and
5. keep the Fort Hood community informed.[7]

In addition to lessons learned from other recent PA crises, these recommendations have been incorporated into the Army's PA doctrine and related regulations, including Field Manual 3-61, *Communication Strategy and Public Affairs Operations*.

Additionally, the Army has attempted to proactively engage both internally and externally on social media, including developing an official website with guidance on using

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social media for soldiers.[8] The Army has shown that it is finally grasping the role of social media in the information domain. Looking ahead, the Army must ensure that it does not cede the information domain in the battle against misinformation, rumors, and false narratives.

This has proven difficult in practice. When units or individual soldiers attempt to respond to PA crises, it has not always achieved the desired results. In response to one such incident, Army Secretary Christine Wormuth stated that soldiers should stay "out of the culture wars" and later added they should "[u]se good judgment online. Keep it professional."[9] The Army must continue pursuing efforts to positively influence the digital and social media information domain while remaining apolitical and avoiding pitfalls of this unique operational domain.

As a threshold matter, despite the underlying issue stemming from the legal domain (an investigation in the hypothetical scenario), responding to a PA matter is not a purely *legal* issue; however, it certainly can carry many legal implications. The PAO on a brigade staff (or a garrison/division PAO if your brigade does not have one) should be directly involved in this conversation at all stages. The PAO is the commander's primary advisor on PA matters, while the legal advisor remains ready to provide legal and general counsel, including on the legal issues raised in your conversation with Col. Smith.

PA crises, whether stateside or deployed, are not a mere passing concern. They are a substantial risk to the Army's overall credibility and to your unit's mission. Responses to PA crises should be prepared in a rational, deliberate process, as with any other information operation.[10] Further, like any operation, there must be unity of effort at all levels and with the garrison PAO.[11] When the PA crisis is only a portion of a larger crisis event, the PA response should be nested and coordinated within the larger overall response planning.

Unfortunately, this article does not tell you how to win arguments on the internet *by arguing*. This article discusses how senior leaders can engage in the social media and digital information domain on issues directly relevant to their organizations and the Army, and how their legal advisors can help them navigate this labyrinth. This article will first consider universally applicable regulations, requirements, and expectations for senior leaders who brave the public domain. It will then distinguish official from unofficial accounts, identify regulatory guidance on which type is appropriate for different purposes, and offer guidance on appropriate use for both types. Finally, this article will offer a few best practices and suggestions as well as discussing how Col. Smith should respond in this hypothetical scenario.

Social Media Usage Guidelines of Universal Application

Certain social media usage guidelines apply universally, whether the individual uses official or unofficial accounts. Soldiers are held to a standard of behavior 24/7, including social media use. The Army's recommended approach to this is "Think, Type, Post."[12] Senior leaders are further held to a standard consistent with the responsibility inherent in their duties.

All soldiers are bound by the Uniform Code of Military Justice (UCMJ) at all times. Soldiers must also exemplify the Army Values in their behavior. Various UCMJ articles, such as Article 89 (Disrespect to Superior Commissioned Officer), apply equally to public online behavior.[13] While the UCMJ has always prohibited behavior that is prejudicial to good order and discipline or service discrediting, Army regulations (AR) have expanded to address specific types of behavior that may occur online (and to clarify that behavior on the internet is regulated expressly).[14] Specifically, AR 600-20, *Army Command Policy*, includes a portion of the Army Harassment Prevention and Response Program that prohibits soldiers from committing harassment, bullying, discrimination, and other toxic behaviors online.[15]

In addition to behavioral standards, universal concepts apply to those with access to different types of protected information. An example of this is personally identifiable information protected under the Privacy Act, which may only be disclosed consistent with applicable statutes and regulations if it is disclosed through social media at all.[16] Private records, like medical records, have their own protections.[17] Soldiers must also ensure that any statements or social media posts made protect operational security.

Finally, local or unit regulations may apply to online conduct. For example, U.S. Army Training and Doctrine Command (TRADOC) Regulation 350-36, *Basic Officer Leader Training Policies and Administration*, may impact the commander's communications based on who he or she is communicating with online.[18] Commanders

can (and should) engage with subordinates through appropriate forums such as counseling or mentoring. However, arguing on the internet with a subordinate or trainee would be ill-advised. Likewise, a commander maintaining an ongoing, casual communication exchange with a trainee, which could amount to an inappropriate relationship or the appearance of special treatment, would be ill-advised. Similarly, a trainee would be unwise if they were arguing on the internet with an official unit account releasing relevant information about operations. Each action threatens to run afoul of local regulations such as TRADOC Regulation 350-36 and generally applicable regulations such as AR 600-20 and UCMJ Article 89.

In addition to the above limitations, leaders are expected to exemplify the standards and be stewards of their profession in all behavior, including their online activity. AR 600-100, *Army Profession and Leadership Policy*, calls upon leaders to be stewards of the profession, to behave in such a way as to develop subordinates through proper example, and to apply the core competencies of leadership to all behaviors, including online behavior.[19] Further, AR 600-100 prohibits counterproductive leadership. Counterproductive leadership can extend to a leader's online behavior. Examples of counterproductive online leadership from the regulation include bullying, distorting information, poor self-control, showing little or no respect, talking down to others, or behaving erratically.[20]

When considering investigations such as the one in this article's hypothetical scenario, the commander should not assert pressure on the investigation to appease public pressure or outside concerns. Interfering with an investigation based on public pressure risks undermining the integrity, credibility, and quality of the investigation. In the long run, such actions risk undermining the results, which could harm the Army's credibility even worse than any earlier damage done by the rumor mill. If the investigation is undermined, truth and accountability may not flow from its results. When truth and accountability are not the result of investigations, it undermines the Army's broader mission objectives and long-term credibility.

While it is clear that the commander should not interfere with the investigation or otherwise behave reactively to the PA concerns, there are other responses that the commander should consider. While this section addressed general concerns universal to public affairs activity, the next sections will discuss where that response should come from and some considerations for each option.

How Should the Commander Respond to the Public Affairs Crisis?

Col. Smith wants to address the rumor mill and misinformation on the internet because it harms the unit's reputation and undermines the Army's legitimacy in the eyes of the public. Such a response, particularly when made by someone in a leadership role, such as brigade commander, should only come from official communication methods. Assuming social media is used to distribute the response, then the response would be through official social media accounts.

Commanders have a responsibility to correct erroneous information about the Army.[21] When correcting misinformation, commanders should provide official, relevant, and correct information about the Army. Department of Defense (DOD) "personnel must only use official DoD social media accounts to disseminate official information. DoD personnel are prohibited from using personal social media accounts for official purposes, including for conveying DoD information or official DoD positions."[22] While commanders can maintain personal social media accounts, those accounts should not be used to convey anything other than clearly identified personal views, and the accounts cannot be used to conduct official DOD business.[23]

Given that commanders have a responsibility to correct misinformation about the Army, and the misinformation is best corrected by conveying official policies or other information that originates with official DOD sources, responding is performing an official duty.

Even if the proper response method were not such a clearly defined issue, a brigade commander would need to consider the wisdom of responding from a personal, unofficial account. Commanders must not risk even the appearance of something expressed from an unofficial account that looks like an official DOD position that is being first expressed from an unofficial account. Given the power and authority that the hypothetical Col. Smith wields over her brigade as its commander, and how closely a military unit is associated with its leadership, is it even possible for Smith to make public remarks about her unit and have them not viewed

as her official position as the brigade commander? Because Smith cannot separate her personal persona from her role as the brigade commander, and because she has a duty to respond to misinformation through official channels, Smith's response should be handled using official Army communication channels and guided by the PAO staff.

While this hypothetical scenario is an easy answer, what about other scenarios? What if a mainstream media personality makes derogatory comments about the unit? Or a negative post is made on U.S. Army WTF! Moments? While there will not always be a one-size-fits-all solution, these scenarios have the same answer as above. If a media personality comments about the unit, and a commander corrects misinformation about the Army, this requires a response from an official account. It is important to note that anything other than purely anonymous responses will be associated with the speaker. If the speaker is a senior commander, then it is extremely difficult for any comments that touch upon the Army or their unit to be differentiated from their official position.

What about if the comments are not purely misinformation but rather an expression of a derogatory opinion about the Army? Individuals are entitled to their personal opinions. No matter how publicly the opinion is uttered, the wisdom in responding should always be considered. When the opinion includes misinformation, a narrowly tailored response can correct misinformation without getting entangled in the opinion-based arguments. Given that responding to such information is an official function, it should be clear that an unofficial response from a commander that delves into the realm of argument has no place, while argumentative behavior on an official account would be conduct unbecoming the dignity and professionalism of the unit, position, or leader who is responsible for the account. Timely, accurate information is the best and the only appropriate response in many forms of information-based operations.

Having established the role that official social media accounts must play in PA crises, this article will next turn to how to establish official social media accounts and their proper use in distributing information.

Official Communication on Social Media

As the last section highlighted, official accounts are the appropriate method of putting out official information or correcting misinformation about the Army. DOD personnel are required to use official social media accounts when performing official duties (including conveying official information or positions).[24] The Army recognizes three types of official social media accounts: organizational (e.g., U.S. Army Air Defense Artillery School's Official X [formerly Twitter] account, @u_artillery), institutional (e.g., Office of the Undersecretary of Defense for Research and Engineering's X account, @DoDCTO), and individual (e.g., Sergeant Major of the Army's official PAO Reddit account, /u/SMA-PAO).[25] As will be discussed, these accounts have specific procedures for establishing, preparing, and distributing messaging, and messaging guidance.

> When the opinion includes misinformation, a narrowly tailored response can correct misinformation without getting entangled in the opinion-based arguments.

Establishing an official account. DOD Instruction 5400.17 provides guidance on establishing official social media accounts.[26] This guidance, titled *Official Use of Social Media for Public Affairs Purposes*, includes a cost-benefit analysis of establishing such an account, the communication objectives it will accomplish, the availability of resources to manage such an account, and the PA offices that can support the effort. Commanders at the brigade level and above are encouraged to use social media as part of their communication strategy.[27]

The account managers must have received proper training and signed applicable forms (e.g., the Acceptable

Use Policy). The accounts must be registered with the DOD and U.S. Digital Registry.[28] If the account is on a new or emerging platform, the Defense Information Systems Agency must first vet the platform. The accounts cannot be previously private accounts repurposed to official ones. Although most social media account types are free, any costs must undergo the appropriate fiscal reviews. Likewise, official accounts should be managed only with official government resources.

The account must be clearly identified as an official account. It should contain a title, use official DOD logos and imaging, and provide proper contact information. All messaging that comes from the account will be official messages. These messages must be preserved as official records. These messages are subject to the same requirements as any other official form of communication. While many rules and requirements affect official communications, a few key limits will be highlighted.

Usage guidelines. Ultimately, PA is the commander's responsibility.[29] Communication from the PAO on behalf of the commander is regulated by the universal standards of conduct applicable to soldiers and leaders in particular, as previously discussed (UCMJ, expectations of professional behavior, etc.).[30] Additionally, various issuances, directives, and regulations provide further guidance, limits, and direction on using official social media accounts.

First, all messaging should be in line with the PA tenets.[31] These tenets call for information (1) to be made fully and readily available (consistent with statutory limits); (2) without censorship or propaganda; (3) not to be classified or otherwise withheld to protect the government from criticism or embarrassment; (4) to be only withheld when disclosure would adversely affect national security, threaten the safety or privacy of service members, or if otherwise statutorily authorized to be withheld; and (5) to be released with proper PA planning and coordination.[32]

Second, DOD Instruction 5400.17 offers additional guidance through its social media principles.[33] These principles call for governance, professionalism, propriety, acumen, establishment need, and transparency.

- Governance requires that official social media accounts are properly overseen, and communications from them align with proper PA objectives.
- Professionalism is the requirement that conduct on these accounts remains respectful, displaying the high standard of professional and ethical behavior expected of soldiers. Professionalism also carries the requirement not to violate other Army regulations, such as not providing official endorsements of private organizations and avoiding partisan political activity.
- Propriety requires that content is accurate, appropriate, timely, in the appropriate tone, and approved for public release.
- Acumen is the duty of PAOs to remain current in the best practices of their skillset and to use them when communicating.
- Establishment need is the requirement that official accounts and communication be limited to that which fulfills a mission requirement.
- Finally, transparency requires that official social media content not be deleted or removed unless necessary, that it is never done to stifle discussion or avoid embarrassment, and that all official communications are preserved consistent with record keeping requirements.[34]

Additionally, a unit's PAO will be expected to be familiar with the various other guidance, much of which has already been discussed, that limits or otherwise directs what information may be released and when or how it should be. This includes the various authorities to release information, general social media usage guidance, and express limitations on what information may be distributed.[35]

Strategic messaging considerations. One of the biggest advantages of having an official social media account is its established presence, providing a method of disseminating information before a PA crisis has begun. An active presence can help develop credibility before the account is needed to respond to such a crisis and will have already accrued an audience (e.g., X followers) who will receive the organization's message without laying the groundwork for communicating while the crisis is happening. The importance of maintaining credibility on an official account cannot be overstated. The credibility of an official account is an extension of the credibility of the unit to which the account belongs and the credibility of the Army as a whole.

A key advantage of an official account is that it brings together the command and the Army resources through the PAO.[36] The PAO can implement a preexisting information strategy, combined with the rapid

decision-making process, to prepare a timely response to the PA crisis. If the unit is already maintaining an active social media presence, it can be proactive in its messaging rather than reactive. Even during a crisis not specifically foreseen, media messaging does not need to be reactionary.

Another important consideration is ensuring that communication is coordinated at all levels of the chain of command. This will ensure unity of purpose and unity of effort. Unified, consistent messaging ensures that the Army maintains its credibility as an organization throughout the PA response and beyond. Inconsistent messaging can exacerbate problems and create questions or concerns where none needed to exist. Further, commanders at every echelon should be careful not to "get ahead of their boss" by distributing information that a higher echelon may have been planning to release or discuss themselves later.

Ultimately, PA missions are information operations and should be treated as such. They should be considered, planned out, and coordinated up and down the chain of command. They should reflect the commander's intent, and a course of action should be taken across warfighting functions to nest within broader operational plans and strategic goals.

What should Col. Smith do? Concerning Smith's response to the hypothetical unit's PAO crisis scenario, the PAO should be leading the effort utilizing their specialized training for this type of situation.[37] While this article does not detail what type of incident is under investigation, a proper PA response may have been to "get ahead" of foreseeable negative narratives and rumors from the outset. This could include a reassuring and informative statement that the matter is being investigated properly, and that information will be released at the appropriate time, but not in such a way that risks interfering with the investigation. If that did not happen and negative narratives have already begun to fill the gap left by the command's inactivity, the command should immediately seize the initiative and provide information where it can.

When asked questions about the investigation, an appropriate response is usually, "It is under investigation." With that said, there are ways to convey information and instill confidence in the process without harming the investigation's integrity or improperly disclosing information.[38] For example, a commander or an appointed subject-matter expert can discuss the investigative process without discussing any specific facts about the investigation. The spokesperson could describe applicable Army regulations and give detailed answers about those regulations and each step of investigations in general. The spokesperson could be somebody who is not involved with the investigation and has no knowledge of its progress, so they can only speak about the investigative process in general terms without risking improper disclosures.[39]

"When asked questions about the investigation, an appropriate response is usually, 'It is under investigation.' With that said, there are ways to convey information and instill confidence in the process without harming the investigation's integrity or improperly disclosing information."

Smith, or her senior leadership, could appoint someone familiar with regulations controlling investigations to give a briefing about the thoroughness and professionalism of investigations performed by the Army. Smith or the PAO could then follow this informational briefing to reinforce the investigation's credibility with a brief, tightly worded statement. Smith could confirm that an investigating officer was appointed and is performing the process consistent with all applicable rules and regulations. Smith may also consider a message. For example, "We appointed an investigating officer who is not being identified so he is not disturbed while he does his job. We will continue to ensure that he is performing the investigation consistent with all applicable rules and regulations." In this way, Smith can provide an informative and

credible response without violating rules about information disclosure or interfering with the investigation.[40]

Concerning the social media posts about the incident by anonymous users and private citizens, any response should avoid responding directly to sources of misinformation in such a way that devolves into argument. If information and status updates can be released without violating the various limits or interfering with the investigation, then they should be released. When the information is released, it generally should be published without acknowledging the misinformation sources to avoid bringing attention to their platform. This helps prevent speculation that further ignites rumors in the absence of credible information. The response should also consider the appropriate tone given the gravity of the situation (and the underlying incident). Especially when responding to misinformation on the internet that is likely to attract further argumentative responses, the best one can do is state their position, provide evidence, and stop responding.[41]

In addition to using official social media accounts to inform the public and address rumors regarding the PA crisis, there may be more conventional ways to address the posts by Capt. Stephens rather than directly responding on the internet (which will inevitably draw further unwanted attention to this secondary problem as well as on the primary PA crisis). Smith could directly call her counterpart in Stephens' chain of command and make them aware of the captain's questionable actions. Stephens should be counseled by his superiors on the standards of professionalism expected of all soldiers when using personal social media accounts.[42] Alternatively, the brigade judge advocate or PAO could call their counterpart in Stephens' brigade and request that they ensure their brigade's personnel are aware of social media usage guidelines.

As seen from this discussion, official social media accounts are the most appropriate—and required—method of responding to a PA crisis. Smith should be using her PAO in coordination with her brigade judge advocate and higher headquarters to coordinate a proper response to this incident. Although a personal social media account is not the proper response to this article's offered scenario, the proper usage and related guidance of such accounts will be discussed in the next section.

Personal Social Media Accounts

Soldiers generally retain their First Amendment right to engage in personal social media use. They are free to establish personal, nonofficial accounts but must do so in accordance with the other applicable statutes and regulations. Soldiers are held to the same standard of behavior and professionalism when they use personal social media to communicate.

“To avoid confusion between official and personal positions, they should include a disclaimer that the views expressed are those of the individual and do not represent official views of the Army.”

Unofficial accounts cannot have the appearance of official accounts. They should not include official military logos or symbols.[43] To avoid confusion between official and personal positions, they should include a disclaimer that the views expressed are those of the individual and do not represent official views of the Army.[44] They should not identify the account owner by their official military position. Commanders cannot release the results of investigations (and should not discuss them) on unofficial channels, release nonpublic information, or make any other official announcements. Unofficial accounts should not be maintained using government funds or resources.

The Army does not require the contents of unofficial, personal accounts to be preserved or archived. Although there is no requirement to preserve the contents of unofficial accounts, this should not be treated as a conclusion that social media activity will not be preserved. In addition to the ease of copying content on the internet by any third party (or the website hosting the content), there

are internet archives automatically gathering content for preservation constantly engaged.[45] One must assume that anything on the internet is there forever.

The generally applicable behavioral limitations described in this article apply to senior leaders in their personal social media usage.[46] Soldiers in general and senior leaders in particular are expected to display a high standard of professionalism in everything they do. This includes avoiding inappropriate or influential political messaging, protecting operational security, not releasing personal identifiable information, etc.[47] For senior leaders, this is a personal standard of conduct and extends to their duty of being shepherds of the Army. Behavior on personal social media should exemplify the same leadership values that commanders exemplify all other times.

Col. Smith should not use her personal accounts to respond to this public affairs crisis. As discussed, the facts in this article's hypothetical scenario should not be responded to by a senior leader on a personal, unofficial account. Doing so creates significant risk for the senior leader responsible for the posts and the Army in accomplishing its official messaging and informational missions.

Additionally, responding directly to Capt. Stephens' posts would be unwise. This would go well beyond the notion of an on-the-spot correction from a senior leader communicating directly to a subordinate. Further, because Stephens has already displayed a failure to maintain decorum and to understand that behavior on the internet is no different than behavior in person, a digital message from Smith to Stephens may not carry the gravity that it should from Stephens' perspective, thus undermining the corrective action.

General considerations for soldiers' use of personal social media to express personally held opinions. While this article's specific hypothetical scenario has a clear answer, this is not meant to indicate that soldiers can never express their opinions on personal social media accounts. While soldiers must ensure that the account is clearly identifiable as an unofficial account and reflects only their personal views, they generally retain their First Amendment rights to self-expression. This right also extends to the right to share publicly released, unclassified information through non-DOD forums (after it has been publicly released through official channels).[48]

In their personal capacity, a soldier could respond more candidly in expressing their views on social media on issues in general (but should be very careful about doing so regarding issues specifically affecting their unit). When communicating on social media, soldiers should never forget that even though a social media post may be directed at one recipient, it is subject to responses from the entire internet. Put another way, any argument on the internet potentially argues against everyone who chooses to respond. Especially when discussing controversial topics, arguments on the internet tend to attract uninvited participants.

While the *wisdom* of arguing on the internet may be universally in doubt, a soldier's freedom to do so with their personal contacts in their personal capacity remains, especially when such arguments extend to topics like which team is most likely to make the playoffs this season. When arguments on the internet extend beyond very innocuous topics, soldiers must exercise caution and diligence not to violate the various express requirements and general standards of professionalism that always apply. In this area, a soldier's judgment must consider whether they *may* argue on social media and whether they *should*.

In summation, soldiers are free to maintain personal, unofficial social media accounts and use them to convey personal messages. While soldiers can express themselves in their personal capacity (consistent with the various requirements in place), such actions in the age of the information revolution should be handled with care and vigilance, especially for senior leaders. Soldiers cannot leave their professionalism at the door when going online. Soldiers and senior leaders should strongly consider the wisdom of unofficial accounts and how they use them.

Conclusion

The information domain and the rise of social media are here to stay. PA is now a key feature of multidomain operations. The U.S. military recognizes this and is quickly pushing out guidance in support of these operations.[49] The Army cannot and should not cede ground in the information domain. When a senior leader observes viral misinformation about their organization or about the Army, they should consider the best way to correct the record and provide accurate, timely information. Countering misinformation is not

a casual activity and should not be treated as such. It is a military operation in the information domain and should be regarded with a big-picture, operational approach. Commanders can and should engage, but they should do so in an appropriate, nonconfrontational way in close coordination with their PA and legal advisors focusing on distributing accurate, timely information.

Leaders should be proactive in seeking out misinformation and negative narratives. One popular function of social media is that many individuals turn to it as a place to air grievances, often through anonymous means. Many leaders resent this, whether due to a traditional view that the chain of command is the appropriate method of addressing concerns or because the leaders are uncomfortable with publicly airing the unit's dirty laundry. Regardless of why soldiers turn to social media to raise complaints, leaders must accept that it is here to stay. Leaders should proactively monitor these sources of information, both as an opportunity to identify and respond to misinformation before the narrative takes hold and to become aware of legitimate problems in their area of operations.

The best possible response to a soldier airing a grievance is addressing the concern. If the grievance is erroneous then, to the extent permissible, the best response is providing accurate, timely information. A leader's simple public response of "thank you for bringing this to our attention, it will be addressed" followed by appropriate action, is one of the best remedies to a bad narrative and builds tremendous credibility in that unit's leadership when future issues arise within the ranks.

Accurately, timely, and professionally delivered information from a credible source is the best response to misinformation. Even on the rare occasion where it may be permissible that a senior leader *could* engage on their personal social media account, they must strongly consider whether they *should* do so. Often, a critical application of "Think, Type, Post" will conclude that they should not. Ultimately, the way to win arguments on the internet is … don't argue. ■

Notes

Epigraph. Field Manual (FM) 3-61, *Communication Strategy and Public Affairs Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2022), para. 1-5.

1. Ibid., para. 1-38. Misinformation is defined as "a subset of information that includes all incorrect information." This is different from disinformation, which is defined as "the deliberate use of incorrect or false information with the intention to deceive or mislead."

2. It is important to note that this scenario is distinguishable from public affairs (PA) operations as part of the Defense Support to Civil Authorities (DSCA). This article does not discuss DSCA-specific issues, though DSCA PA operations have some similarities to issues discussed in this article. For further discussion of PA support to DSCA operations, see ibid., para. 1-74–1-79.

3. Ibid., para. 5-79.

4. For example, see "U.S. Army W.T.F.! Moments," https://www.facebook.com/usawtfm/. U.S. Army WTF! Moments is a social media organization with a presence on multiple social media domains that allows individuals to post anonymous complaints, allegations, memes, and other announcements of potential interest about the Army or specific Army units.

5. Fort Hood Independent Review Committee, *Report of the Fort Hood Independent Review Committee* (Washington, DC: U.S. Department of Defense [DOD], 6 November 2020), https://www.army.mil/e2/downloads/rv7/forthoodreview/2020-12-03_FHIRC_report_redacted.pdf.

6. Ibid.

7. Ibid., 132.

8. "U.S. Army Social Media Guide," Army.mil, accessed 12 December 2023, https://www.army.mil/socialmedia/. See also "Office of the Chief of Public Affairs," accessed 12 December 2023, https://armyeitaas.sharepoint-mil.us/sites/HQDA-CPA/. This official SharePoint site contains relevant information for PA operations, including the 2023 Army communications plan, updated guidance, and officially approved information and templates for PA operations.

9. Matt Berg, "Army Secretary Urges Soldiers to 'Stand Up for Women' amid Carlson Controversy," Politico, 14 October 2022, https://www.politico.com/news/2022/10/14/army-secretary-urges-members-to-stand-up-for-women-00061884.

10. FM 3-61, *Communication Strategy and Public Affairs Operations*, para. 5-79–5-91. FM 3-61 describes the process as akin to the military decision-making process.

11. Ibid., para. 1-20, 6-6.

12. See, for example, ALARACT 058/2018, "Professionalization of Online Conduct," 25 July 2018, para. 5.B, https://www.army.mil/e2/downloads/rv7/socialmedia/ALARACT_058_2018_PROFESSIONALIZATION_OF_ONLINE_CONDUCT.pdf.

13. UCMJ art. 89 (2019). Article 89's explanatory paragraph (c)(2)(c) discourages use of Article 89 to punish statements made in "purely private conversations." See also Army Regulation (AR) 25-13, *Army Telecommunications and Unified Capabilities* (Washington, DC: U.S. GPO, 2017), para. 3-2(a). This states that unauthorized use or abuse of DOD technology and web services may subject users to administrative, criminal, or other adverse action.

14. UCMJ art. 134 (2019).

15. AR 600-20, *Army Command Policy* (Washington, DC: U.S. GPO, 2020), para. 4-19(a)(5).

16. 5 U.S.C. § 552a (1974).

17. 42 U.S.C. § 1320d-6 (2009).

18. U.S. Army Training and Doctrine Command (TRADOC) Regulation 350-36, *Basic Officer Leader Training Policies and Administration* (Fort Eustis, VA: TRADOC, 2020). This places limits on interactions and relationships between cadre or unit leaders with soldiers in training status.

19. AR 600-100, *Army Profession and Leadership Policy* (Washington, DC: U.S. GPO, 2017), para. 1-9(a), 1-11(b)–(d).

20. Ibid., para. 1-11(d).

21. AR 360-1, *The Army Public Affairs Program* (Washington, DC: U.S. GPO, 2020), para. 2-4(a)(7).

22. DOD Instruction (DODI) 5400.17, *Official Use of Social Media for Public Affairs Purposes* (Washington, DC: U.S. DOD, 2022), para. 6.1(d).

23. Ibid., para. 8.

24. ALARACT 073/2022, "Army Social Media Policy," 27 October 2022, para. 3.B.2.

25. DODI 5400.17, *Official Use of Social Media*, para. 6.2.

26. Ibid., para. 4.1.

27. AR 360-1, *Army Public Affairs Program*, para. 8-1(e).

28. See DODI 5400.17, *Official Use of Social Media*, para. 4.1(b), for more information on registering official accounts.

29. FM 3-61, *Communication Strategy and Public Affairs Operations*, para. 1-12.

30. For further discussion, see DODI 5400.17, *Official Use of Social Media*, para. 6.1.

31. DODI 5122.05, *Assistant to the Secretary of Defense for Public Affairs (ATSD[PA])* (Washington, DC: U.S. DOD, 7 August 2017), para. 5.1, cited in FM 3-61, *Communication Strategy and Public Affairs Operations*, para. 1-42.

32. Ibid.

33. DODI 5400.17, *Official Use of Social Media*, para. 3.2.

34. Ibid., para. 3.2(a)–(e).

35. FM 3-61, *Communication Strategy and Public Affairs Operations*, para. 7-6, 8-1, 8-3.

36. Ibid., para. 1-34.

37. Ibid., para. A-37–A-55. This section discusses tactics for countering social media and online misinformation and disinformation.

38. For further discussion about crisis communication, see ibid., para. 5-79–5-91.

39. Jason Welch (public affairs deputy, U.S. Army Central Command), in discussion with the author, 3 May 2023. The response strategy was based on this discussion.

40. For additional discussion about PA considerations specific to criminal investigations, see Shaun B. Lister and Joseph A. Morman, "Advising Commanders During High-Profile Investigations: Balancing the Rights of the Victim and the Accused in the Age of Social Media," *Army Lawyer*, no. 3 (2022): 54–69, https://tjaglcs.army.mil/tal/advising-commanders-during-high-profile-investigations.

41. Welch, discussion.

42. "DoD personnel who are acting in a private capacity have the First Amendment right to further release or share publicly released unclassified information through non-DoD forums or social media provided that no laws or regulations are violated. DoD personnel will not post comments or material that denigrates another military or civilian member of the DoD team." DODI 8170.01, *Online Information Management and Electronic Messaging* (Washington, DC: U.S. DOD, 2 January 2019, incorporating change 24 August 2021), para. 3.26(g).

43. DODI 5400.17, *Official Use of Social Media*, para. 8(a)(1).

44. Ibid., para. 3.1(c), 8(a)(1).

45. See "The Internet Archive's Wayback Machine," https://web.archive.org. The Wayback Machine boasts having archived over 805 billion webpages from various past dates, many of which are original versions of webpages that have since been edited or deleted from the original webhost.

46. For further discussion of general behavioral guidance on social media, see "Social Media Usage Guidelines of Universal Application" section of this article.

47. AR 360-1, *Army Public Affairs Program*, para. 8-6.

48. DODI 8170.01, *Online Information Management and Electronic Messaging*, para. 3.26(g).

49. See, for example, Joint Publication 3-61, *Public Affairs* (Washington, DC: U.S. GPO, 17 November 2015, incorporating change 19 August 2016); see also the "U.S. Army Social Media Guide" at https://www.army.mil/socialmedia/ for further discussion on guidance released in support of PA operations.

Naval Postgraduate School students participate in analytic wargames they designed to explore solutions for some of the Department of Defense's most pressing national security concerns 3 June 2018 in Monterey, California. (Photo by Javier Chagoya, Naval Postgraduate School)

Deliberate Practice and the Acquisition of Military Expertise

Lt. Col. Sebastian K. Welsh, MD, U.S. Army

The study of history by military officers has been an oft-defended but difficult-to-justify part of professional military education (PME). Research on cultivating expertise provides evidence that studying military history offers a method for achieving expert military performance, particularly at war's operational and strategic levels. Following America's recent military misadventures in Iraq and

Afghanistan, the question arises yet again. Why does such a technically and tactically adept force continue to lose wars?[1] In the wake of Vietnam, Peter Paret and Colin Gray found a lack of strategic expertise as an answer.[2] The world continues to face an increasingly complex strategic environment with the return of war to the European continent, great-power competition, and Chinese "unrestricted warfare."[3] The current approach to PME and training in the U.S. military generates an asymmetry in favor of tactical and technical expertise while failing to cultivate strategic expertise. This asymmetry primes current and future senior military leaders to excel at the tactical level of warfare while failing at the operational and strategic levels.

A definition of expertise is necessary to evaluate the usefulness of studying military history. Once expertise is defined, a discussion of various methods of obtaining expertise follows. American PME and training, historically and currently, create adequate tactical and technical expertise while failing to generate strategic experts. However, modern research on acquiring professional expertise shows that the deliberate practice of history and theory can help generate the proficiency necessary to execute successful military operations. Historical study is also low-cost and has no risk of injury compared to other military training methods. A career-long practice of critical analysis and writing can generate the hours of practice necessary to reach expert-level performance. Deliberate practice in studying history and theory is essential for developing world-class military experts in operational planning and strategy.

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Defining Expertise

A clear definition is required to understand the value of military expertise in military operations. In *On War*, Carl von Clausewitz describes the makings of military "genius."[4] He includes intellect, the strength of mind, and quick recognition of the truth. His description of the coup d'oeil of a military genius presages a current understanding of expertise; however, Clausewitz, with an understanding appropriate to his time, believed these were inherited traits.[5] He also includes several attributes, markers, and behaviors that were not elements of expert performance, such as the strength of character and physical courage.[6] The intellectual gifts of Clausewitz's military genius are better known today as expertise. Still, as Clausewitz defined it, the term military genius is too vague and covers additional characteristics that make it a broader definition than required for military expertise.

Malcolm Gladwell popularized professional expertise and expert performance in his book *Outliers*. He defined experts as those who have practiced a skill to an extreme degree or the "10,000-hour rule."[7] Using other literature on expertise, he determined that time applied to a craft defines expertise. Although it is undeniable that practice is part of creating an expert, practice time alone is not the definition of expertise. The definition of expert performance used in the literature varies depending on the domain under investigation.[8] Researchers distinguish expert and nonexpert performance based on a subject's speed, accuracy, and reproducibility while completing a task.[9] Sight-reading a piece of music or solving chess puzzles are examples of functions an expert can do more quickly and accurately than a nonexpert. In military expertise, this begins to look like Clausewitz's coup d'oeil.

Army Field Manual 6-22, *Developing Leaders*, defines expertise as "the specialized knowledge and skills developed from experience, training, and education."[10] This definition approaches military expertise in terms of the domain of knowledge. It states that expertise has only one component: possessing facts or understanding. With this definition, soldiers obtain expertise primarily by reading and regurgitating doctrine. The definition does not include a level of performance. The resulting expert would be nonfunctional outside a narrow set of predefined parameters. For example, a person may know a surgical procedure from reading a surgical text. Still, they could only be called an expert with practice, judgment, high proficiency in surgical skills, and repeatable

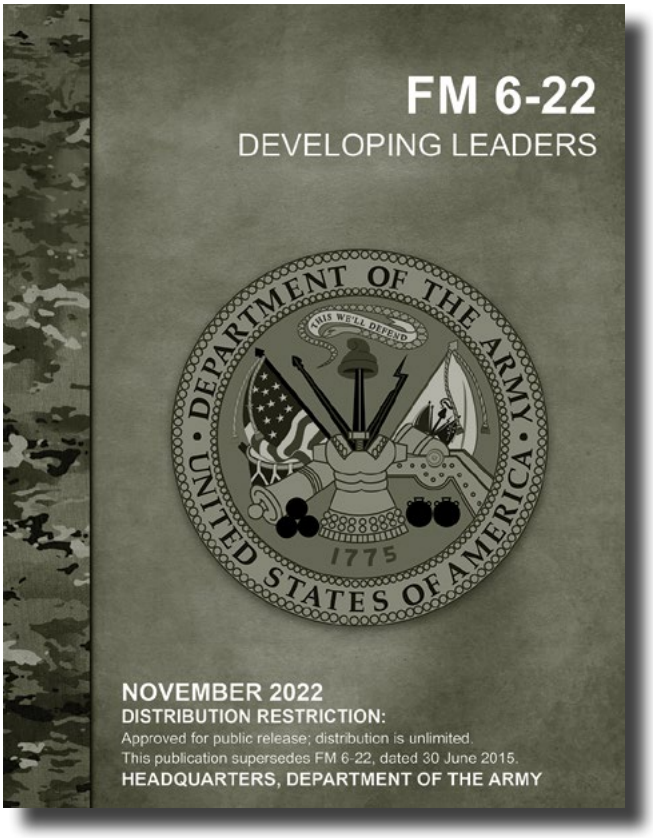
exemplary performance. A combination of these definitions should result in a helpful definition to understand military expertise and investigate its attainment.

In this context, *military expertise means mastery of knowledge and skills necessary to perform military tasks at an exceedingly high level.* This definition allows an analysis of military tasks beyond tactics and battle drills that are already rigorously trained. Military functions at all levels of warfare, including operational and strategic, are implicit in the definition. A degree of proficiency delineates simply possessing a nascent skill or modicum of knowledge from an expert; for example, an introductory history course does not make a person a military history expert. A specific definition of military expertise now allows for investigating expertise acquisition methods.

Types of Practice

Deliberate practice. Anders Ericsson delineates various types of practice to understand their application in different professional domains. Deliberate practice is the practice designed by a teacher for a pupil.[11] The pupil practices and receives feedback and correction from the teacher in real time. Studies on this form of practice generated Gladwell's ten thousand-hour rule. Researchers studied musicians to determine how world-class expert performers trained to achieve that status.[12] A critical point in deliberate practice is that the pupil practices with the intention of improving a skill. The teacher designs the practice for that student and corrects errors in real-time. The following is an example of deliberate practice in military history. A history teacher picks a case study appropriate to the student and articulates the case study's goals. The student would analyze the case study and generate a written product as directed by the teacher. The teacher would then make suggestions and corrections for the student to improve understanding, analysis, and written products as the pupil practices. The relationship between Gerhard von Scharnhorst and Clausewitz gives an excellent example of a teacher-pupil dynamic that created a preeminent expert through deliberate practice.[13]

Purposeful practice. Purposeful practice is a solitary practice where an individual focuses on a particular performance aspect with intermittent or no feedback from a coach or teacher.[14] Like deliberate practice, purposeful practice requires the intention of the individual to improve some part of their performance. Two key differences are the need for more outside guidance on the form of practice and the lack of feedback from a coach or teacher. Purposeful practice in conjunction with deliberate practice may increase reliable, superior performance. Still, the correlation is far less clear than with deliberate practice.[15] An example of a military expert utilizing purposeful practice would be selecting and evaluating historical case studies without assistance in the selection and without feedback. The Army places most professional development into this category as self-development.[16]



Field Manual 6-22, *Developing Leaders*, can be found online at https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN36735-FM_6-22-000-WEB-1.pdf.

Structured practice. Structured practice reflects the current approach to historical study at Command and General Staff College. Structured practice is a practice activity guided by a teacher for a group of students in group activities without individualization or tailoring for each member's specific skill level.[17] Structured practice allows for the training of a large group of people. The variation in pupils' capabilities will result in challenges for some, while others benefit less. The instructor also delivers less specific feedback less frequently than in deliberate practice.

Naïve practice. Naïve practice is performing, as in work or play, for goals other than developing a skill.[18] Naïve practice is essentially the on-the-job training that many soldiers receive. Although these activities are domain related, studies showed that this practice does not reliably lead to expert performance.[19] Beyond PME, training and education in the U.S. Army frequently fall under naïve practice. Historical study or reading for fun would be classified as naïve practice as the goal is for enjoyment, not increasing a particular skill or domain-specific knowledge.

> The deliberate study of military history and theory can help generate the expertise necessary to execute successful military operations by improving the understanding of war's operational and strategic levels.

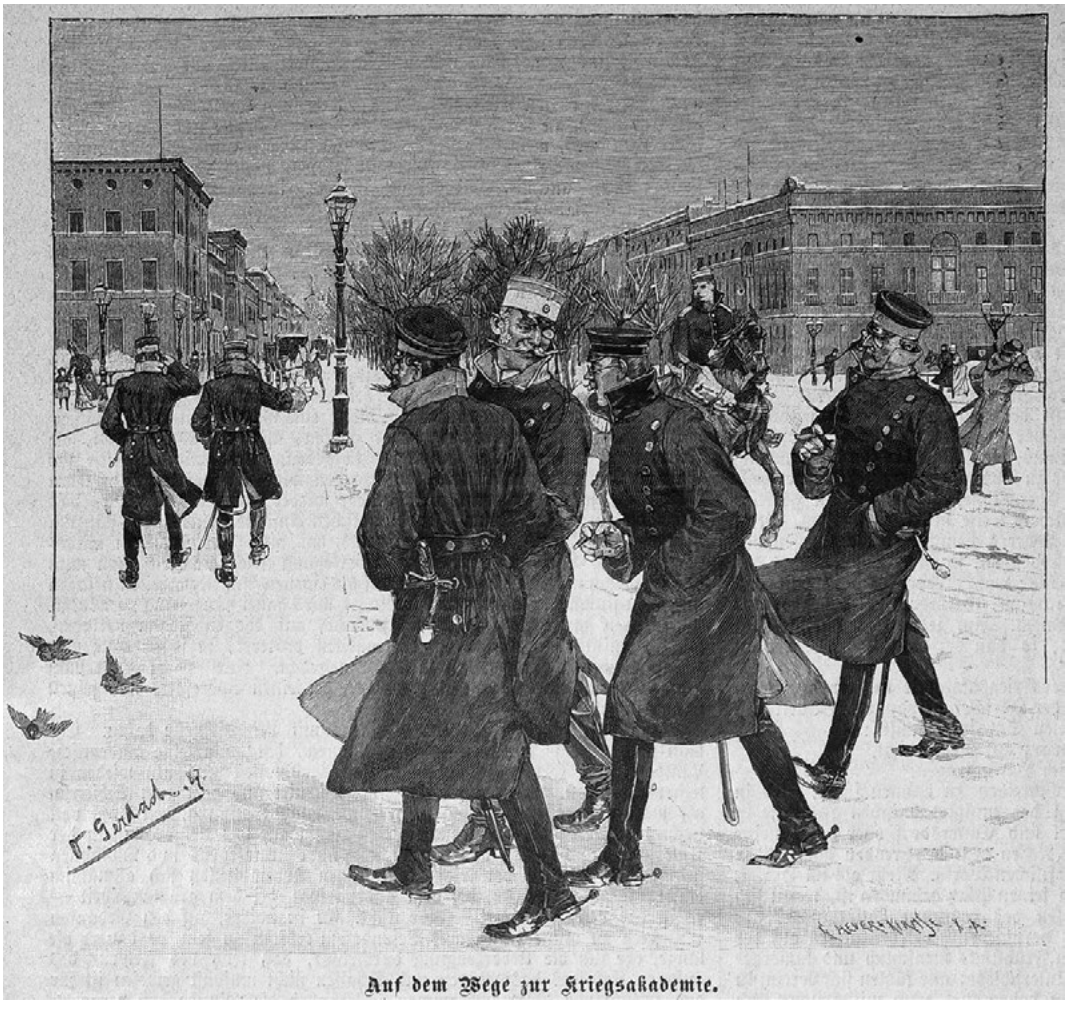
In the meta-analysis conducted by Ericsson, deliberate practice, purposeful practice, and structured practice are combined when estimating hours of practice, so for the remainder of this article, deliberate practice will mean any of these three activities.[20] The researchers do not include naïve practice as the primary focus is not improving the skill.

Deliberate practice in sufficient quantity has created world-class expertise in diverse fields of complex behavioral performance.[21] Therefore, the deliberate study of military history and theory can help generate the expertise necessary to execute successful military operations by improving the understanding of war's operational and strategic levels. The amount of practice for expert performance remains immense at thousands of hours, depending on the domain.[22] Even when conducted regularly, deliberate practice takes years of effort to achieve expertise. Most experts started deliberate practice in childhood or early adulthood. Professional violinists began between ages four and six, accumulating ten thousand hours of deliberate practice by around age twenty.[23] Earlier starting age correlated with higher rates of attaining elite performance in multiple domains, including sports, chess, and music.[24]

Officer Training and Education

Practice in the military occupation begins with initial training and is periodic throughout a career in PME. Most training and education during the first half of a military career focuses on technical and tactical expertise.[25] Military history as a form of practice does not begin until officers have practiced their craft for ten years or more. Strategic studies do not start in earnest until students attend the U.S. Army War College. The average age of a U.S. Army War College student is forty-five years old for the class of 2023.[26] With diligent practice, these officers will achieve expert status at roughly sixty years old, assuming expertise acquisition occurs at the same rate in middle age as in childhood and adolescence (likely a flawed assumption). The late start in the deliberate study of history leads to a rapid learning curve that many officers will be unable to overcome for the remainder of their careers. The result is an officer corps that meets standards but rarely reaches reproducible expert performance in the domains that historical study benefits most-operational and strategic thinking.

Previous models of officer education recognized the benefits of studying history even without modern research on acquiring expertise. Scharnhorst refounded the *Kriegsakademie* (War Academy) to select and train highly skilled officers to complete the three-year curriculum to become the Prussian General Staff.[27] This training generated expertise that paid reliable dividends throughout the nineteenth and early twentieth centuries. The Kriegsakademie, from its founding, incorporated historical studies, although not until 1826 did it incorporate many of Clausewitz's suggestions for the curriculum to focus less on mathematics.[28] The curriculum included six to seven hours of military and nonmilitary history a week, which over a three-year course of study, amounts to approximately one thousand hours.[29] Not only is this a sizeable down payment of hours toward acquiring military expertise, but the course design also generated analysis in contrast to the U.S. Army's equivalent school.



Auf dem Wege zur Kriegsakademie (On the way to the War Academy), illustration by Otto Gerlach; originally published in an 1889 issue of *Die Gartenlaube* (The Garden Arbor). (Photo courtesy of Wikimedia Commons)

Contrasting the U.S. Army's Command and General Staff School (CGSS) and the Kriegsakademie of the interwar period highlights the importance of cultivating expertise through deliberate practice. CGSS at the time consisted of a majority map and maneuver exercise with little room for student creativity or analysis.[30] CGSS developed officers ready to manage a division but did not result in military expertise. Meanwhile, the Kriegsakademie presented challenging problems for individuals and small groups with direct feedback from instructors.[31] These practitioners of the deliberate study of history made possible Gen. Hans von Seeckt's fifty-seven committees and the diligent studies they created.[32] Historical examples, mainly from the Prussian-German experience, show the benefits of historical analysis even in resource-constrained environments, such as existed under the Treaties of Tilsit and the Treaty of Versailles.

The U.S. Army also faces a resource-constrained environment in terms of funding, training time, and acceptable risk to forces in garrison. The most recent Field Manual 3-0, *Operations*, emphasizes the "human advantage" across the competition continuum.[33] In preparation for large-scale combat operations, the U.S. Army has focused significant resources toward creating this human advantage at combat training centers (CTCs) for brigade-sized elements and Warfighter exercises to simulate division up to corps maneuvers.[34] Focusing on tactical echelons up to the lower operational level of warfare shows priorities to maintain technical and tactical expertise. A continued focus throughout officers' careers on technical and tactical expertise leaves a woefully short time for senior leaders to cultivate operational and strategic competence. Historical study, in comparison to CTC and Warfighter exercises, is an inexpensive endeavor. History funding for the Army is less than a twentieth of the annual budget for CTC rotations.[35] Historical analysis also does not have the risk inherent in military training or combat operations.[36] Even Clausewitz suffered a bayonet wound to the head.[37] Additional guided hours in deliberate practice of history and theory can generate military expertise without decreasing the Army's

ability to fund the fight. It will allow students to stand on thousands of battlefields and consider limitless strategic implications with little cost and no risk of injury. These operational and strategic lessons can mitigate the lack of strategic expertise in the Army.

A model for deliberate military history and theory practice should focus on critical components of reading, critical analysis, thesis formation, and written argument. Practicing history this way develops several essential skills that find little practice outside the humanities. One of the initial skills is reading critically to determine the value of sources with conflicting opinions.[38] A strategist must compare various sources and forms of intelligence, media, and political writings when considering ends, ways, and means. Critical analysis is necessary as many of these sources will have conflicting arguments or directly contradict each other. Historians compare, contrast, and weigh arguments from primary and secondary sources as a matter of course utilizing these arguments to generate a thesis.

Forming a thesis and defending it in writing exercises multiple high-level skills. Historical writing specifically requires inductive reasoning and a holistic view that is often lost in scientific writing. Utilizing this form of reasoning can help to counteract the asymmetry generated by a focus on deductive reasoning. Advanced writing utilizes logic and working memory beyond the superficial use in basic writing forms.[39] Generating essential context in studying historical cases and underlying principles is essential to understanding how military operations fit in the larger geopolitical picture. No simulator or training center exists that can create the fidelity and degree of complexity of actual events. By practicing archival research, considering multiple sources, and writing, practitioners gain myriad benefits in critical thinking and problem-solving, including the decreased likelihood of holding unwarranted beliefs (e.g., false assumptions).[40] With a model of deliberate practice outlined, a method of application throughout a military career will generate adequate hours of practice to obtain expertise.

Any program for cultivation of expertise would have to be voluntary. The requisite hours to achieve expertise far exceed the expectations and available hours for training in PME. Deliberate practice throughout a military career would begin with basic writing and logic instruction at initial training utilizing historical case studies as a foundation. The initial basic instruction is necessary because many high school and undergraduate programs do not achieve a basic level of writing proficiency.[41] The initial training could begin at any point but would be of most benefit earlier in a career. Those officers and noncommissioned officers who complete initial instruction, intermittent seminars, and written assignments focused on long-term growth in the key skills of reading, analysis, thesis formation, and written argument would be assigned through an apprenticeship-style program with a historian guiding their progress. Through years of practice, lifelong learners would generate a portfolio of their work at multiple levels of warfare. The preparation would create capable writers who could easily exceed the written requirements of field grade and senior-level PME. Currently, the Command and General Staff Officer College has a history writing requirement of at most fifteen pages.[42] The critical component in deliberate practice is its ongoing and progressive nature. PME currently occurs with years of skill atrophy followed by brief use in the educational setting before further atrophy until the next iteration. On-the-job use, or, as defined earlier, naïve practice, does not generate the progressive learning and development required for true expertise. Naïve practice does not have the feedback and focus on progression that deliberate practice, by definition, has. The career-long learning and practice of history and strategy could cultivate reading, critical analysis, thesis formation, and written argument, skills critical to strategic thought.

Literature does not exist showing that historical study improves strategic thought, per se. However, numerous military theorists upon whose work current U.S. military doctrine rest generated their ideas through historical study and inductive reasoning. B. H. Liddell Hart, in *Strategy*, summarizes his theories on strategy after a thorough discussion of the historical cases that generated his conclusions.[43] Alfred T. Mahan and Sir Julian Corbett generated modern naval power theories from extensive historical study.[44] The study of history is insufficient to create profound strategic thinkers, but it is necessary to grasp the concepts, taxonomies, and lexicon employed. Training and education currently focus on the consumption of doctrine and its application without the underlying context of how this doctrine came into existence and the larger background of the world in which it is to be applied.

The characteristics of firepower focus, dependence on technology, and logistical excellence outlined by Colin Gray in "The American Way of War" require technical and tactical expertise.[45] The focus on these characteristics minimizes strategy and history, creating, as Gray describes it, a "strategy deficit."[46] For this same reason, in *Makers of Modern Strategy*, Peter Paret, Gordon Alexander Craig, and Felix Gilbert argue that studying history and the narrative thread present in strategy is essential for understanding war.[47] Current PME in the U.S. Army has shown no improvement from the interwar period and may have worsened regarding the deliberate practice of military history and theory.[48] Command and General Staff Officer College dedicates fifty hours of classroom time.[49] In 1992, Congressman Ike Skelton noted the minimal focus on studying history to develop strategic expertise, which amounted to fifty-one hours in 1988.[50] Time dedicated to studying history and historical analysis does not meet the thousands of hours of practice documented in recent research on expertise acquisition. Numerous training opportunities occur to practice battle drills and tactics; however, no rotations exist at CTCs for the deliberate practice of understanding history and theory. The deliberate practice of historical study, beginning at initial training, would allow for thousands of hours of practice during a career. Expertise acquisition would occur earlier in an officer's career and enhance understanding of the strategic environment.

With the current understanding of expertise acquisition, the problem and solution become readily apparent. If years of practice and thousands of hours of deliberate practice are required to achieve military expertise, then the U.S. Army cannot reliably create military experts. The result is a tactically excellent army without strategic expertise. This asymmetry in training to education worsens throughout a military career with the expectation that in a few years, with occasional PME opportunities, senior leaders can make up the deficit and become experts in fields they have not previously practiced. The study of military history and theory provides a process for the deliberate practice of essential skills at the operational and strategic levels creating military expertise. Clausewitz describes the study of military history as "an active ingredient of talent."[51] The current method of training military expertise in the U.S. Army lacks this critical ingredient. ■

The views expressed in this manuscript are those of the author and do not necessarily reflect the official policy of the U.S. Army, Department of Defense, or the U.S. government.

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Army University Press

Apparitions of the Mind

By Joshua R. Ingram

Have you ever shot anybody? What's it like to take someone's life?
It's like barely sleeping, trapped in an endless, waking dream.
Or is it a nightmare? I descend into darkness and picture their faces.
I close my eyes and see theirs staring back as they release their last breath.
I profess countless repentant words but none can remove the stains on my soul.
I wake to screaming, surprised to discover it's me. I wait for death to collect my debt.

If you live by the sword, you die by the sword. That must mean my debt
is to suffer through existence until my light is snuffed away. *An eye for an eye, a life for a life.*
The consequence of my actions brought to fruition. A *hero* pays the toll with every breath.
I am told that I twitch and kick in my sleep. I rant and rave as I dream
but remember nothing. I feel like a hollow puppet strung along, void of soul.
As I walk through halls, passing strangers by, I fasten a false smile onto my face.

Most people won't know what it's like—to see light fade from eyes as blood drains from faces.
A burden carried in the pit of my stomach and depths of my being. By contract, I am indebted
to those that fight beside me and the country I serve, but neither may have my soul.
This is the state of my existence. An endless waltz with destruction has become my life.
Maybe tonight will be different and I will lose myself in the beautiful mindscape of a dream.
It's a nice thought…as I ready for bed, I crawl into the blanket with hopeful breath

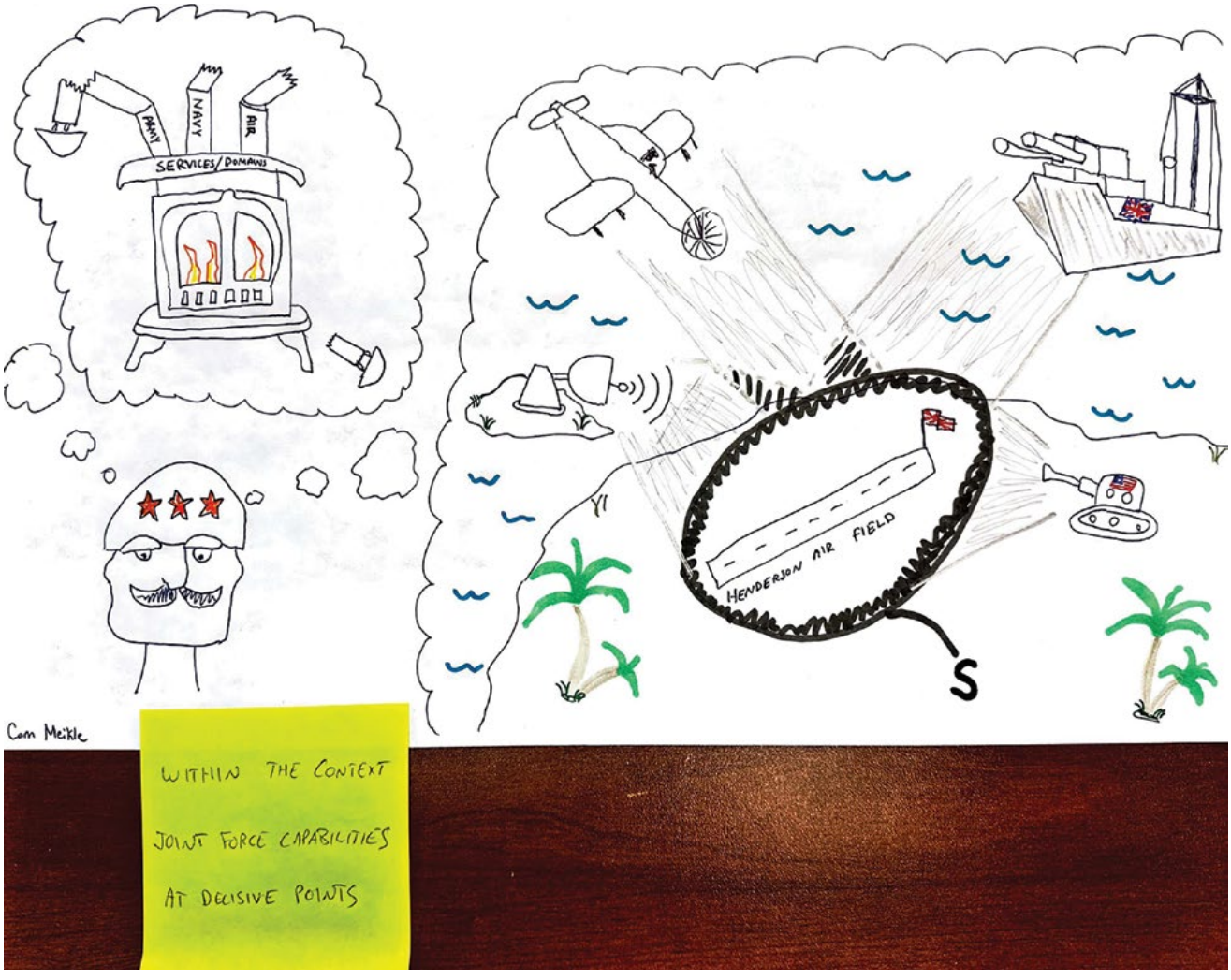
that a different outcome will occur this time. I silently watch my wife breathe
as she falls asleep. We drift away together and, for a moment, worry leaves my face
while I watch the rise and fall of her chest and feel warmth spread through me. A dream
like this is real and not crafted by my mind. The one where I am loved without debt
and cared for by someone so kind. My ice-encased heart melts as I see purpose to my life:
to return that love to my family. This is the path to regaining my soul.

The scars and scrapes may never fade, but, with gradual gestures of love, my soul
can be remade. Slow and steady, I take one step at a time. With each breath,
I make strides to atone, though my transgressions were no crime. Life
is what you craft it to be, but before I can affect the world, I must start with me. I watch the face
of the clock, as seconds tick by, and I tell myself, all I have to do is try. My debt
is not one that is so dark and grim. It shatters the schema and resurrects my dreams.

So you may ask again, *what's it like to take a life*, and I will say, *It's like a bad dream*
that I can finally put away. My hands may not be clean, but the iniquities left my soul.
Now I live my days feeling a little more whole. Memories may haunt me, but my debt
has been paid. Moving forward, I make efforts to be better with each breath.
The lump in my throat, I no longer hold back. I release tears down my weary face.
My existence is not a punishment for my deeds. It is a beautiful life,

a life filled with dreams. Ones I can face without the screams.
I know in my soul, my debt has been paid, and with each
breath, I am stronger and no longer afraid.

Soldiers with Company C, 1st Battalion, 8th Cavalry Regiment, cover the body of a dead insurgent 16 September 2004 in Baghdad. The insurgents were preparing to fire a mortar at Forward Operating Base Falcon when one of their rounds exploded in the tube. (Photo by Bill Putnam, ZUMA Wire/Alamy Live News)



During a School of Advanced Military Studies (SAMS) class exercise held 24 February 2023 at Fort Leavenworth, Kansas, student teams were asked to draw a succinct cartoon representation of principles related to planning and execution of the World War II Solomon Islands campaign. They were to develop an accompanying haiku that distilled major concepts that shaped joint force synchronization and domain convergence contributing to U.S. victory. The accompanying haiku appears as a sticky note on the bottom left of the drawing in the above image. It reads, "Within the Context; Joint Force Capabilities; At Decisive Points." (Photo by Michael Lopez, *Military Review*)

Haiku in the Classroom

Using Poetry to Educate Future Staff Officers

Anthony E. "Tony" Carlson, PhD
Allyson McNitt, PhD

SAMS students Maj. David Clouse (*left foreground*), Maj. Josh Schatzman, and Maj. David Labadorf compare their sketches of U.S. multidomain operations in the Solomon Islands campaign in a SAMS exercise held 24 February 2023 at Fort Leavenworth, Kansas. The sketches incorporated haiku to synthesize analysis of effectiveness in campaign planning. (Photo by Michael Lopez, *Military Review*)

During the 2023 school year, School of Advanced Military Studies (SAMS) instructors at the U.S. Army's Command and General Staff College employed a novel adult-learning teaching technique that used Japanese haiku poetry for the purpose of stimulating intellectual creativity among students in the analysis and remediation of issues that emerge as a part of military campaign planning. Established in 1983, the Advanced Military Studies Program, a program within SAMS at Fort Leavenworth, Kansas, provides a second year of intensive, graduate-level education for selected graduates of the Command and General Staff College. Upon graduation, SAMS graduates spend a year as key planners at the division, corps, or Army Service component command levels. Consequently, SAMS instructors are constantly exploring new adult learning techniques to promote creativity in problem-solving, innovative thinking, and enlarged perspectives to help students prepare for their future roles as staff planners. One of those techniques involved pairing visual modeling with the conventions of Japanese poetry to train students to simplify and communicate complex ideas, a key component of helping generate commander's intent.

Haiku at SAMS

The centerpiece of this adult learning technique was the use of haiku, a traditional Japanese poetic form characterized by its brevity in the selection of words specifically intended to capture the essence of meaning in carefully crafted compact written expressions.[1] Student-written haiku was incorporated into classroom practical exercises during the spring of 2023 that examined selected military campaigns, multidomain operational concepts, and other topics that could be subjected to analysis using visual models and tight poetic constructions. One of the goals of this exercise was to condition students to communicate simply and effectively in a way that reduced complexity.

During one week in the 2023 spring academic semester, SAMS students in Team 4 spent three days studying and analyzing the World War II Solomon Islands campaign in the South Pacific. Historically, following the decisive U.S. sea battles of the Coral Sea (7–8 May 1942) and Midway (4–7 June 1942) against Imperial Japanese armed forces, the U.S. Armed Forces executed a successful multidomain campaign involving an incremental series of amphibious landings, beginning with the seizure of Guadalcanal in August 1942 and culminating six months later in the fall of Rabaul on the island of Papua New Guinea.[2]

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Allyson McNitt, PhD, is an editor for Army University Press. She received her BA in English and creative writing from the University of Kansas, her MA in English from Emporia State University, and her PhD in medieval studies (British and French literature, history, and gender studies) from the University of Oklahoma.

School of Advanced Military Studies students used sketching materials to rapidly formulate a concept in picture form during analysis of the World War II Solomon Islands campaign on 24 February 2023 at Fort Leavenworth, Kansas. (Photo by Michael Lopez, *Military Review*)

The block of instruction, which evaluated the campaign's multidomain tenets, "clearly demonstrated what was possible when forces in the air, ground, and naval domains could mass fires and effects in their own and other domains."[3]

The Solomon Islands campaign, one of the curriculum's paramount historical case studies, demonstrated how commanders across the joint force can employ the concept of *convergence* to synchronize the cross-domain activities of joint forces to achieve campaign objectives. (Not coincidentally, the case study's examination of convergence paralleled the Army's October 2022 publication of Field Manual 3-0, *Operations*, which defined convergence as it relates to multidomain operations.)[4]

To reinforce the historical application of convergence and meet the lesson's enabling learning objectives, the last hour of the day was reserved for an in-class practical exercise. As part of the exercise, each student was directed to spend twenty minutes crudely sketching out an illustrative image using colored pencils, crayons, or dry-erase markers that synthesized what each viewed as the key elements of American multidomain operations in the Solomon Islands on either a piece of paper or a whiteboard. After completing the initial task, students were assigned to spend fifteen minutes studying one of their peers' visual models, then each was asked to write a haiku that conveyed the meaning of their classmates' visualization in poetic shorthand but leaving it up to the reader to interpret his or her own meaning in the poems.

A haiku consists of seventeen syllables, arranged in a three-line 5-7-5 pattern with a "cutting word" that acts as a punctuation mark dividing the poem into two sections.[5] In asking the students to describe their classmates' visual models in haiku, the poems were written in a highly abbreviated form of poetry that compelled students to use the poetic construction to both convey meaning and serve as a distilled peer evaluation for how clearly and unobtrusively the students communicated complex concepts vis-à-vis visual forms. Once the time elapsed, the students briefed one another on how well their classmates visually represented their conceptions of multidomain operations and how skillfully the poetry conveyed the student analyses.

Student feedback for the practical exercise was overall positive and sometimes effusively positive. U.S. Marine Maj. Joshua Chambers, for instance, offered the following critique: "I thought incorporating haiku into practical exercises was an effective way to build creativity and interdisciplinary thought. The exercise helped students conceptualize and communicate in new and creative ways." He continued, "The haiku exercise also was a perfect opportunity to demonstrate how the intended message may or may not always be the message received. The more successful students were the ones who could better visualize other students' perspective and attempted to communicate from their point of view. In other words, apply strategic empathy."[6]

Reasoning Behind Using Haiku

The haiku style of poetry is an especially adaptable tool for educational and training purposes. As a result, using haiku for instruction is a widely used technique that has been adapted to a broad variety of students of all ages who learn how to write haiku as a creative means for "therapeutic engagement, for facilitating reflective learning and teaching, and for fostering empathy and transformation in education."[7]

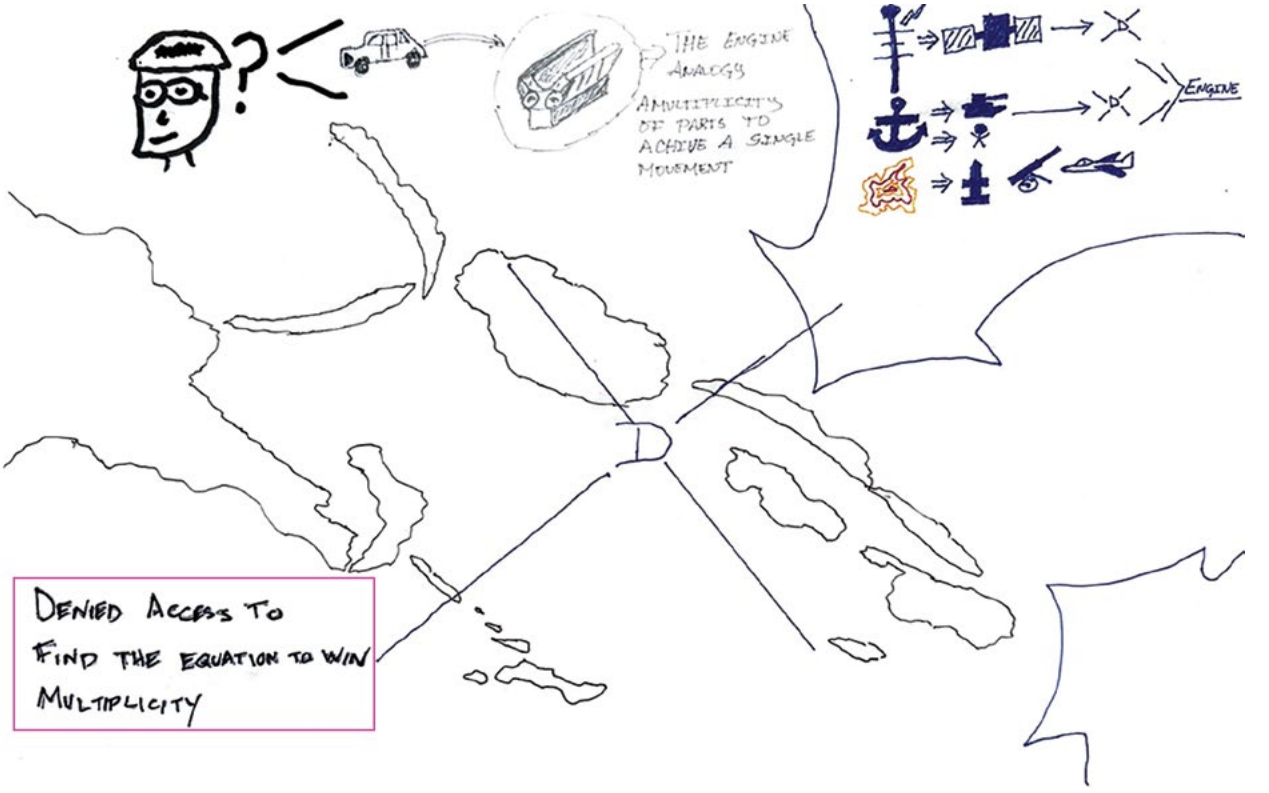
During a SAMS exercise on 24 February 2023 at Fort Leavenworth, Kansas, Air Force Lt. Col. Zach Minner uses creative sketches and haiku developed by a class team to brief how the U.S. military achieved domain convergence in the Solomon Islands during World War II. Marine Maj. Josh Chambers records notes and observations of class reaction to the briefing. (Photo by Michael Lopez, *Military Review*)

Moreover, while Japanese haikus are traditionally written in the present tense on nature subjects, the haiku poetry convention has proven an adaptable tool for focusing intellectual consideration of various topics. The poems are intentionally short, do not need to rhyme, and are applicable to rumination on almost any topic in a variety of contexts and tenses. Of note, the employment of other poetry forms has been used in a variety of nonmilitary venues to augment research methodology, because it "helps maximize participation and participative writing in aesthetic ways and evokes the possibilities of the relational, ambiguous, and mysterious presence of a phenomenon."[8] This may be because some trainers are partial to haiku because it represents a direct experience, or "an instantaneous reflective moment without explication through words."[9]

For similar reasons, the use of haiku at SAMS was intended to be useful in broadening the intellectual creativity of students who, as graduates, will be expected to (1) analyze and assess complex, ambiguous operational environments; (2) teach, coach, and mentor; (3) understand and adapt to emerging missions; (4) engage senior leaders to enable decision-making and their ability to visualize, describe, and direct; and (5) be skilled practitioners in doctrine and operational art.[10]

Consequently, some SAMS instructors chose to incorporate the discourse of haiku into their lessons in the spring semester of 2023 in an effort to promote an aesthetic dimension to social and human research, translating and analyzing data so as to capture the "depth and intensity of emotions, engagement, and experiences of participants."[11]

As members of the Armed Forces, many of whom have participated in actual armed conflict or the semblance thereof in intense combat simulation exercises, most SAMS graduate students—though from different branches of the services or civilian backgrounds, and even from different allied and partnered nations—nevertheless share a unique cultural experience: the profession of arms. In an article on poetry and identity, Elena Abrudan states that culture expresses the tension between practices and representation; it is a product of society that comprises knowledge, language, activities, the system of representation and values, symbols, myths imposed to individuals; then, within the group, it corresponds to a creative movement of all the domains of social life; it is part of work, social



Another representation of principles related to planning and execution of the World War II Solomon Islands campaign developed during a SAMS class exercise held 24 February 2023 at Fort Leavenworth, Kansas, The haiku reflects major concepts that shaped joint force synchronization and domain convergence contributing to U.S. victory. The haiku is written on the illustration in the left lower corner. It reads, "Denied Access to; Find the Equation to Win; Multiplicity." (Photo by Michael Lopez, *Military Review*)

relations, entertainment, family life, action, and so on; it is present in all forms of social life, as a product and stimulus of transformation.[12]

Within the context of culture, the term "discourse" is frequently used to indicate "the special way in which natural language, spoken and written, is used in particular disciplines or by particular communities of practice."[13]

Culture is an ingrained feature of individual perceptions of experiences. SAMS students share the profession of arms, and often share actual combat experience, so they can use their shared cultural lens to shape their understanding and creative expressions in different ways than people from other cultural enclaves. As a result, the use of haiku in the classroom invites students to use language as not simply a system for conveying information; rather, the use of language becomes a means of acting socially. Transforming perceptions of combat among SAMS students into haiku presupposes an interaction of personal culture with group culture, while preserving the distinct individualism of the poet.

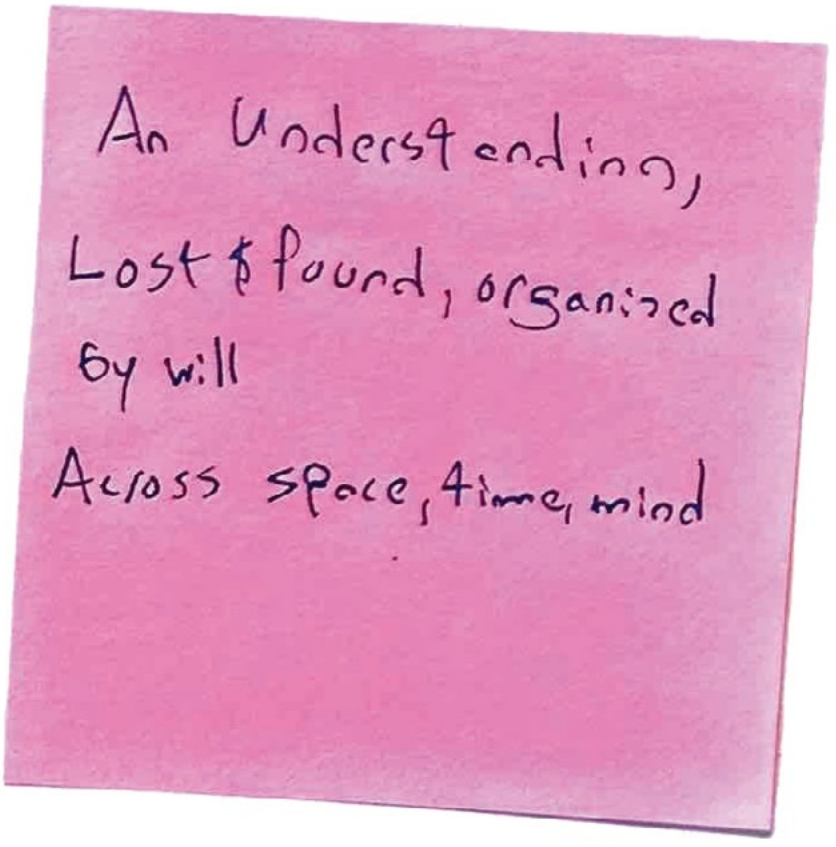
This shared cultural background also shapes how SAMS students, as adult learners, process educational experiences and highlights Eunice Newton's assertion that the "adult's readiness for learning is inherent in his[/her] societal role as a worker, parent, spouse, organizational member," etc.[14] Newton also observes that the adult learner is a rich resource for learning because the "mature individual is a veritable storehouse of codified experiences which are the essence of his central identity."[15]

Consequently, the individual richness of personal experience that SAMS students possess, combined with the fact that each was selected competitively for advanced education based on their potential as military officers, suggests that they are well suited to benefit from such novel learning experiences, including the use of haiku. This learning experience trains their minds to communicate simply to generate commander's intent. Consequently, unique perspectives of highly experienced military officers with a background of colorful, if not hazardous practical

experiences, influenced what emerged in their poetry.

What Writing the Haiku Compels an Adult Learner to Do

While the 5-7-5 syllable form is easy to imitate in *theory*, the haiku "has its own poetics difficult to imitate for a [non-Japanese] poet with a different language, culture, and pattern of thinking."[16] This makes the haiku a challenge, even for graduate students. Haiku is about imagery—the cryptic and compact nature of the style does not provide a "vehicle for explicit musing, rhetoric, symbolism, or flowery language. Any message or emotion must be implicit and be accessed only through the image."[17]



An example of a haiku formulated during a SAMS exercise held 24 February 2023 at Fort Leavenworth, Kansas. Haikus were written in text on the abstract drawings developed or appended with a note. The example above reads, "An understanding; Lost & found, organized by will; Across space, time, mind." (Photo by Charlotte Richter, *Military Review*)

Many current studies, as well as senior-level corporate managers, emphasize that writing and reading poetry can generate critical and creative thinking skills and stretch the boundaries of employees' imaginations, which are all abilities and skills prized in SAMS graduates. Moreover, reading and crafting poetry provides an indispensable tool for stimulating novel solutions, unlocking innovative thinking, facilitating transformative reflection, developing empathy, and reducing complexity into clear and simple ideas. Sidney Harman, the founder and former CEO of the Harman Industries, captured these sentiments in a 2007 *New York Times* article. "I used to tell my senior staff to get me poets as managers," Harman explained. "Poets are our original systems thinkers. They look at our most complex environments and they reduce the complexity to something they begin to understand."[18] Such skills and innovative creativity will be required of SAMS students during their follow-on utilization tours at the division, corps, and Army Service component command levels.

The intent of this article has been to provide readers with a brief overview of the use of haiku poetry in SAMS during 2023. The authors also hope that it encourages further professional dialogue and collaboration among Army educators about other possible adult learning activities that can enliven the classroom to make it more effective. The activity described in this article challenged uniformed and civilian students to employ alternative, unfamiliar forms of visual and poetic communication to express complexity in novel and illuminating ways. Of note, this approach is consistent with Army doctrine that emphasizes, "visual information is stimulating; therefore, visual models enhance critical and creative thinking … In other words, seeing something drawn may help individuals think through challenging problems, especially when examining abstract concepts."[19] ■

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1. Robert Yahnke, "Teaching Haiku Poetry in the Humanities Classroom," *Improving College and University Teaching* 29, no. 2 (Spring 1981): 71.

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3. Christopher M. Rein, *Multi-Domain Battle in the Southwest Pacific Theater of World War II* (Fort Leavenworth, KS: Combat Studies Institute Press, 2017), 62; John Prados, *Islands of Destiny: The Solomons Campaign and the Eclipse of the Rising Sun* (New York: Penguin, 2013). As part of the three-day block of instruction, students read the entirety of Prados's *Islands of Destiny*.

4. On convergence, see Field Manual 3-0, *Operations* (Washington, DC: U.S. Government Publishing Office [GPO], 2022), 3-3–3-4.

5. Mark J. Ravina, *Understanding Japan: A Cultural History* (Chantilly, VA: Teaching Company, 2015), 102–3. According to Ravina, haiku features the two devices that are distinct to Japanese poetry: pillow words and pivot words. Pillow words are set phrases that refer to other poems, wherein one or two words refer to an earlier poem, enabling the poetically literate to enjoy a chain of references. The pivot word is a homophone that changes meaning halfway through the poem. See also Dawn G. Blasko and Dennis W. Merski, "Haiku Poetry and Metaphorical Thought: An Invitation to Interdisciplinary Study," *Creativity Research Journal* 11, no. 1 (1998): 39, https://doi.org/10.1207/s15326934crj1101_5. According to Blasko and Merski, the haiku uses only seventeen syllables divided into three verses of 5-7-5 and includes a seasonal reference (*kigo*) and a *kireji*, often translated as "cutting word," which is kind of a spoken punctuation that divides the poem into two sections.

6. Joshua Chambers (major, U.S. Marine Corps), in communication with Tony Carlson, 9 July 2023.

7. Hong-Nguyen Nguyen and Wolff-Michael Roth, "An Analysis of Haiku Teaching Discourse: From Talking About to Doing Haiku," *Journal of Pedagogical Research* 3, no. 3 (2019): 113, https://doi.org/10.33902/jpr.v3i3.93.

8. Ibid.

9. Ibid., 115.

10. The expected outcomes for Advanced Military Studies Program students noted in welcoming packets distributed to incoming students for the 2024 academic year.

11. Nguyen and Roth, "An Analysis of Haiku Teaching Discourse," 114.

12. Elena Abrudan, "Poetry, Identity and Ideology," *Journal for the Study of Religions and Ideologies* 11, no. 33 (Winter 2012): 237, http://jsri.ro/ojs/index.php/jsri/article/view/652.

13. Nguyen and Roth, "An Analysis of Haiku Teaching Discourse," 114.

14. Eunice Shaed Newton, "Andragogy: Understanding the Adult as a Learner," *Journal of Reading* 20, no. 5 (1977): 362, https://www.jstor.org/stable/40032981.

15. Ibid.

16. Makoto Ueda, "Bashō and the Poetics of 'Haiku,'" *Journal of Aesthetics and Art Criticism* 21, no. 4 (1963): 423, https://doi.org/10.2307/427098.

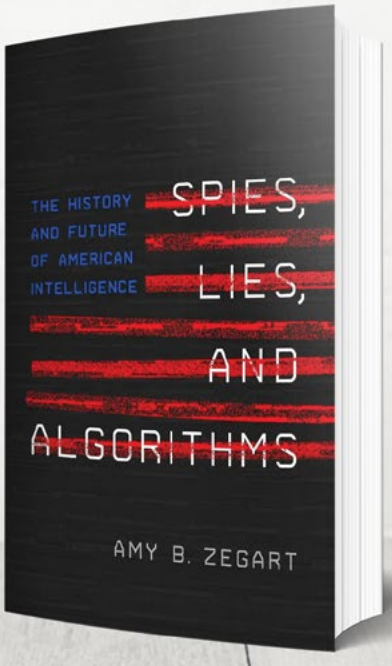
17. Zach Hudson, "Haiku in the Classroom: More Than Counting Syllables," *English Journal* 102, no. 6 (2013): 54, https://resolver.scholarsportal.info/resolve/00138274/v102i0006/54_hitcmtcs.xml.

18. Harriet Rubin, "C.E.O. Libraries Reveal Keys to Success," *New York Times* (website), 21 July 2007, https://www.nytimes.com/2007/07/21/business/21libraries.html; also see John Coleman, "The Benefits of Poetry for Professionals," *Harvard Business Review* (website), 27 November 2012, https://hbr.org/2012/11/the-benefits-of-poetry-for-pro; Rosalie Chang, "Why Reading Poetry Can Make You a Better Leader," Medium, 25 August 2019, https://marker.medium.com/where-poetry-meets-business-and-entrepreneurship-9ef932c8383f.

19. Army Techniques Publication 5-0.1, *Army Design Methodology* (Washington, DC: U.S. GPO, 2015), 1-9. Given the importance of visual modeling for staff officers, Advanced Military Studies Program graduates are also required to read Dan Roam, *The Back of the Napkin: Solving Problems and Selling Ideas with Pictures*, expanded ed. (New York: Portfolio, 2009).

Spies, Lies, and Algorithms

The History and Future of American Intelligence



Amy B. Zegart, Princeton University Press, Princeton, New Jersey, 2022, 424 pages

Lt. Col. John H. Modinger, PhD, U.S. Air Force, Retired, Fort Leavenworth, Kansas

In this excellent exploration of the challenges facing intelligence agencies in the decades to come, academic and policy wonk Amy B. Zegart welcomes the uninitiated reader into this frenzied world of change, automation, and deception in the book *Spies, Lies, and Algorithms: The History and Future of American Intelligence*.[1] Her status as an academic versus an operator has, she acknowledges, both drawbacks and benefits. While she does not have access to classified records, she claims an outsider's perspective, complete with ample doses of skepticism and independence, which leaves her free to pose uncomfortable questions and arrive at unflattering conclusions. The implication is—obviously—more so than an insider.

The backdrop against which intelligence services will have to operate is, in many respects, a blur. It is expected that artificial intelligence may possibly eliminate 40 percent of all jobs in the next twenty-five years. "Not since electricity has a breakthrough technology ushered in so much potential promise and peril."[2] In 2019, Google announced it had achieved "quantum supremacy"—a computing breakthrough so powerful that a math problem a supercomputer would need ten thousand years to solve could be cracked by its machine in just three minutes and twenty seconds. That kind of computing power could eventually unlock the encryption protecting nearly all the world's data today, placing at risk the entire financial system. Similar advances are underway in synthetic biology and nanotechnology as well.

Of course, we have seen technological advances before. But what sets this time apart from the past is the convergence of so many new technologies changing so much so fast. Zegart identifies three profound ways in which tech is challenging the intelligence-gathering landscape. First, the pace of change is generating new uncertainties and enabling new adversaries. While the Cold War was a dangerous time, it was, in many respects, a simpler time, too, and America's intelligence priority was clear. Today, by contrast, an array of bad actors is leveraging technology. A second

challenge is the data itself. Intelligence is a sense-making enterprise. It used to be that a small contingent of spy agencies dominated the collection and analysis of information. Now, data is democratized, and the "old pros" are struggling to keep up. The sheer volume of data is staggering, let alone trying to comprehend it all. It is estimated that the amount of information on Earth is now doubling every two years, and spy agencies are drowning in data. The intelligence playing field is leveling—and not in a good way.[3] In this topsy-turvy world, intelligence agencies are struggling to adapt. Suffice it to say, whoever can leverage all this data better and faster will win. A third challenge is secrecy. There has always been a built-in tension balancing secrecy and openness. Secrecy is essential to protect sources and collection methods; openness is vital for securing democratic accountability. Too much secrecy invites abuse; too much transparency renders intelligence unproductive. In the "good ole days," tech advances (like the internet) usually started inside the government and then migrated to the commercial sector. Today, that process is reversed. Instead of developing tech in-house, spy agencies now have to spot them and adopt them rapidly from outside entities. And the gravitational pull of these companies is powerful. It is difficult for government agencies to compete with companies that offer lucrative salaries and cutting-edge computer facilities. Then there is the persistent problem of engagement and collaboration with these companies. The level of distrust vis-à-vis spy agencies is high, and the history is filled with many dark chapters. Those agencies are attempting to win over skeptical companies and rebuild trust, but it will not be forged easily … or quickly. Another thing that is changing is who is making the decisions. Once upon a time, important decisions were made by federal agents who wore badges, held high-level security clearances, and knew how the intelligence community (IC) worked. Today, decision-makers often live a world apart from Washington and are more focused on quarterly profits and shareholder interests than they are national security.

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Zegart's purpose in writing this tome is to offer readers a better understanding of the intelligence world and the challenges intelligence agencies now face. She readily admits there are no easy answers but insists one thing is definitely true: America's intelligence agencies must adapt, or they will surely fail.

The book covers the gamut from intelligence challenges in the digital age to the mindboggling extent to which fictional spy depictions are shaping public opinion and intelligence policy. From American historical spying at a glance to some knowns and unknowns about the business, it is a deep look into why the work of analysis is so hard given the biases always lurking in the minds of analysts—cognitive traps that can lead even the sharpest minds astray. It delves into topics ranging from the tough work of counterintelligence to covert action and the hard business of tough choices—what covert action is and why all presidents use it, even though it so often fails. It examines the world of congressional oversight—from why it matters, to why it often fails to achieve its goals, and what the future holds—and reviews some highly contentious detention, interrogation, and warrantless wiretap programs. It also looks at the other players in the intelligence game these days. Finally, it includes a sober, albeit depressing, treatment of the cyber threats out there.[4] As Zegart puts it, "AI is creating deepfake video, audio, and photographs so real, their inauthenticity may be impossible to detect. No set of threats has changed so fast and demanded so much from intelligence."[5]

For America's IC, the new digital age is bursting with complexity and challenges. Success in this brave new world will demand a fundamental rethink about how to secure advantage in a radically new landscape. For Zegart, that rethink begins by getting back to basics and depoliticizing intelligence. But it will require more than just that. Agencies will have to embrace open-source intelligence, develop new capabilities, and reward agents and actors for doing things differently. Undoubtedly, this involves a tremendous paradigm shift, but one she argues is essential.

Over the last couple of decades, spy-themed entertainment has exploded while actual spy facts remain cloaked in darkness. Maybe unsurprisingly then, "spytainment" is standing in as a substitute for

adult education on the subject. While this may seem laughable and exaggerated, there are increasingly far-fetched instances where fictional spy tales are shaping public opinion and, more concerning, intelligence policy. Today, Hollywood is releasing twice as many spy blockbusters as it did in the 1980s.[6] That trend, toward more and more spy thrillers, seems likely to ensure distortions between reality and fiction will only grow in the years ahead. Indicative of this phenomenon was the box office hit *Zero Dark Thirty*, the Academy Award-nominated film about the Central Intelligence Agency's (CIA) ten-year hunt for Osama bin Laden. The filmmakers received considerable help from the CIA crafting the story. Maybe unsurprisingly, the film portrays the agency in a flattering light. However, when the film was released, it ignited so much controversy about what was real and what was not that the acting CIA director, Michael Morell, had to issue a memo to his own workforce clarifying the facts. "What I want you to know is that *Zero Dark Thirty* is a dramatization, not a realistic portrayal of the facts." Morell felt he could not stop there. He clearly felt compelled to directly dispute the movie's central claim: that harsh interrogation methods were pivotal to tracking bin Laden to his compound in Pakistan. "The film creates the strong impression that the enhanced interrogation techniques that were part of our former detention and interrogation program were the key to finding Bin Laden. That impression is false. The truth is that multiple streams of intelligence led CIA to conclude that Bin Laden was hiding in Abbottabad."[7] "Reality is nuanced. The movie was not. The result was deeply misleading. [T]oo often, depiction is shoddy education."[8] While spy fiction has become widespread, actual spy facts remain elusive. The net effect is a confusing maze where it is difficult and time-consuming to untangle what is real and what is pretend.

Simultaneously, many officials, together with critics of certain intelligence agencies, frequently complain that far too much information is needlessly classified, impeding information sharing, hindering collaboration, and undermining democratic accountability. Despite their complaints, little has changed in the many decades since the complaints began because bureaucracies naturally hoard information since revealing secrets can get bureaucrats into trouble but keeping them rarely does. The prevailing, but infuriating, mantra continues to be, "When in doubt, classify." There is frustration, even at the highest levels. Donald Rumsfeld's own deputy secretary of defense for counterintelligence and security testified before Congress that "half of all classification decisions are unnecessary over-classifications."[9] More recently, Gen. John Hyten, vice chairman of the Joint Chiefs of Staff, declared, "In many cases … we're just so overclassified it's ridiculous, just unbelievably ridiculous."[10]

Another barrier to understanding intelligence is, no doubt, the honed culture of secrecy embedded in the IC itself. That culture has a powerful grip. While a great deal of secrecy is required for intelligence folks to do their jobs, much of it is overkill. Zegart relates how she came to learn of a strategic plan which warned about terrorism and called for radical Federal Bureau of Investigation reforms three years before 9/11. Unfortunately, those reforms were never implemented. It's not difficult to understand why an agency would prefer not to have that kind of information out there. It would embarrass many and put the agency in a bad light. Another facet of this wall cordoning off intelligence, making it hard to comprehend, is that few study or teach it, largely because of the dearth of data. Data and evidence are the lifeblood of academic research. If one wants to study congressional decisions, there is a trove of data; legal scholars, likewise, have a bounty of court cases and judicial opinions at their fingertips. By contrast, intelligence scholars like Zegart have to rely on whatever gets declassified or whatever declassified information they can assemble. And while there is the Freedom of Information Act, the responsibility of government agencies to respond is not synonymous with handing over documents.[11] In short, it can be a Herculean task to get the information, even if the act allows for it. It is hardly surprising, then, that many professors avoid intelligence research. With ticking tenure clocks, they are often unwilling to risk their futures betting on the accessibility of documents. Thus, and regrettably, "spytainment" is all many have to get familiar with the IC.

But the proliferation of spytainment creates some real problems. First, it creates a public mindset that views intelligence agencies as far more powerful, capable, and unaccountable than they actually are; many come to believe these agencies are omnipotent, fueling, among other things, "Deep state" conspiracy thinking, which purports the government is out there running rogue, and presumably acting against most people's

interests on behalf of some murky, ill-defined power.[12] But that kind of wrongheaded thinking is not limited to uneducated or ignorant masses. No, policymaking elites are, all too often, invoking fictional spies and unrealistic scenarios as they formulate actual intelligence policy. So, "from the heartland to the beltway, a little knowledge of intelligence turns out to be a dangerous thing."[13]

Of course, the internet has facilitated "an online ecosystem tailor-made for spreading false narratives at lightning speeds and unprecedented scale. The internet has become a misinformation superhighway where conspiracy theories can be conjured up by anyone, posted on social media, spread by hashtag, amplified by bots, and picked up by mainstream media—all at the touch of a button."[14] In this "wild, wild West" forum, conspiracy theories can—and are—peddled by millions, including even one former president. The Trump administration went to great lengths to accuse U.S. intelligence agencies of having a role in a so-called deep state that was supposedly and secretly working to undermine his presidency at every turn. He infamously said he trusted Russian President Vladimir Putin's denials of interfering in the 2016 presidential election more than the judgments of his own intelligence agencies. This was/is astonishing![15] The troubling allure of conspiracy theories and deep state mythology raises serious doubts about the ability of intelligence agencies to fulfill their mission in the future, if such large portions of the public—and even a president—view them with such disdain and distrust.

So, while "spytainment" is engrossing and fun to watch, it has a distinct downside. Too often, fiction supplants fact, creating fertile ground for conspiracy theories to grow and shaping the formulation of actual intelligence policy. In the end, secret agencies in democratic societies cannot succeed without trust from those it serves. But trust requires knowledge. As former CIA and National Security Agency director Gen. Michael Hayden plainly puts it, "The American people have to trust us and in order to trust us they have to know about us."[16] How one goes about accomplishing that while preserving operational effectiveness remains to be seen, but he is certainly right.

There are so many appealing aspects of this book that this reviewer is inclined to wax on. But to go through each chapter at length would make this essay too unwieldy, too wordy. It is hoped this appraisal sheds sufficient light on Zegart's home run that readers are encouraged to grab a copy and indulge their curiosity. Suffice it to say this is an outstanding bit of scholarship a reader will have a hard time putting down given the treasures awaiting one's eyes on each successive page. If you want to thoroughly understand the panoply of challenges facing the intelligence community today, this book is a must read and comes with my highest recommendation! You will not be disappointed. ■

Notes

1. Amy Zegart served on the National Security Council staff and advised policymakers but never worked inside an intelligence agency. Instead, she is a career academic who has examined spy agencies from the outside, looking at how they have evolved over time, why they struggle so mightily to adapt to new threats, and what they must do to improve.

2. Amy B. Zegart, *Spies, Lies, and Algorithms: The History and Future of American Intelligence* (Princeton, NJ: Princeton University Press, 2022), 2.

3. Ibid., 6.

4. "Spytainment" has fueled conspiracy theories and influenced policymakers, with eighteenth-century invisible ink to twenty-first-century spy satellites; what intelligence is, what it is not, and how it operates. What motivates trusted insiders to become traitors?

5. Zegart, *Spies, Lies, and Algorithms*, 15.

6. Ibid., 25.

7. Ibid., 27.

8. Ibid., 28.

9. Ibid., 30.

10. Ibid.

11. Freedom of Information Act, 5 U.S.C. § 552 (1967).

12. Zegart, *Spies, Lies, and Algorithms*, 37. According to a 2006 Scripps poll, 36 percent of Americans considered it "likely" or "somewhat likely" that U.S. government officials either carried out the 9/11 attacks or knowingly allowed them to occur. Ten years later, another poll found that 25 percent of Americans still believed it was "probably" or "definitely" true that the "U.S. government helped plan the attacks of 9/11" despite no evidence that it is true and overwhelming evidence that it is not.

13. Ibid., 36.

14. Ibid., 37.

15. Ibid., 38. A 2017 *Washington Post*–ABC News poll found that nearly half of all Americans (48 percent) believed that a deep state of "military, intelligence and government officials who try to secretly manipulate government policy" exists; only 35 percent thought the deep state was an unfounded conspiracy theory (which means 65 percent thought the deep state existed in one form or another).

16. Ibid., 43.

Military Review

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Army University Press

Military Review Remembers Gen. Gordon R. Sullivan

Gen. Gordon R. Sullivan, the U.S. Army's thirty-second chief of staff, died 2 January 2024 at the age of eighty-six. Sullivan began his career as an armor officer in 1959. During his illustrious military career, he served one tour in postwar Korea, two combat tours in Vietnam, and four tours in Europe during the Cold War. He served as the commander of 1st Brigade, 3rd Armored Division, and later, he commanded the 1st Infantry Division. Sullivan went on to serve as the Army G-3 and the vice chief of staff before being appointed as the chief of staff on 21 June 1991, a position he held for nearly four years. He retired from the Army on 31 June 1995.

As the chief of staff, Sullivan oversaw great changes during a critical time in the Army, including its transformation from the Cold War Army, a massive post-Desert Storm troop reduction of six hundred thousand soldiers, the implementation of the "Don't Ask, Don't Tell" policy, and troop deployments to Somalia, Haiti, Rwanda, and the Balkans. And in 1993, Sullivan simultaneously assumed the duties of the acting secretary of the Army for three months.

After retirement, Sullivan continued to selflessly serve the Army in a civilian capacity as the president of the Association of the United States Army and the chairman of the board of the Army Historical Foundation. He also served as the president of Norwich University, his alma mater, and he coauthored *Hope Is Not a Method: What Business Leaders Can Learn from America's Army* with Michael V. Harper, a book that describes the efforts to downsize and transform the post-Cold War Army.

Interment will be held at a later date at Arlington National Cemetery. ■

Gen. Gordon R. Sullivan, then chief of staff of the Army, poses for his official photo in November 1992. (Photo courtesy of the U.S. Army)

Gen. Gordon R. Sullivan, chief of staff of the Army, speaks with members of the XVIII Airborne Corps during relief efforts in the aftermath of Hurricane Andrew, which struck south Florida on 24 August 1992. (Photo courtesy of the Department of Defense)

Medal of Honor
Col. Roger H. C. Donlon

Then Capt. Roger Donlon as a Green Beret serving in Vietnam in 1964. (Photo courtesy of the U.S. Army)

Col. Roger H. C. Donlon, recipient of the Nation's highest award for valor, died 25 January 2024 in Leavenworth, Kansas, at the age of eighty-nine. Donlon was the first service member awarded the Medal of Honor for actions during the Vietnam War as well as the first Special Forces soldier to receive the award.

Donlon was presented with the Medal of Honor for his actions on 6 July 1964 near Nam Dong in the Republic of Vietnam. At that time, then Capt. Donlon was the commander of a U.S. Special Forces detachment operating a base for South Vietnamese indigenous troops training to conduct irregular warfare against the North Vietnamese. Early that morning, the twelve Americans, one Australian, and 360 trainees on the base were attacked by a large force of Viet Cong and North Vietnamese soldiers using mortars, grenades, and heavy small arms fire. Donlon immediately organized his men to move ammunition from the burning buildings, established a defensive perimeter, and redistributed the ammunition where his force needed it most. He killed a three-man team attempting to breach the main gate, then moved to a nearby 60 mm mortar position, sustaining a stomach wound en route. He discovered that the mortar crew was also wounded, and despite his own wounds, he directed their displacement to a new position thirty meters away while he provided cover fire. He had to drag one soldier out and received a shoulder wound in the process. He then retrieved the mortar, administered first aid to the wounded, and moved to a second position to recover a 57 mm recoilless rifle. He returned to the gun pit to gather ammunition for the two weapons and was again wounded, this time in the leg. Despite his critical condition, Donlon continued to fight his way around the perimeter while under heavy fire to direct friendly fire and inspire his men to keep fighting. He was wounded a fourth time on his face and body by a mortar round, but at daylight, the enemy ceased their attack, and Donlon again reorganized his defenses and administered first aid to the casualties. After the five-hour fight, medevac helicopters were finally able to begin casualty evacuation, but Donlon refused to leave until all the other wounded men had been evacuated.

Donlon was presented with the Medal of Honor by President Lyndon B. Johnson in a 5 December 1964 White House ceremony. He retired in 1988 after serving for more than thirty years. He is the author of two books about his experiences in Vietnam: *Outpost of Freedom* and *Beyond Nam Dong*. ■