Infantry

Summer 2025

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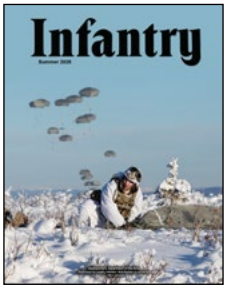

FRONT COVER:

A Soldier from the 3rd Battalion, 509th Parachute Infantry Regiment, 2nd Infantry Brigade Combat Team (Airborne), 11th Airborne Division, packs his parachute after landing on Donnelly Drop Zone in Alaska as part of Joint Pacific Multinational Readiness Center 24-02 on 8 February 2024. (Photo by SPC Wyatt Moore)

BACK COVER:

A Soldier fires the XM250 at Fort Greely, AK, in January 2024 as part of the U.S. Army Cold Regions Test Center's multiweek test of the Army's Next Generation Squad Weapon (NGSW). (Photo by Sebastian Saarloos)

This medium is approved for official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

By Order of the Secretary of the Army:

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Commandant's Note

BG PHILLIP J. KINIERY

As we continue to celebrate the 250th birthday of the U.S. Army and our Infantry Branch, we proudly honor our past as we strengthen our readiness and transform into a more lethal fighting force.

In April, we recognized the dedication, warrior spirit, and sacrifice of those who came before us as well as those who currently serve during our annual Infantry Week at Fort Benning, GA, which featured four world-class competitions (International Sniper Competition, Best Mortar Competition, Lacerda Cup, and Best Ranger Competition). Infantry Week embodies the lethality of the Infantry and our relentless pursuit of excellence. The challenges presented during these demanding events forge stronger, more capable Soldiers and reinforce the fundamental skills necessary to fight, survive, and win in the hardest days of combat.

This year's events included 127 teams, totaling more than 400 competitors from across the Army and our sister services as well as eight allied forces. A full recap of all four competitions is included in the subsequent pages of this issue, but I want to congratulate those winning teams from the 75th Ranger Regiment who topped the Best Mortar Competition, Lacerda Cup, and Best Ranger Competition, and the team from the 3rd Special Forces Group (Airborne) who won the International Sniper Competition. I also want to thank the cadre, staff, and other supporters whose hard work ensured the success of these events and recognize all the competitors for exemplifying the strength, perseverance, and teamwork that are at the core of the Infantry.

The Infantry Branch continues to play a vital role in the Army's mission to remain the world's most combat-credible force capable of defeating any adversary. In this issue of *Infantry*, we include a range of articles that focus on our efforts to ensure the Army can deliver trained, lethal, and cohesive teams to meet future challenges in complex operational environments.

In their article "Harnessing SIGINT and EW for Tactical Dominance," MG Rick Appelhans and MG Ryan Janovic provide platoon and company-level combat arms leaders with a primer on how the intelligence and cyber communities can enable them to dominate the electromagnetic spectrum (EMS). In future fights, controlling the EMS will be just as important as holding key terrain. Leaders must integrate signals intelligence (SIGINT) and electromagnetic warfare (EW) considerations into battle drills, mission rehearsals, and after action reviews to gain a decisive advantage on future battlefields. As the authors succinctly point out, "Superiority in the EMS is not an option — it is a necessity." We need to ensure our leaders and Soldiers are educated on SIGINT and EW capabilities, know how to integrate them to counter enemy threats in the EMS, and then incorporate these capabilities into tough, realistic training.

In another article titled "Light Infantry Lethality," LTC D. Max Ferguson discusses how one of the Infantry's least understood systems, the M3A1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS), provides rifle platoons with a powerful tool that "defeats armor, illuminates, obscures, and neutralizes threats behind defilade." The Carl Gustaf's power and versatility exponentially increase the lethality of infantry brigade combat teams, and LTC Ferguson offers ways infantry units can improve proficiency and leader familiarity with this important weapon system.

In addition to lethality, infantry units also need to build survivability. In his article, 1SG Philip J. Piennette discusses the importance of engaged leadership during large-scale combat operations and why "trooping the line" is essential to unit readiness. NCOs must inspect their Soldiers at every opportunity to rectify deficiencies. "Through repetition, uncomfortable situations become comfortable," he notes. Enforcing these standards will build grit and physical toughness as well as reduce confusion, contributing to a more lethal fighting force.

The final articles I want to highlight come from the Army's newest division, the 11th Airborne. The Alaska-based Arctic Angels have the difficult dual focus to not only master combat operations in extreme cold weather, mountainous, and high-latitude environments but also be poised to conduct expeditionary operations across another priority region that encompasses vastly different terrain and temperatures — the Indo-Pacific. In three articles, leaders from the 3rd Battalion, 509th Infantry (Airborne) discuss how the division pursues these two lines of efforts and the unique challenges their Soldiers' face as they pioneer innovative solutions.

As you read through the pages of this issue, we welcome your feedback. Let us know what articles you have found valuable or what you would like to see in future issues. We encourage all Infantry Soldiers to consider contributing to our branch's professional bulletin and thank all those who have submitted their works for publication.

I am the Infantry! Follow me!

International Sniper Competition

7-11 April

1st Place – 3rd Special Forces Group (Airborne)
2nd Place – 3rd Battalion, 75th Ranger Regiment
3rd Place – National Guard (NG) - Warrior Training Battalion
4th Place – Special Warfare Training Group (Airborne)
5th Place – U.S. Coast Guard Maritime Security Response Team
6th Place – 37th Infantry Brigade Combat Team (IBCT) (Michigan ARNG)
7th Place – Operations Group Wolf (ARNG)
8th Place – 45th IBCT (Airborne) (Nebraska ARNG)
9th Place – 2nd Battalion, 75th Ranger Regiment
10th Place – South Korea 701st Commando Regiment

(Clockwise from top right) An International Sniper competitor fires his weapon during an event on the first day of the competition at Ruth Range on Fort Benning, GA. (Photos by Joey Rhodes II)

Sniper teams conduct the "Foot March" event at Brooks Range.

A sniper team engages targets during the "Back to the Basics" event of the International Sniper Competition on 7 April.

Sniper teams and coaches from across the globe take on the "Sniper Showdown" event at Burroughs Range during the final day of the competition.

See more photos from all four of the Infantry Week competitions at https://fortmoore.smugmug.com/Ceremonies-and-Events/Postwide-Competitions/InfantryWeek.

Best Mortar Competition
7-11 April

1st Place – 75th Ranger Regiment
2nd Place – National Guard (Arkansas)
3rd Place – 25th Infantry Division
4th Place – 173rd Airborne Brigade
5th Place – 3rd Battalion, 4th Marine Regiment
6th Place – 3rd Infantry Division
7th Place – 2nd Cavalry Regiment
8th Place – 2nd Battalion, 8th Marine Regiment
9th Place – Denmark
10th Place – United Kingdom

(Clockwise from top right) A member of the 3rd Infantry Division team completes an event during the first day of the Best Mortar Competition on 7 April at Fort Benning, GA. (Photos by CPT Stephanie Snyder)

Soldiers representing the 3rd Infantry Regiment (Old Guard) fire their 120mm mortar system during a live-fire event on 8 April.

Team 10 from the 75th Ranger Regiment completes the 60mm live-fire event on the second day of the Best Mortar Competition.

Members of the 75th Ranger Regiment team move ammunition boxes during the "Mortar Task" event on 8 April. (Photo by Daniel Marble)

(Clockwise from top left) Soldiers compete in the 2025 Lacerda Cup Competition quarter finals on 9 April at Freedom Hall on Fort Benning, GA. (Photo by Patrick A. Albright)

Soldiers grapple during the final bouts of the Lacerda Cup on 10 April. (Photo by Daniel Marble)

Soldiers battle it out during the competition's prelimary round on 8 April. (Photo by SGT Duke Edwards)

Soldiers compete in the 2025 Lacerda Cup's Tactical Scenario on 11 April. (Photo by Daniel Marble)

Lacerda Cup All Army Combatives Championship 7-11 April

The **75th Ranger Regiment** was named overall champion of the 2025 Lacerda Cup.

The following are the results from the individual championship bouts:

Bantamweight – SPC Koraima Reyes, 11th Airborne Division
Flyweight – PFC Aydan Gwisdalla, 75th Ranger Regiment
Lightweight – CPT Augustus Coffey, 4th Infantry Division
Welterweight – SFC Kenry Trowers, 82nd Airborne Division
Middleweight – SPC Joshua Aveles, 82nd Airborne Division
Cruiserweight – SGT Jeremiah Slagle, Ohio National Guard
Light Heavyweight – SGT Gavin White, 82nd Airborne Division
Heavyweight – SPC Theodore Bostert, 101st Airborne Division

41th Annual David E. Grange Jr.
Best Ranger Competition
11-13 April

1st Place – 1LT Griff Hokanson and 1LT Kevin Moore, 75th Ranger Regiment

2nd Place – SFC Nicholas Whitney and CPT Austin Rutledge, Airborne and Ranger Training Brigade

3rd Place – SGT Emerson Schroeder and SGT Tyler Steadman, 75th Ranger Regiment

4th Place – SGT Andy Helminen and 1LT Lane Peters, 75th Ranger Regiment

5th Place – SGT Tyler Gravem and 1LT Bryce Sullenger, 4th Infantry Division

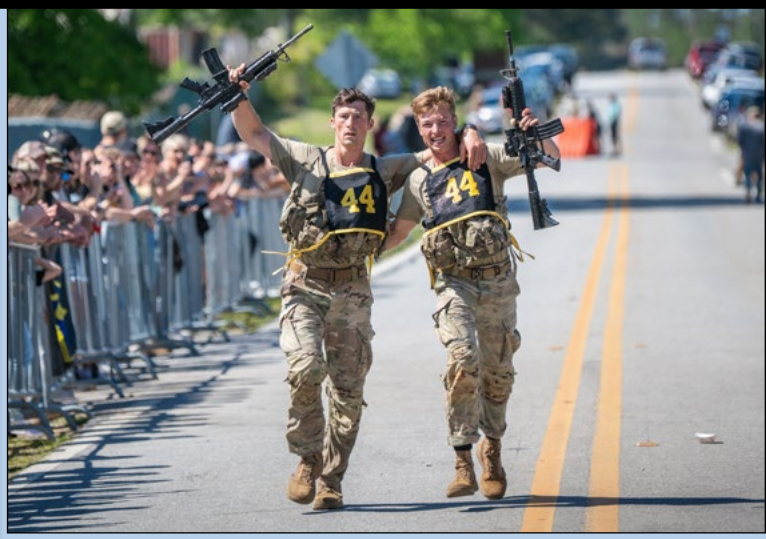
6th Place – SGT Cody Krawczyk and 1LT Paul Rose, 101st Airborne Division

7th Place – 1LT Cole Chappell and 1LT John Thornton, 2nd Cavalry Regiment

8th Place – 1LT Jacob Knight and 1LT Steven Andreen, 4th Infantry Division

9th Place – 1LT Zachary Simon and SFC Christopher Nagel, 82nd Airborne Division

10th Place – Team 17 – 1LT Cole Falkenstine and SGT Nicholas Simpson, 11th Airborne Division



(Clockwise from top right) The winning Best Ranger team, 1LT Griff Hokanson and 1LT Kevin Moore, cross the finish line on 14 April. (Photo by Patrick A. Albright)

A team from the 82nd Airborne Division completes the Malvesti Obstacle Course on Day 1 of the competition. (Photo by Patrick A. Albright)

A Best Ranger competitor enters Victory Pond during the helocast event on the final day of the competition. (Photo by Michelle Rowan)

A team from the 25th Infantry Division rappels at Todd Field on 11 April. (Photo by Patrick A. Albright)

1LT Justin Baucom, assigned to 3rd Infantry Division, fires a musket during the Best Ranger Competition's mystery event on 11 April. (Photo by SPC Trey Woodard)

(Image created by DALL-E)

Harnessing SIGINT and EW for Tactical Dominance:

A Guide for Combat Arms Leaders

MG RICK APPELHANS
MG RYAN JANOVIC

Introduction

To the combat arms platoon leader and company commander: You are leading formations that will close with and destroy the enemy. Your ability to shoot, move, communicate, and then move again (see later section on countering enemy surveillance in the electromagnetic spectrum) is paramount to our success on the modern battlefield. The enemy is sophisticated, adaptive, and aggressively contesting your ability to maneuver in all domains, including the electromagnetic spectrum (EMS). You are not alone in this fight; the intelligence and cyber communities will enable you to dominate the EMS. These communities stand ready to provide you with actionable targets and the means to influence/dominate the EMS at echelon. This is not theory; this is the reality of combat against peer and near-peer adversaries, and we are bringing the full weight of the Department of Defense (DoD) and its combat support agencies to bear. Your S-2 section and Cyber Electromagnetic Warfare Activities (CEMA) cell will innovate at speed across the range of operations to ensure that you have the capabilities necessary to win.

SIGINT and EW: Your Tactical Edge

Signals intelligence (SIGINT) and electromagnetic warfare (EW) are distinct but complementary disciplines that must be integrated effectively to maximize battlefield effects. SIGINT identifies and characterizes enemy signals, providing critical intelligence that inform EW operations. EW teams can use that information to help locate enemy positions for destruction, or simply to disrupt, deceive, or deny the adversary's use of the electromagnetic spectrum. Proper coordination between SIGINT and EW enables deception operations, enhances precision targeting, and strengthens

force protection measures, ensuring that friendly forces maintain dominance over the EMS while denying the enemy key capabilities.

Based on historical analysis of large-scale combat operations (LSCO), recent lessons learned from Ukraine, and predictive analysis of China's People's Liberation Army (PLA) capabilities, the teaming of SIGINT and EW can be a force multiplier across the warfighting functions. By integrating SIGINT-derived intelligence with EW's ability to deny and disrupt, we can significantly degrade an adversary's ability to maneuver and execute multidomain operations (MDO).

Understanding SIGINT in Your Fight

SIGINT is not just a tool for strategic planners in some far-off headquarters. It is a tactical enabler that allows you to detect, locate, and exploit enemy communications in real time. Whether you are setting up an ambush, planning a fire mission, or maneuvering to secure a key objective, SIGINT can provide the enemy's disposition, intent, and vulnerabilities. The Army's ability to identify and track enemy command nodes, air defense systems, and maneuver elements through SIGINT means you can strike at the right place and time with overwhelming force.

How EW Shapes the Battlefield

EW is your ability to seize control of the EMS. EW is the counterweight to enemy SIGINT and can greatly affect their ability to execute command and control (C2) while disrupting their ability to communicate, navigate, and coordinate. If the enemy cannot receive orders, they cannot react. If their targeting systems are blinded, they cannot fire effectively. Ultimately, if they can't navigate, they cannot effectively maneuver forces on the battlefield. EW, when employed effectively, can have significant battlefield effects, all without firing a shot.

EW's Three Essential Functions:

Electromagnetic Support (ES): Detecting and identifying enemy emitters to support targeting and situational awareness.

Electromagnetic Attack (EA): Jamming and deception operations that deny the enemy use of the spectrum.

Electromagnetic Protection (EP): Ensuring that friendly forces maintain reliable communications despite enemy jamming, to include employment of emission control measures (e.g., radio power, antenna placement, etc.) to defeat enemy attempts to surveil and target friendly forces.

The Critical Role of SIGINT and EW in Tactical Operations

The operational environment requires agility, synchronization, and unity of effort to converge all sensors and effects on a rapidly evolving threat. The ability to integrate SIGINT with EW at the tactical level allows commanders to enhance targeting fidelity (SIGINT and EW), disrupt adversary operations (EW), and provide real-time intelligence for maneuver forces (SIGINT).

To focus on C2 and counter-C2, expanded maneuver, and cross-domain fires, we must team SIGINT and EW across EA, ES, and EP to present multiple dilemmas to our enemy, enhance C2 protection, and increase lethality. Let's look at an example:

Kill Chain Analysis: A Counter-Unmanned Aerial System (C-UAS) Scenario

In an era where UAS play an increasingly critical role in modern warfare, understanding the full kill chain process for countering these threats is essential for operational success.

Phase 1: Detect and Identify

A brigade combat team (BCT) is executing a deliberate attack when SIGINT elements intercept and transcribe enemy communications emanating from an urban area associated with drone activity. Electromagnetic support reporting from sensors riding on a remote-controlled scouting vehicle confirms the presence of enemy UAS operating frequencies, geolocating multiple launch sites and relay nodes.

Phase 2: Target and Disrupt

Upon confirming the threat, the BCT's organic EW platoon, using Terrestrial Layer System (TLS) Manpacks, receives the locations of the threat signals of interest (SOI), and executes an electromagnetic attack to jam the drone's control frequencies, disrupting the operator's ability to maneuver the UAS effectively. Simultaneously, SIGINT analysts coordinating with higher-echelon intelligence teams pinpoint the drone operator's location for kinetic targeting.

Phase 3: Engage and Destroy

With the drone rendered ineffective, the fire support element coordinates an artillery strike on the enemy UAS ground control station, leveraging the precision geolocation refined by enhanced tools like the Electromagnetic Warfare Planning and Management Tool (EWPMT) and the Army Intelligence Data Platform (AIDP). Simultaneously, the EW platoon continues to jam the enemy's communications, preventing coordinated support or retrograde. Friendly forces neutralize the threat, allowing maneuver elements to proceed unimpeded.

Phase 4: Assess and Adapt

Post-strike analysis from SIGINT utilizing High Altitude Platform (HAP) sensors reveals ongoing enemy attempts to reestablish drone operations, underscoring the necessity for sustained EA efforts. In response, SIGINT teams disseminate updated threat reporting to the EW platoon, enabling them to adjust jamming frequencies and counter enemy adaptations. Concurrently, SIGINT elements refine their intelligence collection to anticipate and prepare for potential future enemy tactics, ensuring proactive EW measures.

This coordinated SIGINT and EW kill chain ensures the enemy's UAS capability is neutralized before it can affect friendly operations. This vignette effectively illustrates the critical synergy between intelligence-driven targeting and spectrum dominance.

How You Can Leverage SIGINT and EW at Your Level

To gain a decisive battlefield advantage, leaders must integrate SIGINT and EW capabilities to counter enemy threats in the EMS. The following approaches can help achieve this:

Incorporate SIGINT and EW into the DNA of Your Planning and Execution

From the outset, consider how to effectively integrate these capabilities into your operations to inform and shape your decision-making. Collaborate closely with supporting staff elements, such as the BCT CEMA cell and S-2 section, to gain a deep understanding of the enemy's electromagnetic spectrum usage and identify opportunities to disrupt and exploit their vulnerabilities. By incorporating SIGINT and EW into your operational framework, you can create a more comprehensive and effective approach to achieving your mission objectives.

Train Your Leaders and Soldiers to Recognize and Exploit the EMS

Your Soldiers must understand that controlling the EMS is just as vital as controlling key terrain. Integrate SIGINT and EW considerations into your battle drills, mission rehearsals, and after action reviews. Units that fail to account for enemy EW will put their formations at significant risk on the battlefields of the future. Training ensures you can adapt and maintain tempo under contested conditions.

SIGINT and EW teams can sense across the EMS with ES at the tactical edge. By developing new tactics, techniques, and procedures (TTPs), SIGINT support from higher echelons, such as from the division level, can be pushed down to BCTs, providing real-time EMS sensing without burdening them with protecting and maneuvering higher-echelon intelligence capabilities. Ultimately, this enables more agile and lethal maneuver forces.

Ensure Interoperability with Supporting SIGINT and EW Units

SIGINT and EW units are enablers, not afterthoughts. Integration of SIGINT and EW elements throughout the organic targeting process is key. Work with them to refine target identification and EA options. Develop unit standard operating procedures (SOPs) that detail how to request and synchronize their capabilities in real-time engagements and incorporate them in all rehearsals. Leaders must ensure that EW Soldiers are embedded within tactical formations to provide immediate effects that enhance maneuver and fires.

Adopt an Aggressive, Learning-Focused Mindset

The enemy is adapting. As such, we must do the same. Stay informed on the latest TTPs by leveraging resources such as the Center for Army Lessons Learned (CALL) and current doctrinal publications like Field Manual (FM) 2-0, *Intelligence*, and FM 3-12, *Cyberspace Operations and Electromagnetic Warfare*. We must continue to share lessons learned across our formations and with intelligence and EW enablers to continually refine our operational effectiveness.

The future fight will be won by those who master the integration of intelligence and electromagnetic warfare, seamlessly fusing these disciplines into their formations and operational planning.

Conclusion

In an era where the electromagnetic spectrum is as contested as the physical battlespace, success demands leaders fully integrate SIGINT and EW into their tactical decision-making. These are not ancillary capabilities but core enablers of maneuver, fires, and protection. By treating SIGINT and EW as an integral piece of battlefield operations rather than separate support functions, we can outthink, outmaneuver, and overwhelm our adversaries before they can react.

The future fight will be won by those who master the integration of intelligence and electromagnetic warfare, seamlessly fusing these disciplines into their formations and operational planning. This requires continuous learning, rigorous training, and adaptive thinking to counter evolving enemy tactics. The intelligence and EW communities stand ready to support, provide counsel for our specialties, and execute through our commanders' intent.

Superiority in the EMS is not an option — it is a necessity. By embracing these capabilities and fostering interoperability, we ensure that our forces maintain a lethal edge on the battlefield. The challenge is clear, and the tools are at hand. Now is the time to educate our leaders and Soldiers and incorporate these capabilities into our training so we are prepared to fight and win our nation's wars.

MG Richard T. "Rick" Appelhans currently serves as the commanding general of the U.S. Army Intelligence Center of Excellence and Fort Huachuca, AZ. Prior to assuming this position, he served as the director of Intelligence, U.S. Forces Korea/deputy director of Intelligence, Combined Forces Command. MG Appelhans' overseas assignments and deployments include the Republic of Korea, Kuwait, Germany, the Netherlands, Afghanistan, Bosnia-Herzegovina, and Iraq. He began his military career as an Armor officer, serving as a tank platoon leader, company executive officer, and battalion S-4. Since transitioning to Military Intelligence in 1997, MG Appelhans has served in a variety of command and staff assignments to include detachment commander, battalion S-2, company commander, brigade combat team S-2, analysis and control element chief, region commander, division G-2, and group commander.

MG Ryan Janovic currently serves as the commanding general of the U.S. Army Cyber Center of Excellence and Fort Eisenhower, GA. A native of Akron, OH, he graduated from the U.S. Military Academy at West Point, NY, in 1993 and commissioned into the Military Intelligence Corps. He served with Multi-National Forces-Iraq, 1st Infantry Division in eastern Afghanistan, Military Intelligence in Korea, and later with Commander United Nations Command/Combined Forces Command/U.S. Forces Korea. His other assignments include various posts throughout the U.S. to include a tour as a White House Fellow. In 2019, MG Janovic joined the cyber ranks as the deputy commander of Joint Force Headquarters – Cyber (Army), leading the organization toward unit citations earned in support of U.S. Central Command.

(Photo by SrA Emily Farnsworth, USAF)

Light Infantry Lethality:
Understanding the Power of the Goose

LTC D. MAX FERGUSON

The Carl Gustaf Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS) is a remarkable weapon system for light infantry forces. But this weapon is also one of the least understood systems across the Infantry.

The 84mm Recoilless Rifle goes by many nicknames: Carl G, the Gustaf, the Goose, MAAWS, the M3. Whatever you call it, it looks like a beast, and one glance tells you that it packs a punch. Yet the uninitiated mistake the Carl G as little more than a reloadable AT4 so it still gets driven like an old station wagon when it has the performance, versatility, and power of a race car.

The new M3A1 MAAWS with the integrated fire control system (FCS) is so capable, it's almost cheating… but only if our gunners — and our leaders — understand all that it is capable of and how to employ it. The Carl G deserves to be more than a show pony that sits in the arms room, neglected.

The M3A1 Carl Gustaf is the most powerful weapon system in a rifle platoon. As the Army searches for ways to increase the lethality of the infantry brigade combat team (IBCT), one of the solutions is already sitting quietly in our arms rooms, waiting to get the attention it deserves.

A Natural Recipe for Neglect

There are two compounding reasons why the Carl G gets overlooked and has yet to truly infuse itself into the light infantry ethos. The first is a general lack of familiarity or exposure to the weapon among maneuver leaders. Few saw the original M3 in action in Iraq or Afghanistan due to its limited fielding (mostly across special operations forces [SOF]), and even less have seen the new M3A1 perform with the integrated digital optic, which completely changes the consistency and accuracy of the weapon by an exponential factor.

Light Infantry Soldiers train with the M3A1 Multi-Role Anti-Armor Anti-Personnel Weapon System at night using the 7.62mm sub-caliber tracer munition. (Photo by CPT Josh Crossman)

The second is a gross lack of available training ammunition (sub-caliber 7.62mm training rounds or full caliber training practice [TP] rounds) to build the needed appreciation for the weapon. What can we expect in terms of proficiency or confidence in our weapons when we give our gunners the minimum required rounds yearly to train with? The answer: a day familiarization that, at best, helps teams hit a static target at 300 meters during the day, which is what we can expect from an AT4. The M3A1, however, can hit targets beyond 1,000 meters day or night. The FCS can immediately calculate the speed of a moving target and show the gunner where to aim to hit that target while moving. And, if given high explosive (HE) 441 rounds to train with, our gunners can learn how to select airburst so the rounds explode over troops in the open at up to 2,000 meters behind defilade.

The Carl G will be one of the most impactful weapons for American light infantry forces in the next major war… but only if we can learn how to employ it! The goal of this article is to help leaders gain a true appreciation for the power and versatility of this weapon system. It explains some of the critical capabilities that the new M3A1 provides when paired with its optic, the Fire Control System 13-Rate Estimator (FCS13-RE). Lastly, this article shares recommendations for how to update the marksmanship training progression for the M3A1 MAAWS to build both individual gunner proficiency and leader familiarity with what the system offers our infantry platoons and squads fighting across rugged and restrictive terrain.

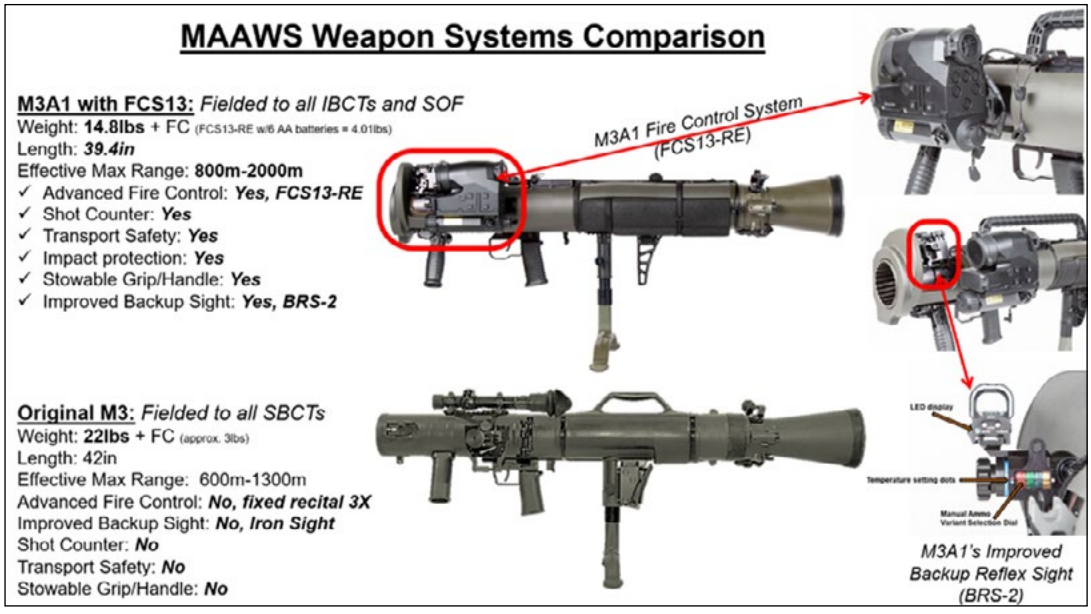
To see a marked improvement, we just need to expand our understanding of what it offers and provide our gun teams with significantly more training ammunition to build proficiency for both day and night against static and moving targets at distance. As this article will explain, however, the ammunition change is not a big ask. In the end, there might not be a better return on investment for the Army than making long-overdue updates to the M3A1 training ammunition allocation.

Advancing the Original M3 to the New M3A1 with Digital Fire Control System

SOF has had the greatest appreciation for the Carl G since the 75th Ranger Regiment first acquired the M3 in 1989. The recoilless rifle made regular appearances over the last three decades at platoon live fires where gunners took turns trying to knock out bunkers at plus-or-minus 400 meters at night with TP rounds. When the M3 team hit the bunker, it would be spectacular — one shot and the bunker was neutralized, probably collapsed. And that was just from the "concrete" practice round. It was easy to imagine what a real HE round would do.

Those were the highlight reel moments, however. For every bunker hit, there were repeated misses, especially when the targets were small or further out. Rounds would often quietly sail over the horizon, leaving the assaulters

Figure 1 — Comparison of the New M3A1 with FCS13 and Original M3 (Graphic courtesy of author)



doubting whether their gunners would manage that shot in a two-way firefight.

Rangers and IBCTs just finished the full fielding of the new M3A1 and the integrated digital FCS (FCS13-RE) in October 2024.[1] The days of repeated missed shots quietly sailing over the horizon or impacting ineffectively just shy of the target are over. The new M3A1 paired with the FCS is the difference between a flip phone and a smart phone. Technically, they both text, take pictures, and make calls, but there's no comparison to the functionality, speed, and qualitative difference between the two. If you are old enough to remember T9 texting, then you'll understand the comparison here of how much faster and effective it is to acquire and engage targets with the M3A1 and FCS than with the original M3 and manual sights.

Why the FCS13-RE Changes the Game for the Carl G

There are a host of challenges to hitting a target with a recoilless rifle. Each munition type has its own ballistics, and they fly differently based on the type (from TP or TP with tracer [TPT] to smoke, HE dual-purpose [HEDP], and HE anti-tank [HEAT]). They also fly differently based on the altitude, the ambient air temperature, as well as the temperature of the round's propellant (where/how the round is stored before firing). Point of aim on iron sights will not be point of impact. Original M3 gunners had to learn their holds at different distances for each type of round, and only experience with each round taught gunners their holds. And all of it would be an estimation at best. Mounting a Storm Laser Range Finder could help M3 teams factor the distance to set in 50-meter increments on their manual cam wheel dials with luminescent rings, but that was only one factor. Adjusting points of aim for the altitude as well as the air and powder temperature could also become a guessing game best left alone when firing the original M3.

The new M3A1 does more than shave seven pounds and three inches in length from the original M3. The M3A1 with FCS13 is a full-fledged computer that will make an old Goose gunner sick with envy. It's a true fire control system that accounts for all the confounding factors that used to cause gunners to miss those critical shots. Even the improved backup reflex sight (BRS) on the M3A1 is an improvement from the original M3 fire control knobs.

The FCS13-RE is capable of both day and night operations. The red dot is compatible with our individual night vision systems so there's no need to change optics or viewing devices from day to night operations. Gunners can tell the computer the altitude, outside temperature, and temperature the ammunition is stored at, and the computer immediately factors all those variables into the point of aim for the gunner.

The FCS13-RE is a modular ballistic computer capable of holding more than 50 ballistic solutions for different MAAWS munition types. Gunners can select up to five quick access types prior to going on mission for rapid selection during an engagement. The key for training is to identify the FCS13-RE's menu selection for the sub-caliber rounds (listed as "SCA" for sub-cal adapter or "7.62" in the FCS13 menu depending on the software version) to select the right ballistics for TP and TPT rounds (they are distinct). In the event any new munitions are not present in a unit's version of the FCS, a quick software update can be uploaded to the computer.

The FCS13-RE's built-in laser range finder (LRF) calculates points of aim for both static and moving targets. A single press of the LRF measures the point of aim on a static target. When gunners press the LRF for more than two seconds, the fire control will calculate a moving target solution utilizing an on-board gyro and multiple pulses of the laser. The optic then provides both a target lead point as well as the hold for the gunner based on the target's calculated speed and distance along with the ballistic performance of the selected munition type. The gunner then just matches their red dot to the optic's aimpoint and fires. It's a remarkable feature but one that can only be mastered through repetitions and practice under a host of scenarios involving various firing positions, speeds, distances, and visibility conditions.

With a thermobaric warhead, the Anti-Structure Munition (ASM 509) can provide effects against multi-story buildings. It also serves well against snipers in built up areas and enemy inside caves. (Photo courtesy of PEO Soldier)

The Versatility of the MAAWS

The MAAWS is so much more than an anti-tank weapon. The menu of munition types allows rifle platoons to employ the Carl G for a variety of functions; however, it is often characterized as a light and medium anti-tank system because of the limited munition types the U.S. Army keeps in its inventory. The U.S. Army currently

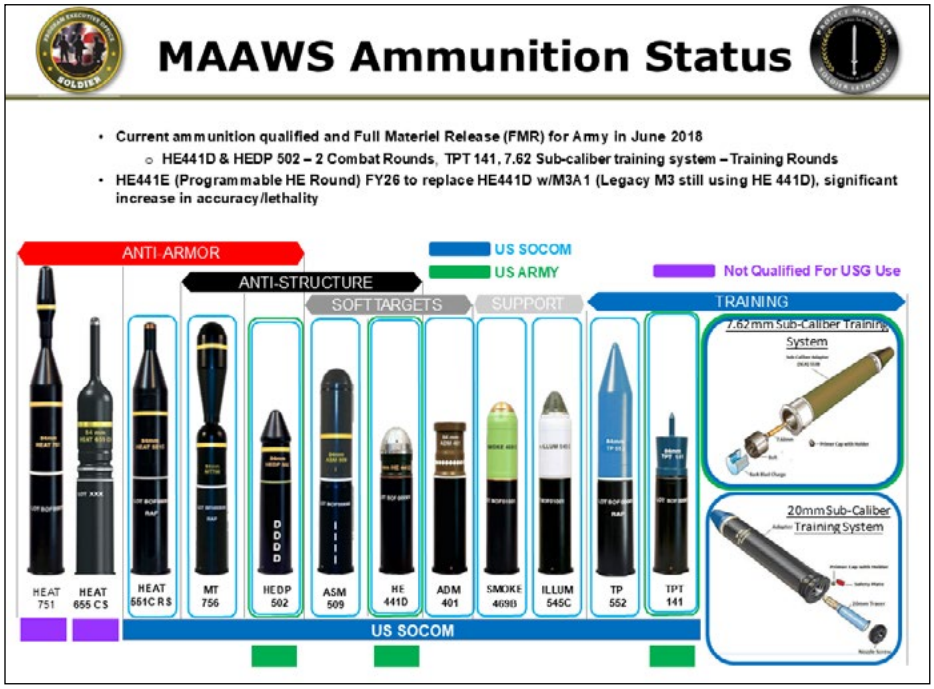


Figure 2 — A Depiction of Ammunition Variants for the MAAWS

There are only four rounds available to the U.S. Army (HEDP, HE, TPT, and 7.62mm Sub-Cal); however, there are numerous other round variants either in production or in development for future consideration. (Graphic courtesy of PEO Soldier)

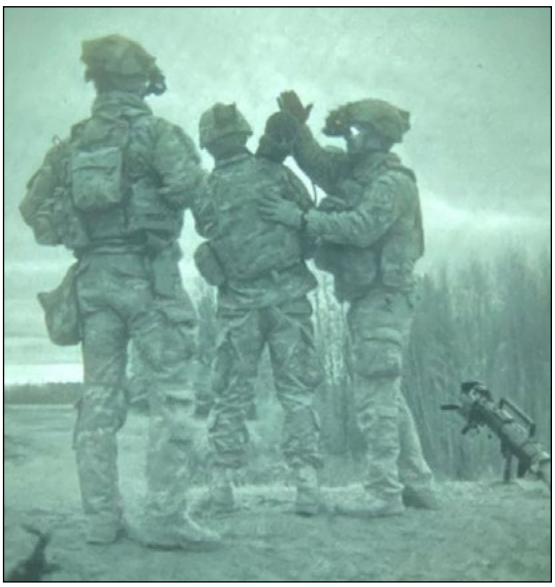
fields the High Explosive Dual Purpose 552 cartridge which can defeat light armor and personnel. It can be employed for either impact or delay mode. The U.S. Army also fields the High Explosive 441D cartridge which has a timer on the front of the cartridge for airburst above targets in defilade. The Army fields two training munitions: the 7.62 Sub-Caliber Adapter 553 system and the full caliber Target Practice Tracer 141 training cartridge.

There are a breadth of munitions variants already in production that other partner nations (and U.S. Special Operations Command) maintain. A High Explosive Anti-Tank 551C Reduced Sensitivity cartridge with tandem warhead can destroy main battle tanks equipped with Explosive Reactive Armor (ERA). An Anti-structure Munition 509 (ASM) can destroy bunkers and small buildings with a thermobaric warhead. A Multi-Target 756 cartridge can defeat targets behind concrete walls with a tandem warhead. Smoke rounds can provide thick, high-concentrated obscuration on demand for assaulters moving across exposed objectives more than 1,000 meters away.

The airburst option using HE rounds is one of the MAAWS' critical capabilities; however, few gunners or leaders have the opportunity to gain familiarity with employing this effect.[2] None of the training munitions can replicate the airburst option, only point detonation. The only way to become proficient with this feature is to provide MAAWS teams with HE rounds to train with. The proposed Standards in Training Commission (STRAC) allocations in this article recommend two HE rounds per year for gunners to train with.

Unlike the M3, the M3A1 also has a built-in fire control unit that can connect the FCS13-RE with the rounds loaded in the tube, allowing gunners to employ advanced munitions like the improved HE 441E on airburst mode. The older HE 441D model requires assistant gunners (AGs) to manually set the nose cone of the round to explode at the selected distance and also discharges steel balls on either point detonation or airburst (as opted by the AG) up to 1,200 meters away.

The improved High Explosive (HE) 441E round fires metal spheres at point detonation or airburst with an improved spread pattern than the original HE 441D. The M3A1 adds a fire control unit to the tube that allows the FCS-13 to digitally program when the round explodes on airburst instead of AGs manually rotating the nose cone of the older HE 441D. (Photo courtesy of PEO Soldier)



Soldiers conduct night training using the M3A1's sub-caliber adapter. (Photo by CPT Josh Crossman)

The new “E” variant maximizes muzzle velocity to extend its range of a greater payload of metal spheres that improves the spread pattern upon impact or airburst.

Units with the original M3 should only receive HE 441D rounds since the original M3 launchers do not have a fire control unit to add digital instructions to the loaded munition. As the U.S. Army acquires the new HE 441E round, IBCTs should receive a minimal amount of these rounds to train with — to appreciate the effects of the munition, employ it under both day and night conditions, and see how the FCS13-RE adds the airburst option for the 441E round only once the tube detects that variant in the launcher. Gunners cannot even practice selecting the airburst option in the menu controls until the M3A1’s fire control unit reads the round in the tube. So dry training or TP rounds do not allow gunners to familiarize themselves with the steps to employ the HE 441E on airburst mode.

Necessary STRAC Modifications

The U.S. Army’s training strategy and qualification approach for the M3A1 does not build sufficient proficiency and experience with the MAAWS. Likewise, the STRAC needs critical, but *highly cost efficient*, changes to support a proper training progression that lets M3A1 teams **fire both day and night** at **different distances** against **static** and **moving** targets.

The most important training round to build proficiency is the 7.62mm SCA. The SCA is designed to fire a three-part munition system including a unique (low-grain) 7.62mm tracer round, a primer, and a backblast simulator. The backblast simulator is not recommended for use because it doesn’t accurately represent the major backblast effect of the recoilless rifle but does foul the system.[3] The SCA does not require the backblast simulator so units only use the 7.62mm tracer round and primer when training. Eliminating the backblast simulator saves money to purchase the two essential components of the SCA: the tracer round and primer.

Figure 3 — The 7.62mm Sub-Caliber Adapter (SCA)

The SCA is built for a three-part munition system including a unique (low-grain) 7.62mm tracer round, a primer, and a backblast simulator. The backblast simulator (crossed out on below image) is not necessary or valuable for training. It is advised units only use the 7.62mm tracer round and primer. (Graphic courtesy of author)

The current STRAC allocates several sub-caliber rounds and a TPT round per M3/M3A1 team for “qualification.” This is a misleading characterization of weapon proficiency. The training strategy borrows from the training strategy of the AT4 using 9mm sub-caliber tracers. But the MAAWS is a

Figure 4 — Proposed STRAC for M3A1

This table proposes critical but cost-effective updates; it expands the allocation of 7.62mm sub-caliber rounds and primers but removes all allocations of the L612 backblast simulator. It also designates where gunners/AGs each practice/qualify with sub-caliber rounds and when they train as a team for other engagements. (Graphic courtesy of author)

Recommended STRAC
M3A1 MAAWS with FCS

Event	Type	DODIC	Attribute	Qualifier	Frequency AC	Frequency Strategy
Fire Control System (Primary Sight) Training						
Practice Day	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	2	10
Practice Day	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	2	10
Practice Night	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	2	10
Practice Night	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	2	10
Qualification Day	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	2	10
Qualification Day	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	2	10
Qualification Night	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	2	10
Qualification Night	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	2	10
Practice Day - Full Caliber	TPT	CA10	Rifle Recoilless: 84MM (MAAWS)	Team	2	1
Practice Night - Full Caliber	TPT	CA10	Rifle Recoilless: 84MM (MAAWS)	Team	2	1
Practice Day (Air Burst)	HE-441 (D or E)		Rifle Recoilless: 84MM (MAAWS)	Team	1	2
Backup Reflex Sight Familiarization Training						
Familiarization Day - Backup Reflex Sight	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	1	5
Familiarization Day - Backup Reflex Sight	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	1	5
Familiarization Night - Backup Reflex Sight	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Gunner	1	5
Familiarization Night - Backup Reflex Sight	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Assistant Gunner	1	5
Team Sustainment Training						
Day Static - Sustainment	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Team	1	10
Day Movers - Sustainment	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Team	1	10
Night Static - Sustainment	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Team	1	10
Night Movers - Sustainment	7.62MM Sub-Cal w/ Primer	A254 w/ L498	Rifle Recoilless: 84MM (MAAWS)	Team	1	10
Day - Sustainment Full Caliber	TPT	CA10	Rifle Recoilless: 84MM (MAAWS)	Team	1	3
Night - Sustainment Full Caliber	TPT	CA10	Rifle Recoilless: 84MM (MAAWS)	Team	1	3

Total Rounds (Per Year / Per M3A1 System)

DODIC	MUNITION DESCRIPTION	QTY
A254 L498	7.62mm sub-caliber tracer round Primer necessary to fire sub-cal round in sub-cal adapter (SCA)	220
CA10	Full caliber Training Practice round of the HEDP munition	10
HE-411 (D or E)	High Explosive munition capable of either point-det or air burst	2

crew-served weapon system that has both primary and backup sights. The current STRAC for the MAAWS is equivalent to giving a M240 machine-gun team a 150-round belt of ammunition a year to qualify and train with during live-fire exercises (LFXs). MAAWS teams need to practice and *then qualify* in four different firing positions (standing, kneeling, sitting, and prone) at various distances (200-700 meters for training rounds), under both day and night conditions. Currently, there are no allocations for night qualification or practice iterations. There are also no designated rounds for AGs to qualify as alternate gunners. If they are to shoot the system, they need to take from the gunner's sparse allocation. There are also no rounds allocated for the BRS that requires several manual inputs.

A minimum number of rounds to train a gunner and AG (as the alternate gunner) to engage the variety of target scenarios at extending distances in different firing positions would be 10 engagements in a firing table, first through a practice iteration followed by a qualification iteration.

Example firing scenarios:
Position: Standing, Kneeling, Sitting, Prone
Distance: 200m, 300m, 400m, 600m, 700m
Target: Bunker, Tank, Truck, Window
Static: Bunker, Armored Personnel Carrier (APC), Tank, Window
Moving: APC, Tank
Conditions: Day and Night

These practice and qualification firing tables need to be repeated at night by both gunners and AGs. Training with sub-caliber rounds alone would not give teams sufficient familiarity with the sensation of firing a full caliber round or experience with the employment of airburst HE rounds. Therefore, the training strategy needs to include a minimal number of TPT and HE rounds to give teams familiarity with the actual effects of the MAAWS.

The FCS13-RE is the primary sight of the M3A1, but crews also need to be familiar with the BRS. A minimum of five additional sub-caliber rounds would allow for this under day and night conditions.

Light infantry units will also want to include sustainment training for their MAAWS teams throughout a training cycle. This can include either dedicated M3A1 ranges or incorporating the weapon system in collective training events such as support by fire, platoon, and company LFXs. These training events should include both static and moving targets in day and night conditions and consist of mostly sub-caliber training rounds as well as limited opportunities to fire full caliber munitions. The full caliber ensures all members of a maneuver element have experienced the need to avoid backblast areas while firing the weapon and builds confidence in the rifle platoon's organic firepower.

Exposure to Overpressure and "BOPing Out"

Leaders and MAAWS teams need to understand the issue of overpressure exposure when firing full caliber rounds. Referred to as blast overpressure (BOP), there is a limit of rounds that gunners, AGs, and anyone within 100 meters of the MAAWS can be exposed to each day. Designated allowable number of rounds (ANOR) per day varies by munition type and firing position, but these limitations apply to anyone in proximity of the weapon (not just gunners but assistant gunners and safeties too). When team members or supervisors (e.g., lane safety) reach their limit, they "BOP out" and cannot train until their time requirements pass. The risk of concussion and permanent cognitive damage is high if personnel become overexposed to the overpressure from firing these recoilless rounds. It is up to leaders to track and strictly enforce overpressure exposure.

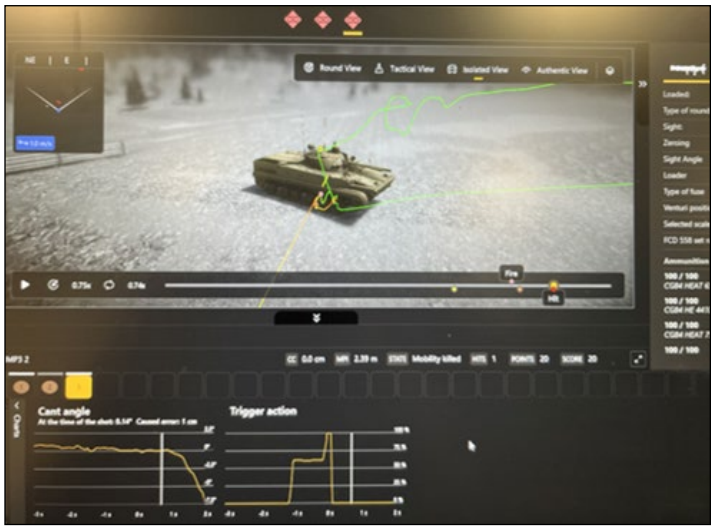
Leaders and MAAWS teams need to understand the issue of overpressure exposure when firing full caliber rounds. Referred to as blast overpressure (BOP), there is a limit of rounds that gunners, AGs, and anyone within 100 meters of the MAAWS can be exposed to each day.

There are minimal overpressure risks when firing the 7.62mm sub-caliber rounds. This makes the value of increasing the availability of these munitions even greater. Not only are they 1 percent of the cost of a full caliber munition, but the low risk to overpressure also enables teams to get repeated repetitions at firing in different distances and positions against a variety of static and moving target scenarios.

The Value of Virtual Training

Virtual training presents a powerful way to build MAAWS proficiency, similar to the variety of weapons found in indoor Engagement Skills Trainer (EST) facilities available on most installations. Although almost every other weapon is available to Soldiers in our virtual trainers (including M240, AT4, and Javelin), the U.S. Army has not yet chosen to purchase any M3 or M3A1 virtual trainers.

Each indoor MAAWS virtual training system costs approximately $170,000, but these systems offer value in several ways. They allow Soldiers unlimited repetitions at firing the system, eliminating any exposure to overpressure. If the U.S. Army acquired M3A1 virtual trainers that included the FCS13-RE, teams could experiment with all munition types, including HE 441E as well as specialty munition variants not currently available for conventional Soldiers to train with. Virtual training systems should include anti-structure, illumination, smoke, and a variety of anti-armor munitions. Ideally, every major IBCT installation with an EST would add at least one M3A1 virtual trainer. At a minimum, the U.S. Army's Heavy Weapons Leader Course at Fort Benning, GA,



At left, M3A1 gunners train using the Carl Gustaf Indoor Trainer. Above, virtual simulators provide gunners real-time feedback on their engagements without concerns of overpressure exposure or STRAC limitations. (Photos courtesy of author)

should have a M3A1 virtual trainer to help build its students' proficiency on the weapon.

Routinely Upgrading M3A1s and FCS13s

Units need to recognize that both the FCS13-RE optic and the M3A1 launcher readily receive software upgrades. This includes adding munition types to the FCS13-RE's ammunition menu and giving the right software upgrades on the launcher's fire control unit to send data from the optic to those advanced munitions loaded inside the tube. The new maintenance plan includes training to teach 91F armorers how to make software updates at the unit level.

System Proficiency to Ensure Accuracy

There are a few essential skills that leaders must emphasize before MAAWS teams begin firing. The first is recognizing the importance of following proper boresight techniques, and the second is ensuring gunners understand how to operate the FCS13's controls.

There is no need to zero the M3A1 prior to firing, but the weapon must be boresighted every time it is taken out to be fired. Boresighting requires both the gunner and AG to work as a team, so both must be proficient at the proper steps. The process is not difficult, but it can't be shortchanged. It includes inserting the included metal boresight discs in the front and back of the launcher and having the gunner and AG aim both the optic and tube at a specific object 300 meters away from the FCS.

In addition to building diligent proficiency at boresighting, MAAWS gunners must also understand all of the FCS13-RE features and needed inputs. This includes knowing how to update the powder temperature (PTEMP), the altitude, and the ambient temperature (ATEMP) prior to going on mission (or firing at the range). The most important of these three factors is the PTEMP since cold powder burns slower. ATEMP is second only to PTEMP and becomes critical for airburst distance accuracy when firing HE rounds. Once the gunner inputs these measurements prior to going on mission or training, the computer will do all of the math during an engagement.

Gunners and AGs also need to be sure they confirm the precise ammunition type and select the corresponding munition inside the FCS ammunition menu. The abbreviated names are not all self-explanatory so matching the right menu option and munition is essential. The computer does all of the complex ballistic calculations, but gunners are very much in the loop on getting the optic to present the right aimpoint.

Figure 5 — Boresighting the M3A1

Boresighting is a no-fail task by the gunner and AG to ensure accuracy. The process includes lining up metal discs inserted in the tube at a common aimpoint 300 meters away that the gunner aims at through the FCS13. (Photos courtesy of author)

As long as MAAWS teams do a proper boresight, confirm the environmental factors, and know simply how to select the appropriate munition prior to firing, the FCS13-RE will do everything for the gunner… except control trigger squeeze. The basic fundamentals of marksmanship will always apply, and that is why updating the STRAC still matters.

Conclusion

The M3A1 is in every IBCT rifle company's arms room right now, itching to get the attention it deserves. This modernized 84mm recoilless rifle, paired with its new integrated fire control system, defeats armor, illuminates, obscures, and neutralizes threats behind defilade. It provides effects on demand without needing to clear airspace for the close combat force. This article aims to help tactical leaders understand how to employ the system and help the Infantry make overdue revisions to the M3 training strategy and ammunition allocation.

The recommended STRAC adjustments proposed in this article will allow MAAWS teams to build the necessary proficiency to routinely destroy a variety of targets at distance, at night, against static and moving threats. As leaders become more familiar with the features of the system, as well as the necessary crew proficiency in operating the system, we will come to learn how essential the MAAWS is to light infantry lethality.[4]

Notes

[1] Garrett Dacko, "Army Completes Fielding of the M3A1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)," Army News Service, 16 October 2024, https://www.army.mil/article/280535/army_completes_fielding_of_the_m3a1_multi_role_anti_armor_anti_personnel_weapon_system_maaws.

[2] The upgrades to the HE 441E programmable air-burst round were funded by Headquarters Department of the Army where the Close Combat Lethality Working Group identified counter defilade as a top/high priority requirement. The new anti-personnel HE 441E round provides significant anti-personnel/counter defilade capability to the close combat force.

[3] Issues with the DODIC L612 Back Blast Charge (also known as Back Blast Simulator) were first identified during early new equipment training (NET) when the MAAWS was still only provided as a SOCOM system and current NET programs continue to advise against using L612 in training. Program Managers from Soldier Lethality at Picatinny Arsenal have renewed efforts with PM Close Combat Systems (CCS) to remove the future requirement to procure L612 DODIC for training.

[4] Go to the Unit Training Assistance Program (UTAP) CAC-enabled website for MAAWS manuals (operator and maintenance), training slide packet, computer-based training with check on learning and a number of other resources. Login with CAC to https://utap.army.mil/ then select "Browse Systems" -> "Weapons" -> "M3A1 MAAWS w/ Integrated Fire Control."

At the time this article was written, **LTC D. Max Ferguson** commanded 2nd Battalion, 14th Infantry Regiment, 2nd Brigade Combat Team, 10th Mountain Division. He is a career Infantry officer with six deployments to Iraq, Afghanistan, and West Africa with conventional and special operations units. He recently earned a PhD in public policy through the Army as an Advanced Strategic Planning and Policy Program Goodpaster Scholar.

Rangers of the 75th Ranger Regiment conduct field training on Joint Base Lewis-McChord, WA, on 20 August 2019. (Photo by SPC Garrett Shreffler)

The 11th Airborne Division:

A Unique History, Purpose, and Future

MAJ BEN TORGERSEN
CPT ALEXANDER BLOCK
CPT MAX SECHENA
CPT COLE JACOBSON
1LT BEN LOCKEY

Paratroopers assigned to 2nd Infantry Brigade Combat Team (Airborne), 11th Airborne Division head towards their next objective during Joint Pacific Multinational Readiness Center 25-02 near Fort Greely, AK, on 29 January 2025. (Photo by SPC Brandon Vasquez)

The U.S. Army reactivated the 11th Airborne Division on 6 June 2022, sending a clear message to allies and adversaries of the increased U.S. prioritization on Arctic and Indo-Pacific security. Over the past three years, the Alaska-based Arctic Angels have united under a common purpose, striving to master both Arctic warfare and expeditionary operations across the nation's priority theater — the Indo-Pacific. Uniquely positioned to rapidly respond in either region, Soldiers and Paratroopers of the Army's newest division train in every environment from the mountains of Bardufoss, Norway, to the jungles of Baturaja, Indonesia. Trained to operate on such wildly different terrain at temperatures ranging from -50 to 100 degrees, Arctic Angels are adaptable, resourceful, and gritty. As the Army's only Arctic division and its only airborne division in the Indo-Pacific, the Soldiers and Paratroopers of the 11th Airborne Division pioneer innovative solutions to some of the nation's most unique and critical security challenges.

The 11th Airborne Division's ties to the Pacific and cold weather operations are rooted in its history. Activated in 1943 at Camp Mackall, NC, the division quickly deployed to the Pacific Theater during World War II and played a critical role in the Philippines Campaign. The Angels destroyed multiple enemy divisions in the jungles of Leyte and later coordinated airborne and amphibious assaults to seize key terrain during the allied assault on Luzon. Most famously, the 11th Airborne Division liberated more than 2,000 civilians by raiding the internment camp at Los Banos, again synchronizing both airborne and amphibious operations. The division cut its teeth on cold weather operations during the Korean War, overcoming freezing temperatures and icy terrain during the Battle of Yongju. The 11th Airborne Division's current mission is to conduct "Multi-Domain Operations in the Indo-Pacific theater and the Arctic, and on order decisively defeat any adversary in extreme cold weather, mountainous, and high-latitude

environments through large-scale combat operations." This proud past carries forward to meet today's threats.

The Indo-Pacific and Arctic are increasingly contested and critical regions, and the 11th Airborne Division is uniquely positioned to accomplish U.S. National Security objectives in both. Indeed, the 2022 National Defense Strategy identifies the Indo-Pacific as the nation's priority theater, recognizing the People's Republic of China's (PRC) expansion of military capabilities and aggression in the region. With the PRC striving to achieve the military capability to subjugate Taiwan by 2027, maintaining stability and deterrence in the Indo-Pacific is an urgent U.S. security concern. Also complicating theater stability is the longstanding belligerence of the Democratic People's Republic of Korea. Similarly, the Department of Defense's Arctic Strategy, published in 2024, highlights the increasing geopolitical importance of the "High North," largely due to Russia's invasion of Ukraine, Sweden and Finland's entry into NATO, and the increasing accessibility of the region due to rising temperatures. In fact, one of the main reasons behind the 11th Airborne Division's reactivation was the nation's growing focus on Arctic security.

Alaska's strategic location, spanning both the Arctic and Pacific Oceans, enables the rapid deployment of Arctic Angels across the world's largest ocean and over the North Pole. Anchorage is unequivocally closer by air to Beijing and Pyongyang than Honolulu, and it is also nearer than New York is to Moscow. As such, the 11th Airborne Division stands ready to confront many of the nation's most acute threats in any environment through deterrence operations and, failing

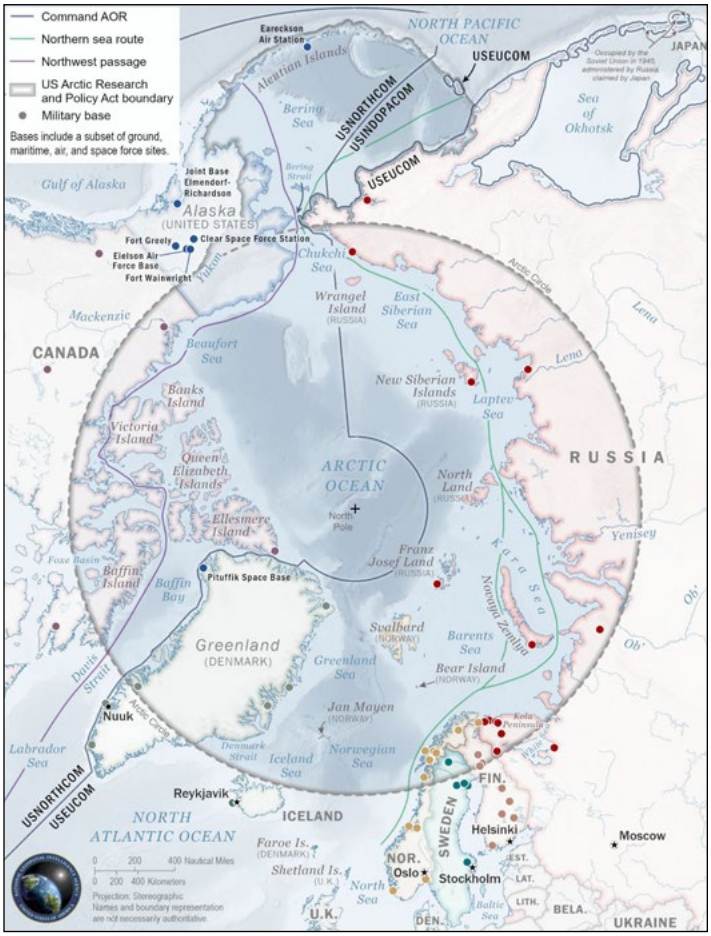


Figure 1 — Arctic Region (DoD 2024 Arctic Strategy)

At left, a paratrooper from the 11th Airborne Division dismounts a J-3 Piper Cub specially fitted with skis during cold weather training. (Photo courtesy of the 11th Airborne Division Public Affairs Office)
Below, paratroopers from 2nd Brigade, 11th Airborne Division conduct airborne operations from a C-17 Globemaster III onto Malemute Drop Zone on Joint Base Elmendorf-Richardson, AK, on 24 August 2022. (Photo by SrA Patrick Sullivan, U.S. Air Force)

that, large-scale combat. The division's strategic location, and the threats existing on its doorstep, results in a unique, dual focus for its Paratroopers and Soldiers: simultaneously enabling regional stability in the Indo-Pacific through assurance and deterrence operations while mastering Arctic warfare as the nation's only Arctic airborne division.

The 11th Airborne Division pursues these two lines of effort by deploying ready, lethal forces across the Pacific in support of Operation Pathways and yearly rotations for its brigade combat teams through the Army's newest combat training center, the Joint Pacific Multinational Readiness Center (JPMRC). A U.S. Army Pacific Command (USARPAC) strategic initiative to deter adversaries and assure allies and partners in the Indo-Pacific, Operation Pathways deploys lethal and ready U.S. forces across the Pacific to build partnerships and improve interoperability through international exercises. The 11th Airborne Division plays a central role in the operation's success, executing more than a dozen of these training events annually, ultimately contributing to regional stability. MAJ Ben Torgersen discusses 2nd Brigade, 11th Airborne Division's role in Operation Pathways in greater detail in the next article.

While Operation Pathways often takes Arctic Angels to the heat and humidity of Indonesian jungles or the Australian Outback, JPMRC tests their ability to operate in high-latitude, extreme-cold weather environments. With wind chills commonly below -50 degrees, 11th Airborne Division Paratroopers and Soldiers must adapt to the elements with innovative movement techniques and battle drills, over-the-snow mobility, extreme individual discipline and, critically, life-saving routine sustainment operations. LTC Cody Grimm and CPT Matt LaFleur's article, "Arctic Warfighting," expands on one battalion's experience at JPMRC in 2025.

When not working to ensure regional stability in the Indo-Pacific or increase Arctic warfare expertise, Arctic Angels enjoy the unparalleled opportunities that service in Alaska and the nation's only Arctic division offers. First and foremost, the 11th Airborne Division operates the Northern Warfare Training Center, the U.S. Army's premier facility for extreme cold weather and mountain warfare training. Arctic Angels can enroll in several highly desirable courses, including Cold Weather Orientation and Leaders courses and the Basic and Advanced Military Mountaineering courses. Students learn how to ski, snowshoe, traverse mountainous terrain and fight in the Arctic. Additionally, Paratroopers and Soldiers can join the Denali Expedition team and summit the highest peak in North America.

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International Exercises Highlight Division's Unique Capabilities

MAJ BEN TORGERSEN

Although 11th Airborne Division Soldiers and Paratroopers proudly wear the Arctic Tab, they remain ready to operate in any environment. The division both demonstrates and builds this readiness by participating in a wide range of international exercises across the globe. Some exercises, such as Arctic Shock, hone the Arctic Angels' expertise in frigid, high-latitude environments. Arctic Shock is a U.S.-Norwegian exercise where 11th Airborne Paratroopers executed an over-the-pole strategic airborne insertion to Europe's High North. Most exercises, however, force the division out of its cold-weather comfort zone to locales such as Chile's Atacama Desert — the world's driest desert — or the humid jungles of the Indo-Pacific. By training worldwide alongside joint, allied, and partner forces, the 11th Airborne Division promotes regional stability by demonstrating to friend and foe alike its ability to fight and win on any battlefield.

Nowhere is promoting stability more critical than the Indo-Pacific. The 2022 National Defense Strategy explicitly identifies the People's Republic of China (PRC) as the U.S.'s primary geopolitical competitor and military pacing challenge. By expanding its military influence, undermining freedom of navigation, and employing economic coercion, the PRC is actively working to undermine stability in the Indo-Pacific area of responsibility (AOR). In response, the U.S. places the highest priority on security and deterrence operations in the theater. The U.S. strategy for the Indo-Pacific emphasizes strengthening regional alliances and partnerships and posturing combat-credible forces forward in theater. As the only airborne brigade in the Indo-Pacific, the 11th's 2nd Brigade Combat Team brings a unique capability to project power into the region, deterring the PRC and assuring U.S. partners by consistently demonstrating its singular ability to rapidly respond across the AOR.

Because power projection from Alaska provides an alternative strategic avenue of approach into the

Arctic Angels conduct operations with Indian Army soldiers during Operations Pathways on 4 April 2025. (Photo courtesy of the Indian Army)

nation's priority theater, the bulk of the Spartan Brigade's international efforts support the U.S. Army Pacific Command's (USARPAC's) Operation Pathways. Designed to enhance operational readiness and demonstrate U.S. military capability and commitment to the region, Operation Pathways is a key strategic initiative that positions combat-credible forces forward in theater to fully integrate with allies and partners, enhancing and demonstrating U.S. rapid response abilities. By rotating tens of thousands of service members through the Indo-Pacific annually, Operation Pathways strengthens U.S. lines of communication and multinational relationships as well as ensures U.S. forces maintain a persistent presence forward in theater. The tactical training objectives of each exercise — ranging from executing joint forcible entry (JFE) via airborne insertion to establishing tactical communications with allies — thus produce the strategic result of regional stability through assurance and deterrence.

Operation Pathways consists of more than 40 joint and multinational exercises, and the Spartan Brigade participates in over a dozen of these exercises annually. During the summer of 2025, one infantry battalion in 2/11, the 3rd Battalion, 509th Infantry Battalion (Airborne) will participate in three Operation Pathways exercises: Talisman Sabre, Super Garuda Shield, and Ksatria Warrior. Talisman Sabre is a multilateral combined joint exercise located in Australia

An 11th Airborne Division Soldier provides security during a reconnaissance mission as part of Orient Shield at Aibano Training Area, Japan, on 21 July 2024. (Photo by SPC Nicholas Bushey)

that incorporates more than 19 partner nations. This year's exercise promises to be the largest ever, involving more than 35,000 military personnel with forces conducting airborne, amphibious, ground, air, and maritime operations. Similarly, Super Garuda Shield is expanding, growing from a bilateral U.S.-Indonesian exercise a few years ago into this summer's iteration which will include 11 nations conducting operations across the archipelago nation. During both Talisman Sabre and Super Garuda Shield, 3-509 IN (ABN) will conduct battal-

ion-level airborne operations and integrate allied and partner forces into the battalion. Ksatria Warrior, a smaller bilateral exercise between the U.S. and Indonesia, will include one rifle company, Baker Company, 3-509 IN (ABN), and focus on tactical skills exchanges and offensive operations.

Pathways planning is a yearlong endeavor. Talisman Sabre 2025's Initial Planning Conference occurred in August 2024 for a July 2025 execution. Throughout the year, division, brigade, and battalion planners attended three weeklong planning conferences across eastern Australia (initial, mid, and final) as well as each conference's corresponding site survey to assess various training areas, logistical nodes, and infrastructure for the exercise. Additionally, planners attended multiple joint air planning conferences to coordinate multiple battalion-echelon airborne JFE operations with the U.S. and partner air forces. With a total of eight conferences or site surveys throughout the year, it is common for an executing battalion to dedicate at least one planner for a week each month to intensive exercise preparation.

Building relationships across the joint and combined force, coupled with creating continuity and shared understanding between planning events, is fundamental to a successful operation. Planning events provide fantastic opportunities for planners from across the joint force and world's militaries to work closely together to solve problems and achieve shared training objectives. During Talisman Sabre's final planning conference in April, for example, members of the 11th Airborne Division; German, French and Australian armies; and U.S., Canadian, Australian, and Norwegian air forces arranged an impromptu breakout group to create and coordinate key exercise events. These planners will then continue to communicate weekly until many of them meet up face-to-face again on the drop zones or airfields of Australia.

U.S. and Indian Army Soldiers conduct mortar training during Exercise Yudh Abhyas 2024 on 19 September 2024. (Photo by 1LT Byron Nesbitt)

Talisman Sabre 2025 promises to be an extraordinary training opportunity for 3-509 IN (ABN). The battalion will build readiness through multiple iterations of mission-essential task training in unfamiliar terrain and build partnerships with joint and international forces, all while accomplishing the strategic objectives of assurance and deterrence. Throughout the exercise, 3-509 IN (ABN) will be woven into the larger exercise design, sharing battlespace with joint and combined partners to provide inputs to facilitate higher echelon training objectives. First, the battalion will demonstrate the 11th Airborne Division's unique strategic infiltration capability when it conducts an airborne operation directly from Alaska. The combined JFE operation (CJFEO) will also include a platoon of French paratroopers. The 3-509 IN (ABN) will then maneuver its organic companies, a German company, and the French platoon against an Australian armored opposing force to seize an airfield to enable further assets to arrive in theater. The battalion will then "island hop" via a second airborne CJFEO, this time alongside both German and French paratroopers several hundred miles south to seize another airfield and airland its organic equipment. After approximately two weeks of training, 3-509 IN (ABN) will return to Alaska a more capable fighting force and joint, multinational partner.

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Paratroopers from 1st Battalion, 40th Cavalry Regiment conduct weapon retention drills with members of the Indian Army's 9th Assam Regiment during Yudh Abhyas 22. (Photo by Benjamin Wilson)

Arctic Warfighting: *Lessons from JPMRC 25-02*

LTC CODY GRIMM
CPT MATTHEW LAFLEUR

The Joint Pacific Multinational Readiness Center (JPMRC) — the U.S. Army's newest combat training center (CTC) — is how the U.S. Army Pacific enhances warfighting and builds readiness in its unique environments. For the 25th Infantry Division, that means the tropical climate of the Pacific, and for the 11th Airborne Division (Arctic), that means the extreme cold weather and high-latitude environments. Using the expansive terrain of Alaska contained within the Joint Pacific Alaska Range Complex (JPARC), the 11th Airborne Division builds readiness in its own backyard. JPARC consists of more than 1.5 million acres of available training area with more than 65,000 square miles of airspace, which is over two times the size of South Carolina.

Paratroopers in the 11th Airborne Division descend onto Malamute Drop Zone in Alaska on 11 December 2024. (Photo by Correy Mathews)

Geographically, the available training area stretches from Joint Base Elmendorf-Richardson (Anchorage) to Fort Wainwright (Fairbanks) and beyond. The division annually rotates which of its two infantry brigades serves as the rotational training unit (RTU). This allows the division to focus on building lethality across the formation while annually exercising in the coldest months of the year. If not serving as the RTU, the infantry brigade serves as the opposing force (OPFOR) and provides other backside support requirements. As JPMRC is based in Alaska, it leverages the region's harsh conditions — subzero temperatures, heavy snowfall, and mountainous terrain — to train Soldiers and multinational partners in realistic large-scale combat scenarios to not only survive but dominate in the Arctic.

Importance of Arctic Warfighting

Although the strategic interest in the Arctic and associated security may appear to be a fairly new concept — as underscored by the reactivation of the 11th Airborne Division in 2022 — the reality is there are numerous historic examples of combat in unforgiving extreme cold environments. Those examples include the Russo-Finnish war or "Winter War" in 1939-1940 and the Battle of the Chosin Reservoir in 1950 during the Korean War.

During the Winter War, the Finnish Army used their over-the-snow mobility and knowledge of the terrain to ambush and delay Russian forces until the Moscow Peace Treaty was signed on 12 March 1940 — ending the 105-day war. The Finnish Army put on a master class of guerrilla warfare tactics as they conducted decentralized operations and carefully chose less protected targets on advantageous terrain when on the offense. The Finnish Army "fought small" and used cross-country skiing or skijoring behind reindeer to move much faster around the snow-covered battlefield. This speed advantage allowed them to fight at the platoon and squad level unburdened by the extreme temperatures or the snow due to their fieldcraft and expertise. Conversely, the nearly 250,000-man Soviet Army found themselves canalized due to their dependence on vehicles to the few road networks that existed in the far eastern portion of Finland's wilderness. The Soviet Army's dependence on the road network led to a decisive defeat during the Battle of Raate Road where just 6,000 Finnish soldiers from the 9th Infantry Division were able to destroy between 4,600 and 9,000 personnel of the 146th and 25th Soviet Rifle Regiments while capturing 1,900 more through a series or coordinated flank attacks.

Similarly, the Battle of Chosin Reservoir involved U.S. Marines and United Nations (UN) forces withdrawing under pressure in subzero conditions over icy mountain passes in order to preserve combat power. This battle took place between 27 November and 13 December 1950 during one of the coldest winters of the Korean War. On 24 November, the U.S. X Corps pursued the 124th People's Volunteer Army (PVA) north from Wansun to the Chosin Reservoir as the PVA had hoped. Once UN forces were established at the reservoir, a cold front moved in from Siberia and temperatures plummeted to -36 degrees Fahrenheit (F). It was so cold that weapons began to freeze, rendering them useless, and medical supplies such as plasma and morphine became degraded, if not unusable, once frozen. The PVA 9th Corps entered the theater and massed on the reservoir, forcing the withdrawal of UN forces over some of

11th Airborne Soldiers must master the infantry battle drills with the added challenges of harsh terrain and unforgiving weather. (Photo by SrA Patrick Sullivan, U.S. Air Force)

Marines of the 5th and 7th Regiments, who hurled back a surprise onslaught by three Chinese communist divisions, wait to withdraw following the Battle of Chosin Reservoir. (National Archives photo/SGT F. C. Kerr)

the harshest terrain and most extreme weather the war had seen. Soldiers were without food, ammunition, or proper medical supplies for weeks as they were harassed by PVA forces along the single unimproved road south to eventually evacuate at Hungnam.

These cases — spanning European and Pacific theaters — demonstrate the need for Arctic expertise to succeed.

In addition to the historic examples outlined above, the Department of Defense (DoD) recently published an Arctic Strategy in 2024 that highlights the need for extreme cold weather training and Arctic warfighting readiness as critical to the department's success in future wars. Moreover, the Arctic Strategy emphasizes the need to conduct Arctic warfighting alongside our allies and partners to build capacity with Pacific and European armies. Arctic Strategy line of effort (LOE) number three states the DoD will: "Exercise presence in the Arctic by training both independently and alongside Allies and partners to demonstrate interoperability and credible joint capabilities while supporting homeland defense and global power projection operations." This aligns with the 11th Airborne Division's annual JPMRC rotations and participation in Operation Pathways, reinforcing its strategic relevance.

Building Arctic Expertise

Every Soldier in the 11th Airborne Division completes the Cold Weather Indoctrination Course (CWIC) annually to build a baseline of Arctic fundamentals. The one-week course covers terrain, cold weather risks, Soldier-issued clothing, and unit-provided equipment. Specifically, it includes the wear and proper use of Extreme Cold Weather Clothing System (ECWCS), sleep systems, 10-person Arctic tent groups called "ahkios," snowshoes, skis, and subzero risks like frostbite and hypothermia. During CWIC, Soldiers are introduced to the ahkio tent, which will be their lifeline throughout JPMRC as well as other cold weather training events. The ahkio consists of a canvas tent with cover capable of housing 10 Soldiers and an internal stove system that can burn solid and a variety of gas fuel types on a sled equipped with multiple harnesses to allow Soldiers to traverse the large shelter and its accessories across the battlefield. Soldiers learn to use arctic space heaters, set up tents, build snow shelters, and fight while on skis and snowshoes in addition to the importance of how nutrition and hydration differ in subzero temperatures. The course also explores Arctic terrain and historical warfare lessons to ensure Soldiers understand environmental and operational demands. The culminating event for the course is a 5-kilometer movement in snowshoes. This sets the foundation for Arctic warfighting that squads and platoons can build upon during subsequent winter training.

In addition to its home-station training, the 11th Airborne Division is fortunate to have the Northern Warfare Training Center (NWTC). NWTC — located in Black Rapids, AK — further develops Arctic and mountain expertise. In winter, NWTC offers Cold Weather Leader and Orientation courses (CWLC/CWOC), equipping leaders with the necessary skills to train their units in cold weather environments. In summer, it shifts to mountaineering, running multiple iterations of Basic and Advanced Military Mountaineering courses. NWTC often hosts additional courses tailored to unit demands, using their Arctic and mountaineering experts in its unique training area. These programs ensure leaders integrate Arctic and mountaineering tactics into unit training plans, enhancing division-wide Arctic readiness.

11th Airborne Division Soldiers use skis and snowshoes to gain mobility across snow-covered terrain. (Photo by SSG Kimberley Glazier)

Paratroopers with the 2nd Brigade Combat Team, 11th Airborne Division drive snowmobiles carrying supplies during Joint Pacific Multinational Readiness Center 25-02. (Photo by PFC Makenna Tilton)

JPMRC 25-02 Overview

During JPMRC 25-02 — which occurred in January 2025 — temperatures ranged from 40 to -37 degrees F. The 2nd Brigade Combat Team, 11th Airborne Division (Arctic) served as the RTU and entered the frozen arena of Donnelly Training Area (DTA) through numerous means: joint forcible entry (JFE), air assault, and ground assault. The JFE consisted of 13x C-17s and C-130s that dropped more than 1,000 Paratroopers and subsequently air landed 100 pieces of equipment over two drop zones. That equipment ranged from snow machines and Cold Weather All-Terrain Vehicles (CATVs) for over-snow mobility and command and control as well as fires and sustainment platforms. The air assault consisted of 400 Paratroopers and multiple snow machines capable of towing arctic sustainment (i.e., ahkios). The ground assault initiated out of Fort Wainwright and totaled more than 700 vehicles and 1,400 Soldiers. With the help of the larger joint force, the brigade massed 3,000 Paratroopers and more than 1,300 vehicles in DTA within 72 hours to fight and win against a well-trained Arctic OPFOR.

Arctic Airborne and Air Assault Operations

At the division and brigade level, Arctic airborne and air assault operations require meticulous planning and coordination to ensure success. JFE planning must not only consider the sustainment deficits inherent in any airborne operation but also the snow depth and temperature conditions in which formations will seize and expand the lodgment. Paratrooper loads — averaging 90 pounds for Arctic sustainment (gloves, layers, sleep systems, snowshoes) plus water, food, and ammunition — pose challenges at departure airfields and on the ground. To offset this, units use Container Delivery Systems (CDS) and door bundles, but Arctic sustainment minimums remain non-negotiable to mitigate cold weather injury risks. Heavy drops of ahkios and snow machines enhance mobility and warming capabilities, extending operational reach. Even routine pre-jump training in subzero conditions demands leader oversight to minimize risks, including ramp-side inspections and ruck-hanging to prevent frostbite.

Air assault operations face similar Arctic constraints. Snow depth and landing zone (LZ) selection are critical. In pick-up zones (PZs), warming shelters and arctic sustainment prevent cold weather injuries before takeoff. Moreover, the rotor wash in subzero temperatures exponentially increase the risk of cold weather injury for exposed skin. Snow machines and ahkios — loaded onto CH-47s and driven off ramps — enable rapid LZ dispersal with sustainment and mobility. Deep snow may require immediate use of snowshoes or skis, and helicopter floors require shoring to avoid damage. These adaptations ensure units reach objectives efficiently and require extensive planning and coordination between ground and aviation units. Moreover, they require numerous repetitions to get right through cold and hot load training before actual execution.

As a battalion task force within 2/11, the 3rd Battalion, 509th Infantry Battalion (Airborne) learned critical lessons in movement and maneuver, sustainment, and command and control. Offensive operations highlighted the need to balance tempo with sustainment to maintain operational reach. Defensive operations emphasized anticipatory logistics and rehearsals to withstand repeated enemy attacks in subzero temperatures. Arctic-specific challenges, such as extreme

A CH-47 Chinook helicopter from B Company, 1-52nd General Support Aviation Battalion flies through the Alaska Range with Mount McKinley in the background. (Photo by SPC Brandon Vasquez)

Weapons squads in the 11th Airborne Division face unique challenges as the M192 tripod has a tendency to sink in deep snow. This requires either preparation of the firing point to bare earth or often improvised flotation aids that keep the machine gun from sinking.
(Photo by Sgt Mitchell Johnson, U.S. Marine Corps)

cold and heavy snow, demanded specialized expertise, mirroring historical examples where sustainment determined success.

Movement and Maneuver

In the Arctic, operational reach is a dynamic metric that leadership within the battalion and companies closely manage. It takes into consideration the formation's overall combat power and a thorough look at tempo combined with the ability to sustain the formation at the forward line of own troops (FLOT). Dismounted movement in subzero temperatures and variable snowpack slows tempo significantly. Soldiers use snowshoes or skis to navigate snow, yet when wearing rucks (weighing approximately 90 pounds with critical Arctic gear) and also pulling ahkios as a squad (weighing up to 200 pounds), the speed at which a unit can move is greatly reduced. Squads set up ahkios based on temperature zones and cold exposure risks, which can lead to cold weather injuries such as hypothermia, frostbite, and trench foot — if mismanaged. Exposure times vary, with sweating in cold conditions accelerating hypothermia and cold weather injury risks. In subzero temperatures, if you stop for more than 15 minutes, it is highly likely that the unit will need to stop for hours and set up ahkios for warming shelters to mitigate cold weather injury risks and keep water from freezing. Leader involvement is critical when maneuvering in the Arctic. They must stay engaged because every Soldier has a different threshold for extreme cold weather exposure to the elements and, if mismanaged, could have life-changing impacts to the men and women under their charge.

In extreme cold weather temperatures, the battalion executed movements to contact by bounding companies in overwatch to maintain tempo and manage sustainment. One company would bound forward to locate the enemy, setting up ahkios if none are found, while another company bounds past. Platoons and squads would mirror this at smaller scales, with ski squads maintaining contact and rotating into ahkios for warming. This cycle continues until the enemy is located and destroyed through a controlled balance of tempo with cold weather risk mitigation.

Sustainment Challenges

Sustainment in the Arctic amplifies logistical demands. Water, which is critical for dismounted units, freezes in subzero

temperatures in as little as 90 minutes, which can then take upwards of multiple hours to thaw. Soldiers adapt by keeping water worn close to the body and inside their jacket to prevent freezing. Squads and platoons also place 5-gallon water cans in their ahkios that need to be monitored as well. Once resupplied, platoons must reserve space inside their 10-man tent for their water cans in order to keep them freezing. At scale, the division employs heaters for water buffalos to maintain an available water supply. Managing water intake requires constant leader oversight and accurate reporting.

While executing priorities of work during long halts, squad ahkios and tent heaters are vital for preventing Soldier cold weather injuries and keeping water from freezing. Heaters require fuel, and heater intensity levels must balance injury prevention with resource conservation. There is a constant balance that must be considered when dealing with resupply operations in the Arctic. Companies must be predictive when requesting classes of supply from battalion as the company must be light enough to maintain mobility but not so light that they don't have the necessary fuel or water to maintain combat power. This often requires platoons to cross load classes of supply in order to balance the burden of weight as well as mitigate cold weather injuries within their formations.

Nutrition requirements pose another unique challenge in the Arctic. 11th Airborne Soldiers are taught during CWIC that the calorie expenditures in extreme cold conditions are 4,600 and 3,150 calories per day for men and women, respectively, per day. Standard Meals, Ready-to-Eat (MREs) are less desirable in the extreme cold because the packaged food contains roughly eight ounces of water and will freeze. First Strike Rations are intended for 24 hours of consumption and contain snack foods that also freeze; however, they contain 2,900 calories per day, compared to an MRE that has roughly 1,300 calories per meal. The Modular Operational Ration Enhancement (MORE) contains 1,100 calories to supplement the above three options. The preferred combination is storing MORE snacks close to the body to prevent freezing (and unwanted trips to the dental clinic), paired with Meals, Cold Weather (MCWs) or "Winter MREs." These meals are comprised of dehydrated "Mountain House" meals, which average 1,450 calories per meal and require one liter of heated water — drastically increasing water intake at scale and amplifying the need for resupply. On the topic of water, Soldiers in the Arctic require between four and six liters a day. During combat operations in extreme cold conditions, each rifle squad consumes 9 gallons daily. This covers the one liter per MCW requirement. In order to offset some of this requirement, squads will melt snow using their MSR stoves once set up in their ahkios.

There is a constant balance that must be considered when dealing with resupply operations in the Arctic. Companies must be predictive when requesting classes of supply from battalion as the company must be light enough to maintain mobility but not so light that they don't have the necessary fuel or water to maintain combat power.

Vehicle sustainment also presents challenges. With respect to troop transport, vehicles must have a working Arctic Heater in the rear of the vehicle in order to prevent passengers from receiving cold weather injuries such as frostbite or hypothermia. Soldiers use their closed-cell foam sleeping pads as seat covers to insulate and protect themselves from contact frostbite with metal seats found in most military vehicles. Vehicles in the 11th Airborne Division have oil pan heaters, block heaters, and snow chains installed for winter use; however, these upgrades are only beneficial when in garrison where you have the opportunity to plug the vehicle in. In austere conditions similar to those faced at JPMRC, turning off your vehicle can cause the battery to die or the fluids in the oil pan or transmission case to freeze. To overcome this challenge, vehicles ran continuously for the duration of JPMRC — decreasing the formation's audible signature and increasing fuel requirements. Snow machines and CATVs deliver supplies to the FLOT, but

11th Airborne Division Soldiers utilize 10-man ahkio groups under the Northern Lights during a recent exercise. (Photo courtesy of the 11th Airborne Division Public Affairs Office)

anticipating logistical needs is critical for maintaining tempo and operational reach. To maximize tempo during the battalion's final pursuit, ahkios were consolidated and loaded onto LMTVs to be moved as far forward as possible while the mounted heavy weapons company pulled security. This allowed the rifle companies to move unencumbered by the weight of their ahkios and served as a creative solution to increase the distance and speed of the battalion's over-the-snow movement. Due to the formation's enhanced speed, the battalion surprised the enemy during their consolidation and reorganization.

An 11th Airborne Division Soldier conducts operations in the snow during Joint Pacific Multinational Readiness Center 25-02 in Alaska on 29 January 2025. (Photo by SPC Brandon Vasquez)

Additional Arctic Considerations

Defense

In the defense, food, water, and fuel are easier to manage — relative to the offense — at the tactical level. At scale, it's critical to get engineer assets to the FLOT as quickly as possible. Obviously, determining the obstacles and associated priorities matter, but how they are emplaced is unique, especially with the snow depth, permafrost, mobility corridors, and subzero temperatures. The same cold weather exposure times and sustainment problems are applied in the defense, but engineer assets become the main effort. Ahkios are established and camouflaged behind battle positions, and fighting position construction begins immediately. Ski squads are dispatched to conduct security patrols and establish a network of false trails. Track discipline is paramount in the defense as to provide early warning. Snow machines and CATVs help with Class IV movement to obstacle locations, but snow depth impacts where blade assets can get to. Unique to the Arctic is the use of snow berms and obstacles to help build defensive lines and battle position integration.

Medical Considerations

Arctic medical operations demand specialized approaches. Casualty care on objectives requires rapid stabilization in extreme cold to prevent hypothermia. The ability to execute intravenous care requires a warming shelter as a needle itself could cause frost bite. Moreover, saline bags can freeze and require similar warming shelters for storage and use. Casualty evacuation (CASEVAC) and medical evacuation (MEDEVAC) methods must account for snow-covered terrain and subzero temperatures. Snow machines and CATVs facilitate rapid casualty transport while warming shelters at aid stations maintain patient stability.

Command and Control

Subzero temperatures significantly reduce battery life (up to 80 percent), complicating command and control. Poor battery management at the company level has drastic impacts on brigade-level coordination. Entire companies will become combat ineffective simply due to the extreme cold weather greatly degrading their ability to coordinate with adjacent units or their higher headquarters. The effects of the cold on batteries require formations to use communication windows, a common technique during reconnaissance, in order to reduce the required number of radios to be on at any given time. As a battalion expands the FLOT, the Integrated Tactical Network (ITN) relies on retransmission systems to expand the mesh network. With many radios cycled off to preserve battery life across a prolonged engagement, formations constantly fight degraded communication capabilities. With the help of Army Research Labs and Montana Technological University, Ghost retransmissions systems have been upgraded into Arctic-capable "Phantom" systems to extend the network while reducing the cold weather impact on batteries. These insulated, battery-powered systems operate without additional security or management for up to three days depending on the temperature.

Conclusion

JPMRC 25-02 revealed that Arctic warfare demands innovation and adaptation. From individual Soldier discipline and fieldcraft to battalion-level sustainment, the 11th Airborne Division's lessons underscore the importance of balancing tempo, sustainment, and combat power. The great equalizer of a potential conflict in the Arctic or high-latitude environment will undoubtedly be the conditions described throughout. The lessons learned at Chosin Reservoir and during the Russo-Finnish war still apply today, and conversely no amount of modern gear or cutting-edge tech can completely solve the problem sets unique to the Arctic. It takes a unique caste of Soldier to fight and win in the "High North." As the 11th Airborne Division modernizes and refines its Arctic modified table of organization and equipment, it stands ready to jump, air assault, and win in the harshest environments, ensuring dominance on any modern Arctic battlefield.

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Long-Range Maritime Air Assault Operations in the Indo-Pacific Theater

CSM GARRETT S. O'KEEFE
CSM JASON B. CHASE

Indo-Pacific Theater Operations

Operational reach refers to the distance and duration a military force can effectively project its capabilities. During a long-range maritime air assault, this concept is directly tied to the limitations of basing and lines of operation. The tyranny of distance across the Indo-Pacific region presents a significant challenge, one that can only be mitigated by higher headquarters providing a well-thought-out support and sustainment plan. Brigade and battalion-level units assume significant risk when conducting long-range maritime air assaults, especially when the operation occurs hundreds of miles away from support.

It is unrealistic to expect a brigade or battalion to support and sustain itself from such a distance without external assistance. This risk extends to medical support, where a battalion's medical platoon and physician's assistant are insufficient for managing casualties over long distances. Dedicated air medical evacuation (MEDEVAC) support must be planned and on standby for immediate response. Additionally, joint capabilities, such as U.S. Navy vessels with onboard surgical departments, are critical to mitigating the distance in the event of medical emergencies.

Similarly, naval gunfire support is invaluable for prepping objectives and providing fires that enable ground forces to maneuver freely. The phrase "We will never fight alone again" should be taken seriously, particularly in the context of long-range maritime air assault operations. Units must plan, resource, and train for these types of air assaults.

Air Assault Operations

During a Joint Pacific Multinational Readiness Center training rotation, the 1st Battalion, 27th Infantry Regiment "Wolfhounds" practiced one of the most challenging joint operations in our modern strategic catalog: a long-range maritime air assault. During this exercise, the Wolfhounds conducted operations over the north Pacific Ocean, flying from Dillingham Army Airfield on the northern shore of Oahu to Pohakuloa Training Area on the island of Hawaii — more than 200 miles from their higher headquarters. A basic air assault operation is a military mission in which ground forces utilize rotary-wing aircraft and their mobility to combine all available firepower and maneuver assets under a single ground force commander, known as the air assault task force commander. The goal is to enable the commander to envelop the enemy and gain a battlefield advantage by seizing and securing key terrain.

For light infantry units, specifically those assigned to the Indo-Pacific theater, mastering the planning and execution of air assault operations is essential. The ability to rapidly move assault forces across a dynamic battlefield can be the decisive factor in determining victory or defeat. Now, consider the added complexity of conducting an air assault over the Pacific, a vast, unforgiving body of water.

Soldiers from the 25th Infantry Division conduct sling-load operations during training in September 2024. (Photo by 1LT Noah Kagan)

Military Maritime Forces and Long-Range Maritime Air Assault

Military maritime forces are defined as those that operate on, under, or above the sea to gain or exploit command of the sea, achieve sea control, deny the sea, and/or project power from the sea. The Wolfhounds' mission was to execute a 400-to-500-Soldier long-range maritime air assault, a complex operation. The likelihood of conducting such an assault is real in the Indo-Pacific region, which consists of numerous island chain countries. Such terrain demands combined and joint coordination to achieve success across all domains: land, maritime, air, space, and cyberspace.

The challenges from the get-go were significant, particularly in determining the minimal force required to achieve fire superiority and secure the objective. Planning factors, such as the tasks of organizing maneuver, fires, medical support, and sustainment, had to be balanced, with difficult decisions being made on the risk to mission and force.

Ultimately, the number of rotary-wing aircraft available dictated the task organization, influencing how combat power would be delivered due to the limited seating capacity of the aircraft to the helicopter landing zones. The decision was made to deploy two infantry companies, the dismounted command and control node, and a small attachment of medical personnel to provide coverage. A long-range maritime air assault inherently adds friction to an already complex mission set due to the distance covered and the isolation of the unit conducting the air assault. When adding in the challenges of outlining which headquarters owns specific planning tasks, all planning and coordination must be clearly briefed and rehearsed at echelon to minimize friction.

Friction During the Air Assault Planning Process and Rehearsals

Planning for air assaults requires collaborative and parallel planning and the allotment of additional time for executing units to continue to rehearse and refine the ground combat plan, culminating in the development of a detailed plan to ensure a successful operation. Initially, 1-27 IN began deliberate planning, attached a liaison officer, and coordinated directly with their aviation counterparts. This flattened the communication and planning process with the assumption that the battalion commander would act as the air assault task force commander. The battalion then formed a plan, issued guidance, and initiated the mission execution timeline.

After initial planning, a decision was made to consolidate responsibilities back to the brigade staff, which led to confusion and friction with planning and rehearsals. This caused an unnecessary duplication of effort (having to repeat coordination meetings and rehearsals between the ground unit and the air assets). In an already compressed planning environment, this wasted precious time and energy.

Ultimately, this was resolved by correcting communication gaps; critical leaders ensured that all stakeholders were on the same page and committed to not repeating the error.

One key area of preparation that enhances our flexibility during a long-range maritime air assault mission is ensuring that Soldiers and alternate aircraft load plans are thought out and rehearsed.

In the end, the brigade led the overall planning, air mission coordination, and execution, while the battalion focused on its ground tactical plan. The brigade then tasked the Wolfhounds with running pick-up zone rehearsals, which due to the rapid shift in duties, further delayed critical rehearsals needed for the ground tactical plan.

We also soon experienced that even the most well-developed plans are vulnerable to the unknown. As the saying goes, Murphy's law can and will strike at the most inconvenient moments.

The Unknown to the Unknown

Conducting a long-range maritime air assault brings many unknowns. Staffs make assumptions based on intelligence reports and past experiences, yet they may not have vital data to make the soundest decisions. Assumptions provide commanders with a general understanding of the situation, but they are not foolproof.

The Army cannot plan for every eventuality, but we must be prepared to respond to unexpected events with agility and expertise. One key area of preparation that enhances our flexibility during a long-range maritime air assault mission is ensuring that Soldiers and alternate aircraft load plans are thought out and rehearsed. This ensures that combat power reaches the objective at the right moment.

Once 1-27 IN was finally in the air, Murphy reared his ugly head. One incident during the operation starkly illustrated the unpredictability of such missions: Thirty minutes into a two-hour flight, the helicopter carrying the battalion commander had to divert due to an emergency with its partner aircraft. Both helicopters diverted from their planned air assault corridor and landed at the nearest airfield.

The pilot's emergency decision saved lives and preserved equipment; without a doubt, it was the right choice. However, it also resulted in separating the command-and-control node that oversees and manages the entire operation from the intended air assault objective, delaying the ground commander by hours. The battalion had not considered the "what-ifs" or contingencies for aircraft malfunctions while enroute to the objective, a foreseeable and moderately probable circumstance.

But as reliable Soldiers always do, they adapted and overcame to get the job done! Subordinate company commanders, already in position, adjusted the plan, and word passed between aircraft that a subordinate commander would

assume command in the interim. Eventually, the battalion commander moved to an alternate landing zone where he resumed command of the already initiated attack.

Despite the setback, the operation succeeded due to the flexibility and initiative of subordinate leaders who fully understood the commander's intent and executed the mission violently and effectively.

Conclusion

While air assault operations are inherently challenging, conducting a long-range maritime air assault significantly amplifies the need for meticulous planning at all levels. The friction and confusion experienced during this long-range maritime air assault became frustrating at multiple echelons; quickly identifying which unit at echelon owns what specific responsibility will significantly reduce friction and confusion. The battalion should have been allowed to continue to refine and complete the plan independently; this would have streamlined and simplified the planning process.

By failing to think through every problem set, we didn't allow subordinate commanders to take appropriate action when the unexpected happened. War game, war game, war game every phase of the operation. Echelons above brigade must recognize the importance of such operations and provide the necessary support and sustainment that only they can offer. Having the air assault unit directly report to its higher headquarters would have made coordinating and receiving the appropriate echelons of support so much more effective. Requiring a unit to report through multiple levels of command slowed battlefield effects and forced the battalion to rely solely on its internal mortars and attached 105mm artillery.

Having the division as the echelon of action requires fast and flat communications directly to the headquarters that owns the assets which impact the battlefield and turns the fight in favor of friendly forces.

Conducting a long-range maritime air assault is a mission uniquely suited to the Indo-Pacific region, where vast distances and island chains create distinct challenges and opportunities. There were many lessons learned at echelon during this JMPRC rotation, especially regarding training for long-range maritime air assaults. Units assigned to the Indo-Pacific region must train for this type of strategically impactful mission consistently and build proficiency.

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Soldiers assigned to the 25th Combat Aviation Brigade, 25th Infantry Division land a CH-47 during an air assault operation at Fort Magsaysay, Philippines, on 1 June 2024. (Photo by SPC Carleeann Smiddy)

Partnership in the Pacific:

Improving Interoperability and Increasing Readiness

CPT LUIS ZAMORA

Since its founding, the United States has established strong military alliances with partners worldwide. These partnerships are vital to maintaining strategic alliances and mutual trust in the Indo-Pacific area of operations (AO). During a recent Joint Pacific Multinational Readiness Center (JPMRC) rotation, the 25th Infantry Division's 2nd Light Brigade Combat Team (Provisional) — 2LBCT(P) — collaborated with the Singapore Armed Forces (SAF) to strengthen its partnership, improve interoperability, and increase warfighter readiness while validating the Army's Transformation in Contact (TiC) directives.

Initial Engagement

Last summer, the SAF sent a delegation to Schofield Barracks, HI, to meet with members of 2LBCT(P) in preparation for the JPMRC rotation. During this engagement, the SAF outlined their training objectives while 2LBCT(P) Soldiers showcased their maneuver, indirect fire, and unmanned aerial systems (UAS) capabilities.

In the fall, a battalion within 2LBCT(P) received confirmation that the SAF would operate under its operational control during JPMRC. This decision enabled that battalion to grow and learn alongside the SAF, ensuring both units could fully leverage their respective capabilities. Leveraging the SAF to the battalion enabled the brigade staff to operate unimpeded throughout the exercise.

Members of the Singapore Armed Forces delegation receive a brief on unmanned aerial system capabilities. (Photos courtesy of author)

SAF Capabilities/Limitations

Later that fall, the SAF deployed personnel including observer controller/trainers (OC/Ts) and their S-4 to Schofield Barracks, demonstrating their commitment to training. Although the SAF did not bring mobility assets or anti-tank (AT) weapons, they provided a robust package consisting of two organic platoons and several machine guns that added tremendous value throughout the exercise.

The battalion partnered the SAF personnel with each rifle company; this collaboration enhanced our collective capabilities, cultivated greater emotional intelligence among the forces, and improved interoperability. The SAF's integration did not hinder the battalion's TiC validation; rather, it demonstrated how to collaborate more effectively and allowed the battalion to incorporate new equipment and technological advancements in support of their efforts.

Company 1 (Attack)

The SAF partnered with the first rifle company at the start of the JPMRC rotation. During this phase, the SAF led the initial air assault infiltration as part of a shaping operation for the battalion. This operation was critical in setting the stage for subsequent missions. Towards the end, the company used the SAF as the decisive operation for its attack to seize mission. The SAF executed the mission effectively, focusing on thorough mission planning and adhering to basic infantry tactics. While the SAF successfully integrated and added value to the company, the unit identified two key areas for improvement in future collaborations with the SAF: breaching procedures and call-for-fire procedures. The company recognized the need to rehearse these concepts more thoroughly with its partner forces, as a lack of shared understanding had created challenges during the operation.

Company 2 (Attack)

During a subsequent phase of JPMRC, the SAF integrated with another rifle company and conducted an attack to seize mission. Immediately after the battalion combined arms rehearsal (CAR), the company commander directed all SAF squad

leaders to meet and review basic infantry doctrine. This allowed the company and the SAF to establish a shared understanding while building mutual trust. Simultaneously, platoon leaders began troop leading procedures (TLPs) and engaged in parallel planning with the SAF.

The unit's task organization consisted of two assault elements led by the SAF and a support-by-fire element commanded by the company commander. To facilitate command and control, the company assigned its executive officer to the SAF. The commander and the fire support officer remained with a platoon and the SAF's weapons squad. This arrangement allowed the commander to focus on coordinating fires while the maneuver platoons concentrated on the movement and assault. Despite the effective use of task organization and a clear common operational picture, the unit identified the need to conduct more rehearsals for actions on contact with the SAF.

A battalion commander from the 25th Infantry Division conducts a map rehearsal with his company commanders in preparation for a follow-on mission during a recent JPMRC rotation.

Company 3 (Defense)

The SAF collaborated with the final rifle company during a later phase of JPMRC. Their mission was to defend a drop zone, a key terrain feature for both enemy and U.S. forces. Like the previous companies, this unit attached one of its platoons to the SAF. The platoon leader served as the company's liaison officer (LNO) and communicated the SAF's concept of operations and requests for information (RFIs) to his commander. The two commanders then met up to synchronize their scheme of maneuvers, determining how they could best support each other in the AO.

The company identified three areas for improvement with their partnered forces: call for fire, contingency planning, and deliberate movements. Enhancing these aspects would have provided the SAF with a better understanding of our fire processes, systems, and TLPs.

Lessons Learned

The integration of the SAF in a partnership role with companies within 2LBCT(P) proved to be beneficial throughout the JPMRC rotation. The SAF augmented combat power, upheld rigorous physical fitness standards, and maneuvered quickly. However, there were noticeable limitations related to warfighting functions. For example, the SAF had limited communication capabilities, which could have been mitigated with more in-depth discussions and a primary, alternate, contingency, emergency (PACE) plan that could accommodate both units. Furthermore, the absence of various weapon systems required staff planners to meticulously evaluate the task organization for each mission and maintain flexibility.

In the context of sustainment, the SAF and U.S. forces encountered several logistical constraints. However, both units found adaptive and flexible solutions to address these challenges. It is crucial not to underestimate the importance of addressing potential logistical disparities, especially when collaborating with partner forces. Lastly, the inclusion of LNOs played a significant role in bridging the communication gap with the SAF during the exercise.

Conclusion

The partnership between 2LBCT(P) and the Singapore Armed Forces during JPMRC served as a valuable learning experience, highlighting both strengths and areas for improvement. The commitment of the SAF, as demonstrated by their active participation and integration into our operations, significantly enhanced our collective capabilities and operational effectiveness. This collaboration sets a strong precedent as we continue to learn from one another and seek opportunities to strengthen our partnership and improve interoperability.

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To Build Survivability: Troop the Line

1SG PHILIP J. PIENNETTE

It was day three of force-on-force at the Joint Readiness Training Center (JRTC) at Fort Johnson, LA. As I had anticipated, we were already collectively cold, wet, and tired. The rain had been coming down for hours, and enemy air assets had forced us to jump our combat trains command post (CTCP). Our deliberate occupation had gone well, and our initial set up of the command and control (C2) node, forward logistics element (FLE), and battalion aid station (BAS) was ahead of schedule. We disseminated priorities of work, and I began to reevaluate and refine our common operating picture (COP). My NCOs completed our security plans, and their Soldiers prepared their individual fighting positions. After regaining situational awareness of the battlespace, I went to troop the line. Suddenly, my feeling of self-assuredness and content with our progress faded. With every fighting position I spot checked, I became more frustrated. Fighting positions were not to standard, range cards (if complete) were abysmal, react to indirect fire plans had not been disseminated or understood, and uniforms were unsatisfactory. At that moment, I realized that the focus of our Leader's Time Training (LTT) had failed to adequately prepare individual Soldiers for a scenario based around prolonged large-scale combat operations (LSCO). To build survivability, leaders at echelon cannot differ in their understanding of what trooping the line means. When enforced daily, standardization across echelon will reduce confusion and build grit; doing simple things to standard means doing things the same across the formation.

Trooping the line is an essential aspect of military readiness. The concept hails from the Dorain invasion of Greece around 1200 B.C. where commanders would inspect their formations prior to a campaign, assuring their preparedness.[1] In a more modern context, pre-combat checks (PCCs) and pre-combat inspections (PCIs) achieve the same end state. In my formation, the disconnect between this modern interpretation of an ancient technique was assuring that our checklists accurately represented what our formation wore. Soldiers having everything packed in a duffel and Soldiers understanding how to wear and employ their individual kit are two entirely different matters. Furthermore, once the formation understands a standard, NCOs must enforce it. Wearing full kit for three hours is different than wearing it for 10 days. Through repetition, uncomfortable situations become comfortable. Within my formation, I saw that our failure to enforce standards during unit LTTs resulted in our Soldier's discomfort while surviving at the standard. As the enemy and environment tested our collective grit, our standards

(Photo courtesy of 1st Stryker Brigade Combat Team, 4th Infantry Division)

fell. Trooping the line begins long before the probable line of deployment. It must occur in rehearsals prior to deployment with adequate time to rectify deficiencies. Your unit's ability to fill shortages based on class of supply and timelines for receiving equipment and supplies from the supply support activity (SSA) is the point at which trooping the line begins. By codifying those standards in standard operating procedures (SOPs), we provide our subordinate leaders clarity on what right looks like with time to build good habits.

In the minds of subordinate leaders and Soldiers, standards are open to interpretation. In 2016, the Army pushed sweeping guidance authorizing the cuffing of sleeves, giving commanders increased flexibility with the uniform.[2] The key word here is commanders — any good commander, with the recommendations of the senior enlisted advisor, can change a uniform based on risk to force and mission. However, squad- and team-level leaders implemented changes to uniform for comfort while conducting operations with little thought to the risk assumed by our commander. This choice to deviate from the standard directly resulted in disease and non-battle injuries (DNBIs), causing real-world medical evacuation of multiple Soldiers due to environmental exposure to insects and poisonous plants. This highlights how enforcement of standards can reduce or worsen non-combat injuries, which historically can attrite up to 60 percent of a fighting formation in LSCO.[3] Standards must be clearly defined with a backbrief conducted at the platoon level, not just published in an SOP, so leaders at every level are empowered to exercise initiative in accordance with the commander's guidance. NCOs must brief company leadership, assuring that adequate mitigation is in place to manage the commander's assumed risk prior to deviating from published SOPs and taking liberties with uniform standards.

Standardization needs to mean doing things the same for simplicity's sake. This concept seems self-evident; however, my experience at JRTC suggests it is anything but clear. The prevailing opinion in my formation was that Soldiers should set up their kit based on their own desires so long as they meet minimal requirements. Though this belief benefited Soldiers during the global war on terrorism, I believe it is counterproductive to a LSCO fight. In World War II, the Ivy Division suffered a total of 22,454 casualties.[4] This number suggests that nearly the entire division was replaced while in contact. I can only imagine a young NCO's struggle to get a replacement in-step with their formation under those conditions. By creating standards for how Soldiers wear and employ their equipment, NCOs reduce the amount of thought and time needed to train subordinates. This allows for repetition to yield proficiency and alleviates the ambiguity in what right looks like. A well-established and rigidly enforced standard down to the individual Soldier's load will produce a more replicable and lethal force.

My company achieved so many great things while deployed to JRTC. Our BAS treated more than 800 casualties with a four percent died-of-wounds rate. Our FLE conducted six separate logistic resupplies resulting, in no forward element ever running out of Class I, III, or V. The C2 node accurately tracked forward elements aiding our main command post and provided clarity across the formation throughout complex transition periods. However, our individual Soldiers struggled to survive — the key task for all personnel in LSCO.

To build survivability, NCOs must inspect their Soldiers at every opportunity to rectify deficiencies. Enforcing standards daily will reduce misunderstanding and build good habits; simplicity dictates that NCOs enforce uniformity.

To build survivability, NCOs must inspect their Soldiers at every opportunity to rectify deficiencies. Enforcing standards daily will reduce misunderstanding and build good habits; simplicity dictates that NCOs enforce uniformity. My company's collective struggles at JRTC were a result of missed opportunities to enforce standards during LTTs. This prompted NCOs at echelon to misinterpret what right looks like and Soldiers to be uncomfortable living at the standard. This resulted in diminished warfighter capacity and non-combat-related injuries. We can overcome this at the unit level through a replicable standard that all Soldiers at echelon understand and all NCOs strictly enforce, building survivability and grit.

Notes

[1] John Franklin Daniel, Oscar Broneer, and H.T. Wade-Gery, "The Dorian Invasion: The Setting," *American Journal of Archaeology* 52/1 (January-March 1948): 107-110, https://www.jstor.org/stable/500556.

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[4] United States Holocaust Memorial Museum, "The 4th Infantry Division during World War II," n.d., https://encyclopedia.ushmm.org/content/en/article/the-4th-infantry-division.

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Installing a Play: A Framework for Platoon Live-Fire Certification

LTC THOMAS ROBERT RYAN JR.

The purpose of this article is to share an approach to using the platoon live-fire exercise (LFX) as a training event to build equal capacity across all rifle platoons. We reframed the training as "installing a play" rather than a test, with the goal of preparing all nine rifle platoons to execute a platoon attack under any conditions. This framework relies on two critical components: transparency and measurement. I outline how clear, consistent communication of expectations and timely introduction of performance measures led to a novel and effective training experience for all participants.

Transparency: A Foundation for Focus

Focus is a superpower. This adage guided our battalion's approach to achieving high levels of training proficiency across mission-essential task lists (METLs). For an airborne infantry battalion, it's vital to prioritize high-payoff tasks that account for roughly 80 percent of training requirements. Guided by mentors, we emphasized focusing leaders' time and energy on such tasks. For our battalion, these were defined by echelon:

- **Fire Team:** React to contact, break contact, single team/single room.
- **Rifle Squad:** React to contact, break contact, mechanical reduction of a simple obstacle, establish a foothold, knock out a bunker, multi-team/multi-room.
- **Rifle Platoon:** Platoon attack, establish and fight a support by fire (SBF), reduce and assault (suppress, obscure, secure, reduce and assault — SOSRA), integrate direct and indirect fires.

Upon assuming command in November 2023, we consistently emphasized these priorities in leader professional development sessions, written training guidance, and leader engagement opportunities. By July 2024, we published a warning order for the platoon LFX to focus platoons and staff on preparation and resource acquisition. The exercise was executed in November 2024, using a training area tailored to meet our objectives.

Our platoon LFX prioritized skills unique to live-fire conditions over tasks suited to situational or field training exercises (see Figure 1). Transparency in our case simply meant ensuring all Soldiers clearly understood the standards and expectations, as well as how we would measure each task, before the training was executed. Due to the Hawthorne Effect, we anticipated the platoons would adjust to the measures, but we accepted this knowing the results would be shared to encourage learning from others' performance, without the intent to rank or compare.[1] This approach resulted in a denser array of tactical tasks across a shorter distance, including seven key platoon-level events highlighted in Figure 1.

We approached the training utilizing the Eight-Step Training Model with a novel modification of Step 2: Train and

Paratroopers assigned to the 2nd Brigade Combat Team, 82nd Airborne Division conduct a live-fire exercise on 28 February 2024. (Photo by PVT Matthew Keegan)

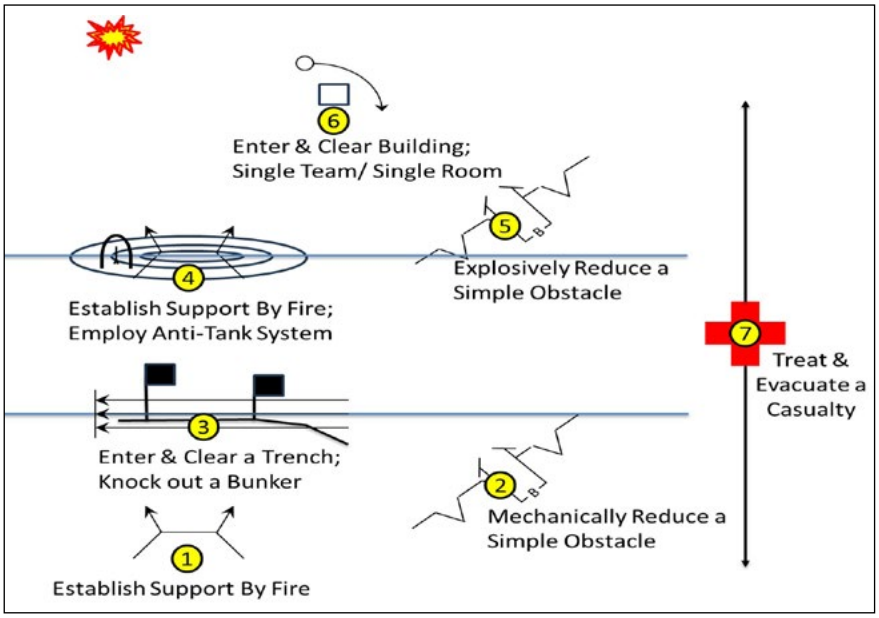

Figure 1 — Rendering of the Seven Tactical Problems that Map Back to Our Prioritized High-Payoff Tasks

Certify Leaders.[2] Reframing the "train" portion of Step 2 as "installing a play" effectively aligned expectations, ensuring that all nine rifle platoons executed their platoon attack the same way under any conditions. In sports, the installation of a play is when a coach draws a graphic of where and how he or she wants each position to act. We "drew up our play" during the two touchpoints discussed below to establish a clear precise directive for our platoon attack, akin to hand placement and body placement in a sports play:

1. **Platoon Leader and Platoon Sergeant Briefing:** A week prior, we outlined our seven tactical problems and discussed how we wanted the leadership to execute their maneuvers. During this dialogue we introduced novel metrics for evaluation for each of the tactical problems. This encouraged proactive thinking and discussion.

2. **Tactical Exercise Without Troops (TEWT):** The day before execution and guided by the battalion command team, team leaders, squad leaders, and platoon and company leadership walked through the training area to discuss each tactical problem including the constraints of their weapon systems and measurement criteria. This hands-on approach ensured clarity and fostered ownership.

Most platoon LFXs are certification events and carry the psychological burden of a test; under the "installing a play," we aimed for the training to produce units capable of executing the platoon attack, specifically at night. Our choice not to treat this as a test wasn't to avoid failure, which is a great teacher, but to ensure all Soldiers put forth their best efforts without fear of job security (which is notoriously attached to these events).[3]

Measurement: Driving Behavior and Improvement

Drawing inspiration from CSM T.J. Holland's insights on lethality metrics, "traditional metrics, while useful, fall short of capturing the full spectrum of lethality," we developed additional measures beyond standard training and evaluation outlines (TO&Es).[4] These metrics aimed to facilitate focused after action reviews (AARs) and productive discussions. Examples include (and are shown in Figure 1):

• **Establishing SBFs 1 & 2:** Time to set (minutes), shift and lift timings (minutes), target hits (count of hits), open-bolt stoppages (count of the number stoppages per open-bolt weapon system). For second SBF, we also measured the anti-tank (AT) high explosive (HE) hits (pass/fail).

• **Conducting a Mechanical Breach:** Suppress (pass/fail), obscure (pass/fail), secure (pass/fail); reduce (time from assault squad moving to establish far-side security, minutes), assault (pass/fail).

• **Clearing a Trench/Bunker:** Time from entering trench to second bunker clearance (minutes), target hits (count of hits).

• **Conducting an Explosive Breach:** Suppress (pass/fail), obscure (pass/fail), secure (pass/fail); reduce (time from assault squad moving to establish far-side security, minutes), assault (pass/fail).

• **Clearing a Building:** Assault-to-stack and stack-to-clear timings (minutes), target hits (count of hits).

• **Performing Casualty Treatment/Evacuation:** Self/buddy aid (pass/fail), time from point of injury to a 9-line (minutes), handover quality (subjective evaluation by the battalion medical platoon sergeant and readability of the Tactical Combat Casualty Care [TCCC]/Mechanism of Injury, Injuries, Signs and Symptoms, and Treatments [MIST] card).

Developing and sharing these measures of performance prior to execution guided onsite AARs, enabling quick identification of strengths and areas for improvement. During the onsite discussions we used a whiteboard with a sketch similar to Figure 1. The common understanding enabled a much quicker and focused onsite AAR discussion, enabling more time for platoons to retrain.

We displayed the culmination of our measurement efforts on a series of Powerpoint charts that captured data averages by problem set.[5] These products were used to facilitate a second consolidated AAR one month later with all platoon leadership. This AAR facilitated a deeper discussion and allowed distribution of battalion-wide and platoon-specific performance data — each platoon received a product that had their data compared to the battalion averages.

Results, Reflections on Novelty, and Outcomes

The transparency and consistent messaging yielded significant benefits, resulting in all nine rifle platoons exceed-

ing certification standards. Platoons arrived at the event prepared, allowing us to focus on challenges unique to live-fire conditions, such as integrating direct and indirect fires, managing violence during transitions, and executing SOSRA with a deeper understanding. Our "installing a play" approach mitigated test anxiety and mirrored sports team preparation — from whiteboard sessions to walk-throughs before execution on game day.

Our training scenario of seven tactical problems compelled each rifle platoon to require three rifle squads, a weapons squad, and a sapper squad. To achieve this, we were required to cross-train squads with multiple platoons within each company. By sharing the measurements of performance early and often with subordinate leaders, we standardized where leaders needed to focus their rehearsals and inspections, leading to a deeper understanding prior to execution. These additional "sets and reps" enhanced capacity and trust across the battalion.

The results from our measurements fostered meaningful discussions during AARs, with an emphasis on speed, aggression, and tactical transitions. Revisiting the training a month later with platoon leadership revealed insights on managing transitions, such as the importance of balancing speed with deliberate actions for greater advantage. One platoon sergeant's observation on the psychological impact of indirect fire highlighted the value of linking onsite and post-training AAR lessons.[6]

Conclusion

This article is meant to offer a framework for others to consider when training their units. From a commander's perspective, my biggest takeaways are:

1. **Find what your team needs and focus on them via overcommunication.** Overcommunication is a form of transparency. We overcommunicated our expectations to the team, at echelon, focusing on aspects of the attack (explained earlier), enabling subordinate leaders to build capacity anytime at echelon.

2. **Once you have shared your expectations, use them regularly.** Consistency is a form of transparency. We used our expectations to design and certify our platoons. Additionally, once we identified our measures of performance, we used them consistently to enable our training outcomes.

3. **Seek new ways to evaluate performance and effectiveness but share them with your subordinates. Measurement is more art than science.** Enabled by CSM Holland's quest to seek unique ways to understand lethality and refine the assessment of our unit's readiness, we sought novel measures of performance that would drive desired behaviors in our platoons.

4. **Installing a play as a framework for training and certifying leaders led to a more productive training event.** Removing the test anxiety by installing the attack proved effective for training nine equal platoons. Our battalion command sergeant major often states, "Practice doesn't make perfect; practice makes permanent." In the follow-up AAR, one of our platoon sergeants shared that during previous live fires, leadership was often stress-tested or overwhelmed. However, in our event, he noted that we stayed focused on our goal and, from his perspective, ensured all platoons improved their attack.

Our platoon LFX served as a seminal event to certify platoons and develop future company commanders and first sergeants. Through transparency and measurement, we built a training experience that not only prepared our platoons for combat but also provided a replicable framework for others. By consistently messaging priorities, engaging leaders, and leveraging metrics, we created a valuable model for building capacity across rifle platoons. This effort underscores the enduring principle: "Keep up the fire" as you look to train your teams and install your plays.

Notes

[1] The Hawthorne Effect suggests that participants alter their behavior simply because they are aware they are being observed.

[2] The U.S. Army's Eight-Step Training Model – Step 1: Plan the training, Step 2: Train and certify leaders, Step 3: Conduct a reconnaissance, Step 4: Issue an order for the training, Step 5: Rehearse, Step 6: Execute, Step 7: Conduct an after action review, and Step 8: Retrain.

[3] This was influenced by an article, "How Does Failure in Training Enable Learning?" by MAJ Kurt Wasilewski, which emphasizes the importance of failure as a critical component of effective training. Through the application of measured pressure and iterative, incremental progression, failure can be a tool for accelerated learning and improvement, demonstrating that the most valuable training experience often comes from enduring and overcoming "their hardest day." The article can be read at https://fieldgradeleader.themilitaryleader.com/failure-wasilewski/.

[4] CSM T.J. Holland, "Decoding Lethality: Measuring What Matters" *Military Review* Online Exclusive, October 2024, https://www.armyupress.army.mil/Journals/Military-Review/Online-Exclusive/2024-OLE/Decoding-Lethality/. This article discusses the U.S. Army's efforts to refine the assessment of military readiness by integrating a comprehensive framework for evaluating lethality. It highlights the shortcomings of traditional metrics in capturing combat effectiveness and proposes new approaches, including Project Lethality, which incorporates factors such as holistic health and fitness, combat accuracy, and tactical proficiency to better measure and enhance a Soldier's warfighting capabilities.

[5] The format we used was the idea of our battalion forward support officer, who leveraged his experience from a previous fire support coordination exercise to capture and visually depict our actions over time.

[6] The platoon sergeant mentioned that without real effects in front of an attacking platoon to demonstrate "setting conditions" the platoon tends to fall back on aspects of the attack they control — massing direct fire and speed of maneuver.

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Author's Note: *This article would not have been possible without the tireless efforts of a superb staff that possessed the mindset and willingness to travel these winding roads with me.*

Tactical Interoperability through Combined Training: A KRF Story

LTC JOSH SILVER
MAJ MATTHEW DIXON
CPT BRANDON LATHAM
CPT ZACHARY WATTERS

After days of savage fighting in the mountainous backcountry of South Korea, the two opposing brigades were battered and near exhausted. Two battalion commanders linked up just shy of the military crest in a bold effort to combine their meager forces for one last push into the valley below where an enemy strongpoint awaited. With a cacophony of gunfire to their front and urgent radio chatter coming over the net, they sought to focus and figure out how to survive long enough to snatch victory from the jaws of defeat. They hashed out a plan and settled on attacking immediately while they still had a chance. The remnants of their two formations amounted to little more than an overstrength company, but they had two tanks, and the handful of engineers survived. If friendly artillery could pin down the enemy defenders, it just might be enough to allow them to seize the final objective. As the combined arms task force maneuvered towards the enemy bunker complex, friendly air support flew overhead, providing a much-needed boon to the morale of the infantry-heavy force. Desperately needed friendly 155mm barrages began to rain down in advance of the attacking force. The two battalion commanders shared a glance, realizing they just might survive. Their ability to work together and trust in each other had made the difference.

Despite considerable commonality with the most renowned account of the Korean War, the fierce fighting described above was neither an excerpt from T.R. Fehrenbach's *This Kind of War* nor did it occur in the 1950s. It occurred in 2024 during a training event, one of the four combined rotations that occurred at the Korea Combat Training Center (KCTC) this year alone. Notably for this multinational training, only one of the battalions comprised U.S. forces. The rest — the brigade, one of the two battalions, the artillery, the tanks, the engineers, and even the air support — were all from the Republic of Korea Army (ROK-A).

This training was just one of the many challenging and rewarding combined training opportunities that the 3rd

Soldiers from the 3rd Cavalry Regiment conduct live-fire training during the unit's nine-month deployment to South Korea. (Photo courtesy of the 3rd Cavalry Regiment)

Above, Soldiers assigned to 2nd Squadron, 3rd Cavalry Regiment pull security during Decisive Action Rotation 23-09 at the National Training Center, Fort Irwin, CA, on 12 August 2023. (Photo by SSG Miguel Peña) At right, a Soldier from the Republic of Korea Army's 136th Infantry Battalion returns from a successful air assault mission during NTC Rotation 23-09 at Fort Irwin. (Photo by SGT Alex Romey)

Cavalry Regiment (CR) experienced as Korea Rotational Forces (KRF) 14, continuing a commitment of partnership and power projection established by 13 previous U.S. brigade combat teams. As with most of KRF-14's collective training events, U.S. Army and ROK-A forces worked in close partnership to advance their collective lethality. To do so, they had to address all three components of interoperability — human, procedural, and technical. Although the entire KRF-14 executed significant combined training, one squadron in particular — 2nd Squadron "Sabre" — maximized the opportunity to conduct combined training — which it did extensively with three battalions and the brigade it joined for KCTC. As a result of a purposeful pursuit of combined training, Sabre built readiness and tactical interoperability throughout their rotation.

During National Training Center (NTC) Rotation 23-09, Sabre integrated Task Force (TF) Hero and embarked upon a journey replete with valuable combined training that yielded improved human and procedural interoperability with the ROK-A. TF Hero, a specially trained and selected company-sized task force from the 136th Infantry "Hero" Battalion (ROK-A), included a robust liaison officer (LNO) package with an attached Security Force Assistance Brigade (SFAB) military advisory team (MAT). TF Hero's LNO package included LTC Sangyup Lee, the 136th IN's commander who had graduated from the School of Advanced Military Studies. At NTC, he supported TF Hero's administrative needs while also serving as 3CR's deputy commanding officer, which allowed him to help prepare the regimental staff for their future cooperation with ROK-A staff officers. One of his company commanders — CPT Lim, who was both an excellent officer and conversant in English — led TF Hero. These leaders and the MAT played a critical command and control (C2) role and enabled TF Hero's easy integration into Sabre as its fourth maneuver troop. This provided Sabre with indispensable combat power, especially during two successful seizures of large urban complexes. As a result of the MAT pre-NTC live-fire certification, TF Hero conducted an independent troop-sized live-fire exercise (LFX) and then participated in Sabre's squadron LFX. Sabre's integration of TF Hero at NTC 23-09 began an effective pairing of two organizations that became symbiotically committed to each other's success through continual combined training. As lead partner during a combat training center (CTC) rotation, it was relatively easy for Sabre to receive and integrate this ROK-A task force dedicated to being interoperable with the U.S. Army, but training extensively in a host nation as visitors would require additional coordination and support.

Upon arrival to the ROK in early 2024, Sabre welcomed two critical ROK-A attachments. CPT Jae-Oh Lee, a talented ROK-A Special Forces officer, served as the new assistant S-3. He fulfilled multiple essential staff functions (combined training event planner and coordinator, trusted advisor, and expert tactical translator) and was instrumental to the success of all of Sabre's organizational interactions with the ROK-A. Additionally, the ROK-A supplemented Sabre with 40 Korean Augmentees to [the] U.S. Army (KATUSAs) who performed various military roles from machine gunner to mechanic. Fully integrated into 3CR squadrons, senior KATUSAs served as team leaders and NCOICs as well as trusted translators. With these additional interoperability enhancers, Sabre was better postured to build readiness through continued training with ROK-A units like the 136th IN.

Sabre's interoperability with the 136th IN flowed from a deliberate effort to build upon their pre-existing NTC relationship. Lasting friendships with this battalion strengthened through a series of informal engagements, typically team-building

events and competitions followed by shared dinners. Notably, 50 ROK-A Soldiers joined Sabre as they earned their spurs together. The camaraderie and rapport that these two units built with one another enabled better understanding of each other's organization and culture. The Hero-Sabre interpersonal connections were human interoperability that proved a vital catalyst for building lethality.

Sabre's combined training with the 136th IN ranged from individual to the collective level and bolstered procedural interoperability. CPT Lim and dozens of other members of Hero received their Expert Infantryman Badge alongside Sabre troopers after a successful train-up. An early collective training event entailed attaching a Sabre rifle troop to Hero Battalion for a five-day field training exercise (FTX). Throughout the FTX, Sabre's tactical command post (TAC) co-located with the 136th IN's tactical operations center (TOC) as both headquarters honed C2 interoperability while learning each other's tactics, techniques, and procedures (TTPs). Meanwhile, the rifle troop and its platoons experimented with multiple combined task-organization variations.

Later in the rotation, Sabre would integrate a Hero platoon into its platoon LFX. During this day and night LFX, a ROK-A squad attached to most of the executing Sabre platoons, and in turn, Sabre attached a weapons squad to the 136th IN platoon for its execution of the same scenario. This success went beyond purposeful relationship building and sharing of TTPs; effective rehearsals and the dedicated use of KATUSAs as tactical interpreters proved instrumental. By Sabre's second LFX series with Hero, both units had advanced their procedural interoperability and established the trust to combine at a lower echelon for the live fire. This bred confidence and camaraderie as both units learned how to better operate and train together. Beyond building tactical acumen, the partnership with Hero paid dividends for Sabre by establishing connections, as well as a reputation, and goodwill that assisted the squadron in future combined operations with other ROK-A units.

As an experienced and interoperable KRF formation, Sabre coached the 137th Infantry Battalion (ROK-A) through a live-fire training progression to prepare it for an upcoming NTC rotation, where it would train with 1-2 Stryker Brigade Combat Team, which would replace 3CR as the KRF. In the past, an SFAB MAT had entirely fulfilled this training and advisory role; however, Sabre possessed all of the requisite skill sets to build the lethality and interoperability that the 137th IN needed for NTC. The training began with weapons qualifications and squad situational training (STX) lanes and progressed to a battalion task force-sized LFX. Upon completion of STX lanes, Sabre facilitated the 137th IN's dry-, blank- and live-iteration maneuver lanes. Sabre also fostered concurrent training with the 137th IN and enhanced their soldiers' understanding of how the U.S. Army fights at NTC. The advisory experience benefited the squadron's leaders by exposing them to the type of advisory operations normally reserved for an SFAB organization. This proved to be a unique opportunity to coach and mentor ROK-A Soldiers and continue to work through language barriers. This experience became even more valuable for Sabre when it later worked under the direct command of a ROK-A brigade.

Sabre put both its lethality and interoperability to the test during an 11-day brigade-sized force-on-force FTX at KCTC. Under the tactical control of the 7th Brigade, 6th Infantry Division (ROK-A) for KCTC 24-06, Sabre fought within the ROK-A brigade as one of its subordinate infantry battalions. Sabre's second combined CTC rotation featured a role reversal in which it was now the subordinate partner for rigorous combined training. Not only did the daunting terrain and climate of KCTC challenge the entire squadron, the immersive and demanding training also provided extensive leader development and fostered the necessary small-unit cohesion to prevail in LSCO. This tremendous developmental opportunity provided the most valuable and highest quality training that Sabre conducted during KRF-14.

Beyond the training in execution, KCTC 24-06 also built readiness for the squadron leadership through repeated iterations of combined planning. Early on, the 7th Brigade hosted Sabre for two coordination meetings that refined the KCTC operation order (OPORD) and furthered the units' relationship. The growing interoperability between the 7th Brigade and Sabre blossomed during two multi-day recons of KCTC. These doubled as collaborative planning conferences and allowed leaders to conduct terrain walks of the training grounds. The 7th Brigade commander also gave a doctrinal

U.S. and ROK-A Soldiers prepare for their next operation during Korea Combat Training Center 24-06. (Photos courtesy of the Republic of Korea Army's Facebook page)

leader professional development (LPD) session on North Korean People's Army/OPORD tactics. This proved to be one of the most valuable touchpoints while preparing for KCTC because it gave Sabre's commanders and staff insight into an enemy that few, if any, had experienced before. As a result of the deliberate effort to facilitate braided planning, Sabre went into KCTC 24-06 well postured to serve under 7th Brigade's command — provided that the squadron could facilitate the requisite interoperability in execution.

Soldiers in the 3rd Cavalry Regiment conduct operations during KCTC 24-06 in July 2024.

During KCTC 24-06, Sabre achieved interoperability within the 7th Brigade and alongside its subordinate battalions through two primary means: frequent face-to-face commander meetings and command post LNO packages. Throughout the entire operation, the commanders of both 7th Brigade and Sabre frequented one another's command posts to synchronize operations and ensure shared visualization. Sabre maintained a common operating picture with the brigade and exchanged LNO packages with both brigade headquarters and its fires battalion. Due to the ROK-A using different systems and methods to track ground and air forces, responsiveness varied between the different units in the combined task force. However, technical rehearsals and LNO utilization soon decreased the mission-processing time by 75 percent. The ROK-A provided an Army Tactical Command Information System (ATCIS) with trained operators (similar to the Joint Battle Command-Platform [JBC-P]) and a voice over internet protocol (VOIP) phone for Sabre's command post. Sabre provided an LNO package with radios and a JBC-P to the brigade CP. Overall, this C2 architecture worked well; strengths in each system overcame weaknesses in the other to enable a common operating picture. These collective efforts empowered the 7th Brigade and Sabre through expedient reception and delivery of information, resulting in deconflicted maneuver and effective indirect fires across the battlespace. Despite all the improvements with combined C2 for battalions and above, the language barrier still posed a considerable interoperability challenge at the frontlines.

Sabre had to make a concerted effort to enable its troops to communicate with adjacent ROK-A units and identify friend versus foe. Since the efforts to establish technical interoperability for communications faltered throughout much of our KRF-14 rotation, Sabre devised a plan for each troop to implement dedicated guide packages, which consisted of a fire team and an English-speaking KATUSA. Each team would meet the adjacent ROK-A companies at a designated contact point and facilitate critical reporting up to both parent headquarters. With 3CR allocating additional KATUSAs for KCTC, Sabre was able to place more into platoons to serve as interpreters. These guide packages facilitated forward passage of lines and, in a notable instance, became how a Sabre troop assumed command of a ROK-A company's remnants. Pairing the right Korean and English speakers together ensured that Sabre and the 7th Brigade could coordinate on-the-spot adjustments to the plan. The struggle with positive identification of the opposing force (OPFOR) stemmed from a limited ability to mark all friendly forces, insufficient coordination during hours of darkness, and the similarity between OPFOR and ROK-A uniforms. To prevent fratricide, Sabre's troops employed restrictive rules of engagement and cleared ground repeatedly for both direct and indirect fires. As a result, Sabre mitigated the widespread concern of U.S.-ROK-A fratricide. Despite the high degree of interoperability that Sabre displayed during its multinational combined arms training at KCTC, the squadron achieved its greatest interoperability during the subsequent 3CR combined arms live-fire exercise (CALFEX).

With a tank platoon from the 81st Tank Battalion (ROK-A) attached to each troop, the CALFEX allowed Sabre to bring together all three elements of interoperability. In a bit of irony, the first and final combined training events that

Sabre conducted in the ROK occurred with the 81st Tank. Early in the KRF-14 rotation, Sabre supported the 81st Tank's CALFEX with an enabler package that consisted of the squadron's small unmanned aerial system assets, an S-2 node, a fire support team, and two KATUSAs to facilitate the sensor-to-shooter process with the 81st Tank's mortars. The early relationship building fostered the human and procedural interoperability that later combined with technical interoperability. During the CALFEX, Sabre overcame the challenge to communications interoperability with special equipment provided by our higher headquarters. This enabled our command post and troops to communicate directly with our attached tanks. This technical interoperability proved invaluable in enabling lethal combined arms maneuver as K1 tanks provided a booming support by fire in close proximity to advancing Sabre infantry who were communicating with them. Nevertheless, for all the interoperable strides that Sabre had made, certain basic tenets still held. During the planning phase, the most valuable way to communicate the plan remained through in-person meetings and rehearsals. As Sabre's combined collective training culminated with the CALFEX, the squadron had brought all aspects of interoperability together.

Conclusion

Sabre Squadron's nine-month KRF experience was an invaluable builder of readiness and tactical interoperability. Building upon the relationships that began at NTC 23-09, the bonds between Hero and Sabre grew only stronger with team building and proficiency gained during combined collective training events. Sabre continued to forge the cycle of interoperability for future KRFs by coaching the 137th IN through a platoon and company LFX train-up to prepare them for their combined NTC rotation with KRF-15. Invaluable squadron-level collective training occurred during our KCTC rotation under the command of a ROK-A brigade. Success at KCTC required Sabre to employ all the interoperability TTPs it had already learned and innovate to establish new ones. As a result, the squadron benefited from a world-class training experience and its second combined CTC rotation in less than a year. Sabre's troops then executed a combined CALFEX that allowed them to maneuver with an embedded ROK-A tank platoon. Throughout KRF-14, 2/3 CR immensely benefited from an intensive combined training glidepath. While integrating and training alongside ROK-A allies from the squad to the squadron level, Sabre built tactical interoperability and lethality — all while helping to strengthen a critical seven-decades-old alliance.

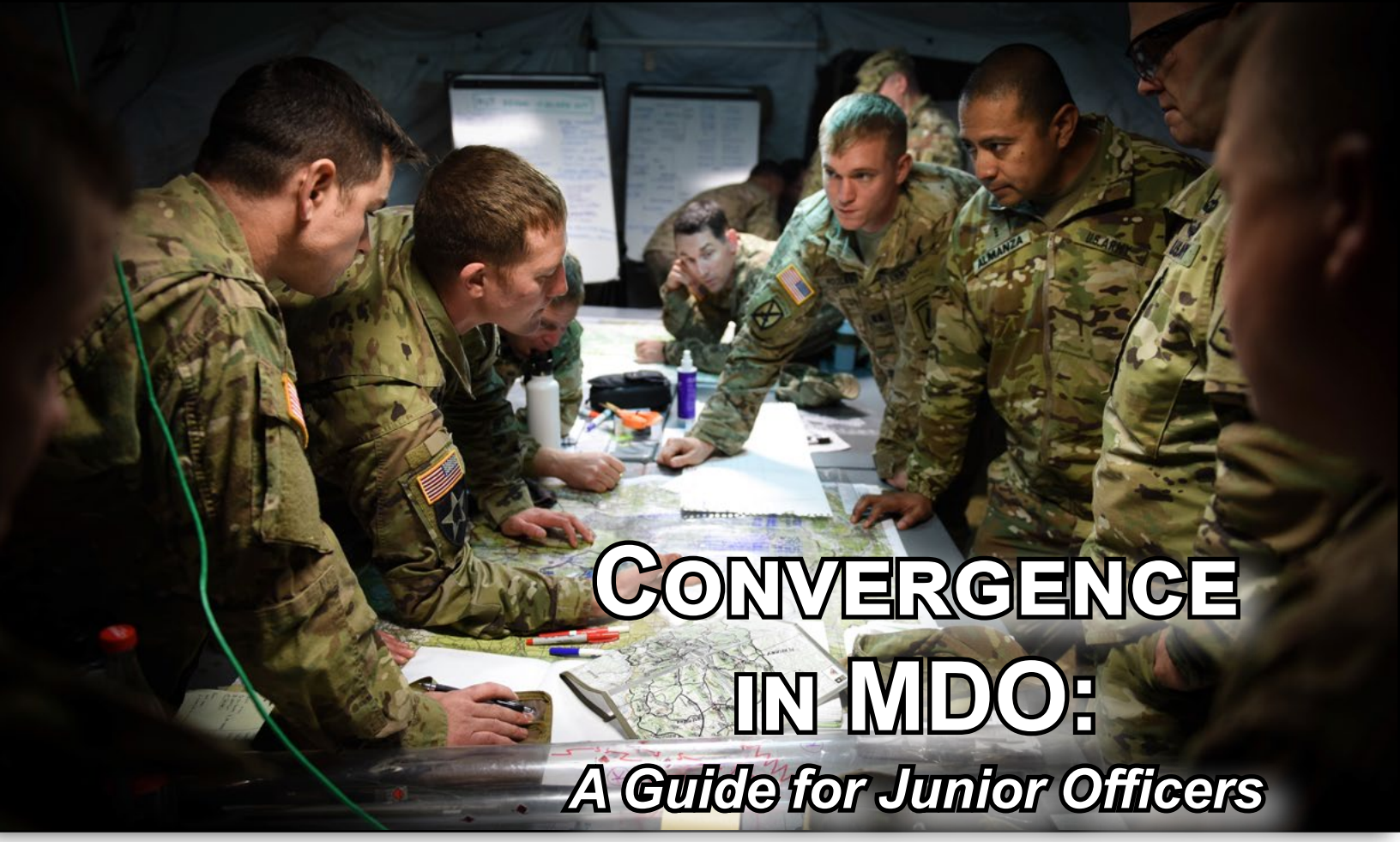
LTC Josh Silver is an Infantry officer and the former commander of 2nd Squadron "Sabre," 3rd Cavalry Regiment (CR). Prior to command, he served as an observer coach/trainer (OC/T) and later the Command and Control (C2) Chief in the Mission Command Training Program (MCTP). During that time, he helped Afghan refugees come to the United States during Operation Allies Refuge and Operation Allies Welcome. In 2020, he conducted a no-notice deployment with 1st Brigade, 82nd Airborne Division to the U.S. Central Command (CENTCOM) area of responsibility (AOR). He also taught American and Military History at the U.S. Military Academy at West Point, NY. LTC Silver has two combat deployments to Iraq and another to Afghanistan. His next assignment will be to the National Capital Region.

MAJ Matthew Dixon is an Infantry officer and the former executive officer (XO) of 2/3 CR. He previously served as a company commander and S-3 in the 3rd Security Force Assistance Brigade where he deployed to CENTCOM in support of Operation Spartan Shield. In 2019, he deployed with C Company, 1st Battalion, 87th Infantry Regiment, 1st Brigade Combat Team, 10th Mountain Division, in support of Operation Freedom Sentinel. He also served at the Army Physical Fitness School and has two combat deployments in support of Operation Enduring Freedom and Operation Freedom's Sentinel.

CPT Brandon Latham is a Field Artillery officer and the current fire support officer of 2/3 CR. He previously served in 2nd Armored Brigade Combat Team, 1st Armored Division, where he deployed on a CENTCOM rotation 2020 in support of Operation Spartan Shield.

CPT Zachary Watters is a Military Intelligence officer and the former S-2 of 2/3 CR. He previously served in the 1st Combat Aviation Brigade where he deployed on a 2021 U.S. European Command rotation in support of Operation Atlantic Resolve. He is currently the acting S-3 of Sabre Squadron.

Sabre Soldiers conduct operations during KCTC 24-06.



Convergence in MDO: A Guide for Junior Officers

CPT TICE MYERS

Baselining

This article is designed to serve as a guide to assist junior officers in understanding their role within the overall convergence framework in either a battalion/brigade staff position or within their key developmental platoon leader or company commander role. It is in no way a comprehensive analysis of convergence and multidomain operations, nor a prescriptive approach of how to plan and conduct operations. The primary audience for this article is the future platoon leaders and company commanders currently or shortly entering their respective professional military education course.

It is important to first know the doctrinal definitions for the following terms used throughout this article. A domain is defined as "a physically defined portion of an operational environment requiring a unique set of warfighting capabilities and skills."[1] Multidomain operations (MDO) are "the combined arms employment of all joint and Army capabilities to create and exploit relative advantages that achieve objectives, defeat enemy forces, and consolidate gains on behalf of joint force commanders."[2] Convergence is "an outcome created by the concerted employment of capabilities against combinations of decisive points in any domain to create effects against a system, formation, decision maker, or in a specific geographic area."[3]

True to doctrinal form, these definitions encompass many ideas in a lot of words and can be difficult to understand upon their initial read. However, in more general terms convergence is the combination and synchronization of multidomain effects enacted on an adversary that aids in achieving overall mission success.

As junior officers, with respect to mission planning, we are taught largely through the lens of achieving decisive points in order to accomplish the mission. Platoons' decisive points, however, are very often different from the company decisive point; and it's on the officer at echelon to ensure they understand what their respective decisive point is and how it supports the overall mission of their higher echelon.

This discrimination of decisive points chiefly falls under the concept of main and supporting efforts. The main effort "is a designated subordinate unit whose mission at a given point in time is most critical to overall mission success."[4] A supporting effort is a subordinate unit "with a mission that supports the success of the main effort."[5] This is a counterintuitive statement, but the supporting efforts are the most important units in an operation. To use a sports analogy, this is akin to a quarterback throwing a touchdown to the receiver (the main effort) from 40 yards out. It takes the receiver time to get down the field, and the quarterback needs time to scan targets, make the mental calculations for the throw, and throw an accurate pass. The time they are given is the most important part, and that is given by the offensive line (a supporting effort). Without the supporting effort(s), the main effort would fail. This is where convergence and MDO come into play.

As defined in Field Manual (FM) 3-0, *Operations*, there are five domains: maritime, land, air, space, and cyberspace.[6] As a junior officer, a general understanding of how the forces within those domains interact with the sum of its parts is important to understanding convergence and, subsequently, how convergence can lead to decisive points.

Each domain has myriad assets that can operate within it. Sea assets can be a single submarine or entire battle carrier group, while land assets can be a combined arms battalion or an entire infantry airborne brigade conducting a vertical envelopment. Air assets include fixed- and rotary-wing aircraft or assets echelons above brigade like the recently retired Joint Surveillance Target Attack Radar System (JSTARS). Space assets are varied and greatly influence all other domains as things like global positioning systems, target acquisition, and electromagnetic warfare originate there. Finally, cyberspace includes critical assets like the Internet of Things (IoT), the electromagnetic spectrum, and computer systems and processes.

At the conclusion of this article, I hope to provide greater clarity of the convergence window of opportunities to those junior officers who are ultimately the implementors of staff plans as the Army, rightfully, places greater emphasis on convergence.

The Why

For two decades the Army engaged almost completely in counterinsurgency (COIN) operations in the Middle East and Central Asia. U.S. presidents, dating back to former President Obama, though, aimed at pivoting the United States and Department of Defense (DoD) towards the Indo-Pacific Command area of responsibility to ready itself and keep pace with the growing Chinese presence in the region.[7] At the conclusion of the war in Afghanistan in 2021, the Army affirmed its need to transition from a COIN mentality

Figure 1 — Domains and Dimensions of an Operational Environment (Field Manual 3-0, Figure 1-4)

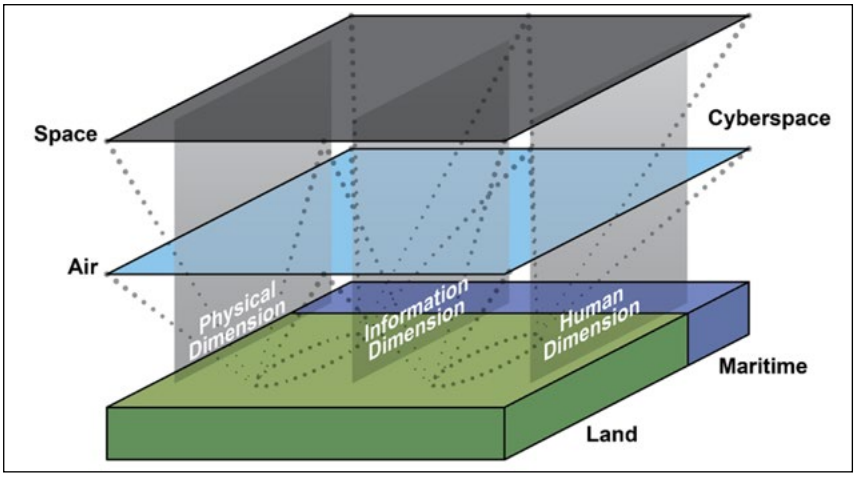
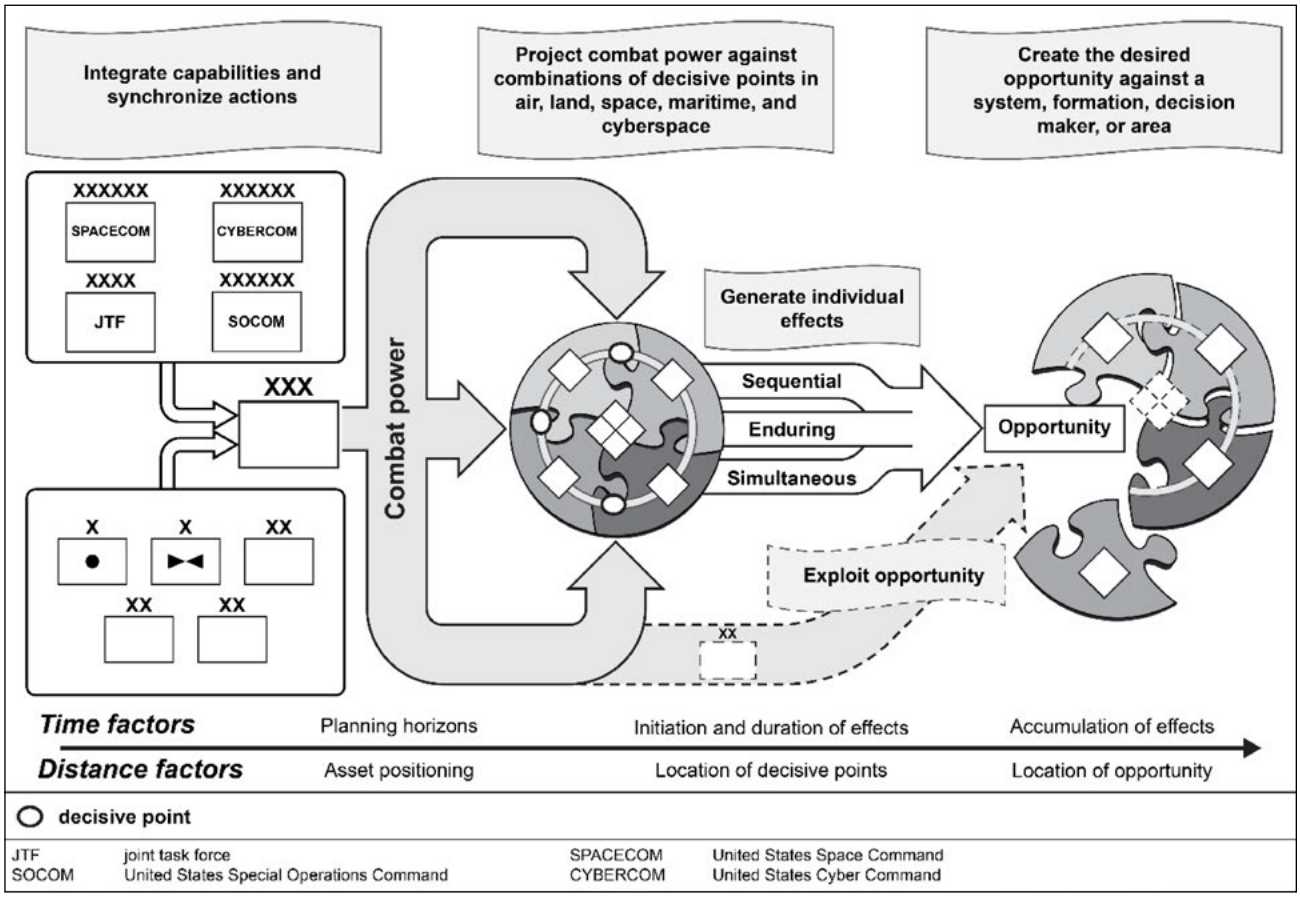


Figure 2 — Convergence (FM 3-0, Figure 3-1)



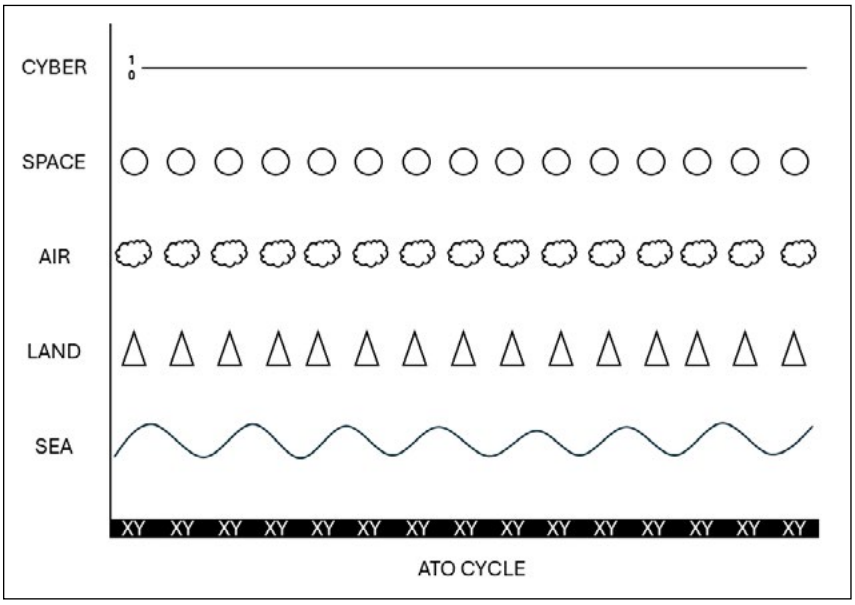


Figure 3 (Figure by author)

to one of large-scale combat operations (LSCO), which are "extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operations and strategic objectives."[8] LSCO in its most basic form is peer-to-peer, or near-peer to peer, warfare — a type of war the United States did not have to fight during its global war on terrorism days. An innate aspect of LSCO, from an economic perspective, is that we live in a resource-constrained environment. The days of the U.S. having simultaneous and continuous overmatch capability in air, space, and sea domains, and being able to provide assets consistently with minimal consequence, are largely gone.

During LSCO, assets must be assigned and protected by their supporting unit, or they risk destruction. Additionally, the amount of assets available by domain is subject to exogenous factors like crew rest, maintenance, flight hours, or enemy anti-access/area denial. With economy of force in mind, convergence then becomes paramount to mission success because it means that commanders and their planners have a finite amount of time and resources to execute the commander's vision.

For junior officers, this means that their platoons and companies must be ready at a moment's notice to execute a plan that may be only "good enough." Platoon and company-level leaders must conduct parallel planning with their higher staff to determine what their decisive points may be; likewise, battalion and brigade staffs must inform their subordinate units of their planning efforts and keep them abreast of what assets are available and at what times.

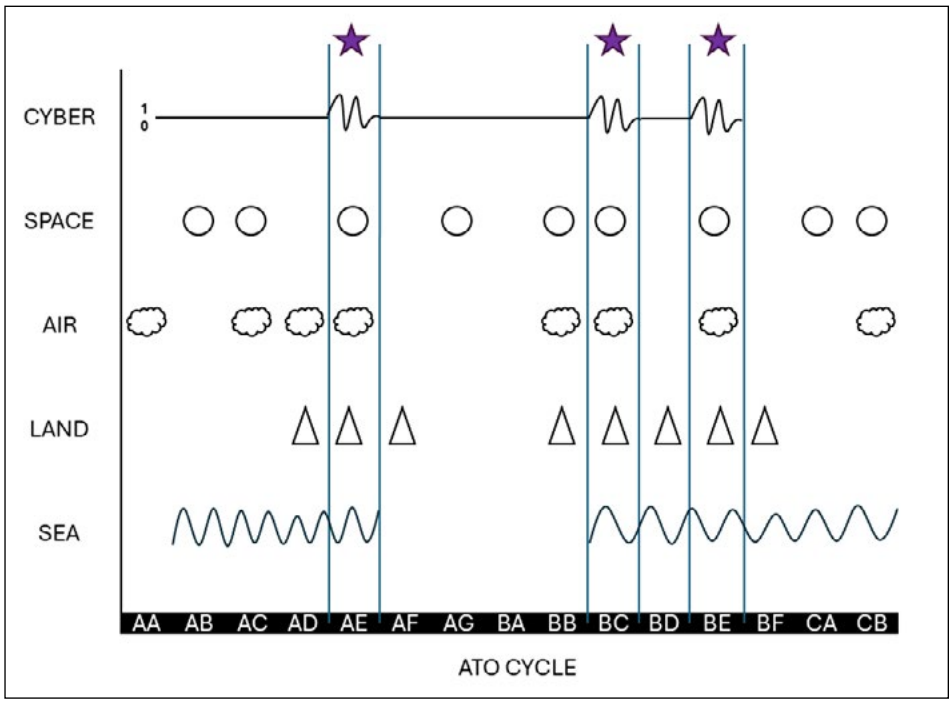
FM 3-0 illustrates how the operational environment generally applies to the battlefield (Figure 1) as well as demonstrates a convergence outcome example (Figure 2).[9] However, there is not a combined diagram to show both, nor one that is easily understandable. In this endeavor, I created a diagram (Figures 3 and 4) to help bridge this gap and more easily show the relationships between MDO, convergence, and decisive point planning.

In Figure 3, the diagram is broken down into an X axis with the air tasking order (ATO) cycle, and the Y axis with the five domains. Essentially, the ATO cycle is the governing document on which assets are available at which times and for how long. Within the area of the X and Y axis are icons denoting non-specific assets within each domain and their application in that ATO. In a perfect world, this would mean all resources are available at all times; as previously stated though, we operate in a resource-constrained environment, so this is impossible. Figure 4, therefore, attempts to show how convergence can be applied in a realistic, albeit simplified, way that highlights planning and preparation of the battlefield, execution of the decisive point, and the follow-through of an operation.

Implementation

For example, let's say an Army corps is conducting operations in preparation for an attack across the international boundary of a fellow NATO state that has been attacked by

Figure 4 (Figure by author)



its aggressive neighbor and seized multiple provinces of its territory. Both the NATO state and the aggressor state are considered peers militarily to the United States. Using Figure 4, we can assume that the ATO cycles prior to the first purple star (a decisive point) are spent in planning and preparation: The Navy is positioning an aircraft carrier; Army forces are receiving equipment from the port or preposition stock; Air Force bombers are planning routes stateside; the Space Force is providing insights on optimal time and range for satellites in near-Earth orbit and low Earth orbit; and Cyber Command personnel are preparing to disrupt portions of the electromagnetic spectrum within the affected provinces. But once ATO "AE" starts, domains align in their asset capability and implementation, and the corps commander orders a show of force with limited engagements for specific units. These units and their staffs have anticipated this convergence window and execute, achieving the first decisive point.

After this ATO window, those Army units consolidate gains and prepare for follow-on operations. As ATO "BC" approaches, units at echelon within domains are again planning and preparing, but this time when the convergence window opens, the corps commander orders a deception operation to make the adversary's commander believe the U.S. will not attack where he's expecting them to, thus achieving decisive point two. Using the momentum from the successful deception operation, the commander effectively pivots to his main effort (a brigade combat team [BCT] with the full weight of the other four domains' assets behind them) in ATO "BE" to breach and destroy the enemy commander's main force, achieving decisive point three and overall mission success.

There is significantly more nuance behind this basic narrative as well as time between operations and planning, but the idea remains the same: Convergence to achieve the decisive point equals mission success. In this example, the BCT is the quarterback/receiver combo with their task to conduct the breach, but without the supporting efforts of the limited objective units, the units conducting the deception operation and the assets available at echelon in each domain, the main effort will either fail or achieve a Pyrrhic victory.

As a junior officer in any military occupational specialty or branch of service, this means you as the leader of that echelon must know your task and purpose and know the bigger picture two levels up. Your organization must be poised to react when the order is given, as time and material resources are finite. Failure to achieve a decisive point within a specific convergence window may mean overall mission failure. For junior officers on a battalion and brigade staff, this means you must understand and produce meaningful products that convey convergence windows and attempt to anticipate and relay to subordinate units when those windows will occur to capitalize on a relative advantage.

Bringing It All Together

Convergence is perhaps the single most important concept of military doctrine today. The fundamentals behind convergence aim to bring about the most destructive means to bear on an enemy in the smallest amount of time with the least amount of resources. Convergence becomes even more important when considering historically that single operations or battles by and large do not lead to overall war winning.[10] Attrition-based warfare is a consistent factor in wars; however, adherence to convergence windows allows for the magazine depth required for protracted conflicts.

Your organization must be poised to react when the order is given, as time and material resources are finite. Failure to achieve a decisive point within a specific convergence window may mean overall mission failure.

Convergence window planning at the tactical level is imperative. This can be achieved through various mediums, but products like an execution checklist, intelligence collection synchronization matrix, and targeting synchronization matrix are crucial to tactical level commanders and leaders. These products are part of a minimum-level product packet that company commanders and platoon leaders must know and understand during any operation because these illustrate, in product format, convergence windows. These also provide invaluable information about potential MDO assets passing through a company's or platoon's area of operations during the operation. This allows greater cross-communication and reduces the risk of fratricide.

For junior officers, convergence is the formula for future military success and must be rigorously planned for and anticipated. Understanding and implementing this ideology at the junior level today will ensure success for the Army of the future.

Notes

[1] Field Manual (FM) 3-0, *Operations*, October 2022.
[2] Ibid.
[3] Ibid.
[4] Army Doctrine Publication 3-0, *Operations*, July 2019.
[5] Ibid.
[6] FM 3-0.
[7] Oriana Skylar Mastro, "The Pivot That Wasn't," *Foreign Affairs*, 18 June 2024.
[8] Ibid.
[9] FM 3-0.
[10] Cathal J. Nolan, *The Allure of Battle: A History of How Wars Have Been Won and Lost* (New York: Oxford University Press, 2017).

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Not Just Arbitrary Lines:
Factors That Impact the Battlefield Framework

MAJ NATHAN A. SCHOFFER
MAJ JEREMY S. MANESS

The *Fiscal Year 23 Mission Command Training in Large-Scale Combat Operations Key Observations* publication states that units routinely struggle to develop a complete operational framework. Furthermore, units lack processes to adjust their operational framework in contact based on current conditions.[1] During Warfighter Exercise (WFX) 25-1, the 1st Armored Division (AD) staff experienced similar challenges. The term battlefield framework in this article refers to the use of graphic control measures, specifically boundaries, that delineate responsibilities at echelon. Through 1AD's experience at WFX 25-1, the division staff found that they must understand the factors that impact the positioning of forward and rear boundaries, develop their battlefield framework during planning, and communicate boundary refinements with their higher headquarters and subordinate units.

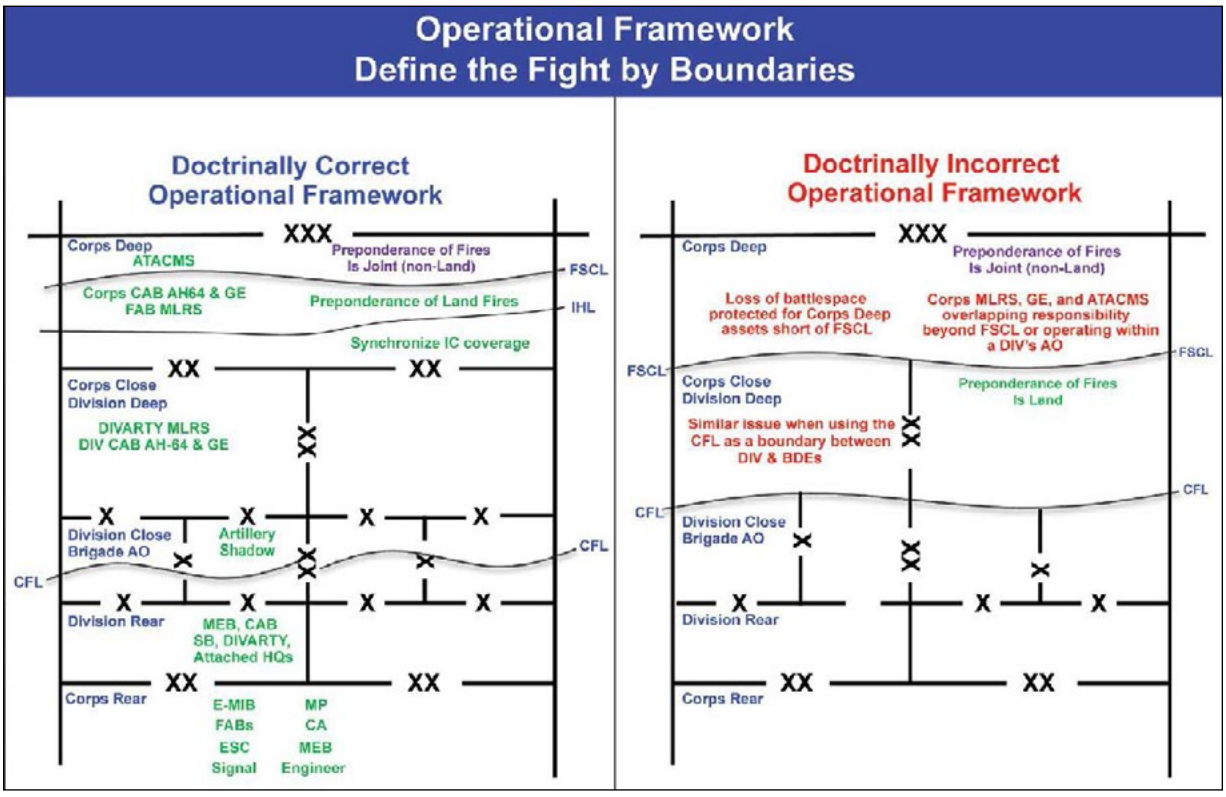
The Operational Framework in Doctrine

Field Manual (FM) 3-0, *Operations*, describes three models commonly used to build an operational framework: 1) assigned areas; 2) deep, close, and rear operations; and 3) main effort, supporting effort, and reserve.[2] Although 1AD uses aspects of all three models in its operational framework, this discussion focuses on the division's use of assigned areas and deep, close, and rear operations.

There are three types of assigned areas units may use: area of operations, zones, or sectors. Defined by its boundaries, an area of operations is "an operational area defined by a commander for the land or maritime force commander to accomplish their missions and protect their forces."[3] Zones are areas assigned to units in the offense that only have rear and lateral boundaries.[4] Finally, sectors are operational areas assigned to units in the defense that have rear and lateral boundaries and interlocking fires.[5]

During its division-level National Training Center (NTC) rotation in January 2024, 1AD used a mixture of zones and sectors to define subordinate units' operational areas. Using zones and sectors, the division defined its deep area as the area between the division forward boundary and the coor-

Figure 1 — Examples of Operational Frameworks
(Graphic from *Fiscal Year 23 Mission Command Training in Large-Scale Combat Operations Key Observations*)



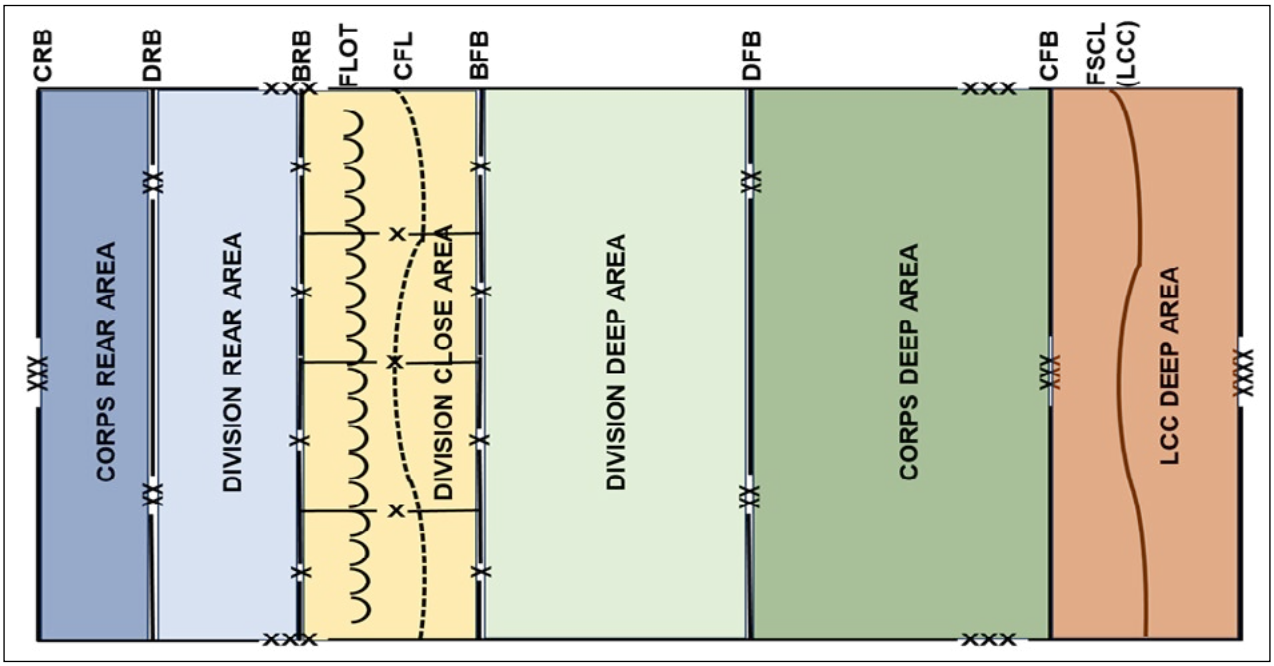


Figure 2 — 1AD Battlefield Framework Template (Graphic courtesy of authors)

dinated fire line (CFL). The close area was defined as the area between the CFL and the brigade rear boundary, and the rear area was defined as the area between the brigade rear boundary and the division rear boundary.

Several months later, the division transitioned to exclusive use of areas of operations in its WFX 25-1 training progression. In the areas of operations model, the forward and rear edges of the deep and close areas changed. Integrating a brigade forward boundary, the division's deep area became the area between the division forward boundary and the brigade forward boundary. The close area became the area between the brigade forward boundary and the brigade rear boundary.

The key difference between 1AD's use of the assigned areas models is the type of control measures used to define the deep and close areas. Using zones and sectors, 1AD defined its deep and close areas with a mix of control measures and fire support coordination measures (FSCMs). Once transitioned to areas of operation, 1AD used only control measures to define its deep and close areas. The transition occurred because doctrinally FSCMs are not intended to delineate responsibilities between units. According to FM 3-09, *Fire Support and Field Artillery Operations*, FSCMs "enhance the expeditious engagement of targets; protect forces, populations, critical infrastructure, and sites of religious or cultural significance; and set the stage for future operations."[6] The CFL, which was 1AD's measure separating the division deep from the division close, is a permissive FSCM that is used to facilitate the expeditious attack of targets, not to assign responsibility for the attack of targets.

Once again, the key control measures used to delineate the deep, close, and rear areas of 1AD's operational area are boundaries. A boundary is "a line that delineates surface areas for the purpose of facilitating coordination and deconfliction of operations between adjacent units, formation, or areas."[7] It is also important to note the responsibilities inherent to units assigned an area of operations, which are: terrain management, information collection, integration, and synchronization, civil affairs operations, movement control, clearance of fires, security, personnel recovery, airspace management, and the minimum-essential stability tasks.[8] These doctrinal responsibilities must be considered when determining placement of the forward and rear boundaries. However, subsequent sections of this article focus on the finer aspects corps and divisions must account for when determining deep, close, and rear areas.

Forward Boundaries

When using areas of operations to assign areas, forward boundaries form the far edge of a unit's area of operations. At the corps and division levels, the forward boundary is the start of the respective echelons' deep area. A unit's deep area is not assigned to a subordinate maneuver element and is where the establishing commander is responsible for designating target priority, effects, and timing. Further, the establishing commander plans and controls execution of all operations conducted in their deep area.[9] An echelon's forward boundary is established by their higher headquarters — the division forward boundary is established by the corps, and the brigade forward boundary is established by the division. Thus, corps are responsible for operations forward of the division forward boundary, divisions are responsible for operations from the division forward boundary to the brigade forward boundary, and brigades are responsible for operations up to the brigade forward boundary.

Typically, deep operations occur or have their effects in the deep area. FM 3-0 defines deep operations as "tactical

actions against enemy forces, typically out of direct contact with friendly forces, intended to shape future close operations and protect rear operations."[10] The manual goes on to list several activities conducted as part of deep operations, which are: deception; intelligence, surveillance, and reconnaissance and target acquisition; interdiction; long-range fires; electronic warfare; offensive cyber operations and space operations; and military information support operations.[11] Organically, corps and divisions are not able to execute all of the listed activities conducted as part of deep operations. However, when organized appropriately for operations, both echelons can either execute with task-organized forces or with assets available from adjacent units or the joint force. Forward boundaries at the corps and division level delineate where each echelon is responsible for these deep operation activities.

In most cases, brigades do not have a true deep area nor are they task organized to conduct deep operations. Brigades operate in the division's close area and conduct close operations, which are "tactical actions of subordinate maneuver forces and the forces providing immediate support to them, whose purpose is to employ maneuver and fires to close with destroy enemy forces."[12] Activities supporting close operations include maneuver of subordinate formations, close combat, indirect fire support, information collection, and sustainment support of committed units.[13] Close operations occur from the brigade forward boundary to the brigade rear boundary, and many of the activities conducted as part of close operations occur or effect from the forward line of own troops (FLOT) to the brigade forward boundary.

There are three factors corps and divisions must consider when determining the placement of forward boundaries. First, units must consider their operational approach. Part of the operational approach is understanding three fights: the current fight, the next fight, and the fight after next. Second, corps and divisions must account for the range of the delivery systems task organized at echelon. Corps must understand the range of their assets as well as the range of their divisions' assets, and divisions must understand the range of division and brigade assets. Finally, units require an understanding of their subordinates' information collection capabilities. When considering these capabilities, staffs must understand not only the systems conducting information collection but the organizations responsible for processing, exploiting, and disseminating the intelligence products derived from the information collection systems. Without an understanding of these factors, corps and divisions may establish forward boundaries up to which their subordinate formations cannot truly affect.

The operational approach may be the most important factor to consider when determining the placement of a forward boundary. A way for corps and divisions to conceptualize their operational approach is by compartmentalizing the current fight, the next fight, and the fight after next. Generally, brigades are responsible for the current fight, divisions are responsible for the next fight, and corps are responsible for the fight after next. Under this concept, the brigade forward boundary delineates the current fight and the next fight, and the division forward boundary delineates the next fight and the fight after next. These "fights" may be based on objectives or enemy formations if it is clear, at echelon, who is responsible for what objective or enemy. Using this framework, corps, divisions, and brigades can easily understand where their effects, lethal or non-lethal, need to be focused. This framework also assists in understanding what conditions must be set for the subordinate echelon to assume the fight. When a unit understands what objective or enemy formation they are responsible for affecting, they can focus their information collection and effects and develop appropriate, conditions-based triggers for the shifts of the forward boundaries.

The second factor to consider when determining forward boundaries is the delivery capability of the subordinate formation. The placement of the division forward boundary must account for the range capability of the artillery and aviation systems available at the corps and division levels. If the corps' and division's artillery capability is the same, the division forward boundary may be closer to the FLOT to allow corps to range the objective or enemy formation that is the fight after next. Similarly, the corps staff must understand the range capability of the corps' and division's aviation assets. For both artillery and aviation, corps must also consider ammunition available at echelon. Even if a subordinate division has the range to affect a deep division forward boundary, it may not have the ammunition available to create the effects required to set the conditions needed for the next fight. When placing the brigade forward boundary, the division staff must understand the forces available for each brigade with a forward boundary. When the division weights its main effort with a field artillery battalion, or two, there is a chance that another brigade does not have direct support (DS) artillery. In that case, the brigade forward boundary for the brigade without DS artillery should be closer to the FLOT than it is for the brigade with one or two field artillery battalions. Understanding delivery capabilities at echelon requires routine dialogue between corps, division, and brigade staffs. Higher headquarters must allow subordinates time to provide feedback on the placement of their forward boundaries.

Finally, staffs must consider information collection capabilities and capacity at echelon. Usually, the intelligence sections at each echelon have the means to access the intelligence products from National Reconnaissance Office overhead systems (formerly referred to as national technical means). However, not all intelligence sections are created equal. Corps and divisions have robust analysis and control elements (ACE) that possess greater ability to perform processing, exploitation, and dissemination (PED) of information. Due to recent changes to the Army's force structure, brigades no longer have an organic brigade intelligence support element (BISE), so the PED capacity at the brigade is reduced. Staffs must consider the PED capacity of their subordinates when assigning areas of operations to ensure their subordinates can execute effective information

collection. The capability of corps, division, and brigade-controlled information collection assets must be considered when determining forward boundaries. Corps and divisions typically control assets that can collect tens of kilometers from the FLOT brigades; however, they may not have the same capability. Staffs need to understand the capability of the information collection assets task organized to the brigade before determining the brigade forward boundary. Like delivery capabilities, staffs at echelon must engage in routine dialogue about information collection capabilities to inform the placement of forward boundaries.

Placement of boundaries define fights at echelon. The "three fights" framework — current fight, next fight, fight after next — is a way to understand and articulate who is responsible for what objective or enemy formation. Additionally, staffs must consider their own and their subordinates' effect and collect capabilities. If these factors are not given serious consideration, units risk assigning too much, or too little, area to their subordinates for deep and close operations.

Rear Boundaries

FM 3-90, *Tactics*, states that the rear boundary delineates the rearward limits of a unit's assigned area and defines the start of the next echelon's rear area.[14] The rear boundary sets the area from which the organization conducts rear operations, usually defined as the area from the organization's rear boundary to the rear boundary of the next echelon. Additionally, FM 3-0 defines rear operations as tactical actions behind major subordinate maneuver forces that facilitate movement, extend operational reach, and maintain desired tempo. During WFX 25-1, some of the requirements in the rear area included retaining lines of communication (LOC) for resupply operations, opening a ground LOC in support of host nation governance, and securing forward arming and refueling points (FARP) and critical assets in addition to enabling the division's offensive tempo. The division was required to balance security operations in the rear area with an increasingly expanding rear area, given limited combat power and few options to task organize additional combat power. The division had to identify how to allocate its forces over a large area and prioritize requirements. Additionally, the division learned the necessity of delineating clear roles and responsibilities between command posts and activities in the rear area. As a result, the division identified the necessity for establishing an authorities matrix that clearly delineates responsibilities for each command post. For missions that fall within the purview of the rear command post, there must also be a clear hand off from planners in the main to those in the rear. Furthermore, planners must fully acknowledge the capabilities for span of control when setting the rear boundaries and identify risk with mitigation measures.

During WFX 25-1 the division assigned the maneuver enhancement brigade (MEB) with security tasks in the rear area, with an M777 battery providing general support (GS) fires, a Stryker battalion assigned as the tactical combat force, and the deputy commanding general – support (DCG-S) as the rear area commander. At the start of the exercise, this was sufficient to accomplish tasks in the rear area. However, as the division progressed forward in its operation, the division's rear area continued to expand. One of the division's challenges with the rear area is that the rear boundary is set by its higher headquarters. This necessitates the coordination with corps to shift the division rear boundary. However, corps faced similar challenges regarding limited combat power and its ability to secure an expanded rear area. Therefore, our recommendation is to codify a procedure for the corps and division to identify requirements and articulate risk for its rear area in conjunction with potential shifts of forward boundaries.

We learned that the battlefield framework is vital to enabling the division to set the conditions for the division's critical events. Therefore, the battlefield framework must have the flexibility to enable deep operations in support of each critical event prior to subsequent framework shifts.

Challenges and Pitfalls

During WFX 25-1, planners made planning assumptions regarding our probable line of contact. During wargaming, we assessed a likely probable line of contact that was medium or deep within our assigned area in relation to our initial objectives. However, we failed to consider that Donovian forces would beat us to our initial wet gap crossing, and therefore our plan lacked the flexibility to account for a shallow meeting engagement. The resulting impact of this planning shortfall was a battlefield framework that did not sufficiently enable the division to set the conditions prior to our initial wet gap crossing and ultimately resulted in a 48-hour delay and considerable losses in combat power. We learned that the battlefield framework is vital to enabling the division to set the conditions for the division's critical events. Therefore, the battlefield framework must have the flexibility to enable deep operations in support of each critical event prior to subsequent framework shifts. Moreover, any shift in the framework must be tied to clearly articulated conditions that must be met to enable subsequent movement of the division's deep, close, and rear areas.

A second aspect that we struggled with was setting a battlefield framework that optimized the ability for the division to effectively set conditions in the deep area while also providing an appropriate area for subordinate brigades to execute their operations in the close area. Furthermore, the corps assignment of our division forward boundary quickly extended beyond the division's ability to set conditions. Therefore, this required division-to-corps requests for modification of the boundary or division-to-corps coordination for the establishment of kill boxes to effectively shape. Additionally, the divi-

sion could not set a brigade forward boundary that extended too deep for the brigades to own without appropriate division shaping. Our recommendation is that the shift of the battlefield framework must be tied to conditions that are set by each echelon. Conditions should be identified during planning and modified within the future operations (FUOP) cell. The movement of the battlefield framework should be tied to a trigger with codified conditions that will be met to initiate the shift. Key considerations for the division to shift its battlefield framework include an assessment of the correlation of forces and means. Additionally, divisions should work with corps to establish a method to adjust the battlefield framework and confirm shifts during execution.

Conclusion

The establishment of the battlefield framework can be visualized spatially using objectives identified on the map. It can then be visualized temporally using the three fights framework. From there, the division can establish boundaries that enable conditions setting in the deep area in preparation for the next brigade close fight. These boundaries must also provide the space for the brigades to fight in the close area and current assigned objectives, and a rear area that allows for the division to maintain its tempo and sustain itself. It is critical for each echelon to understand the capabilities and limitations of their formations when assigning boundaries to ensure subordinate elements can collect, effect, protect, sustain, and maneuver. Units that fail to establish a complete battlefield framework that is understood at echelon may experience similar challenges and pitfalls that create confusion, inhibit tempo, and fail to exploit opportunities.

Notes

[1] Carl Fischer, ed., *FY23 Mission Command Training in Large-Scale Combat Operation Key Observations*, March 2024, Center for Army Lessons Learned, 1, https://api.army.mil/e2/c/downloads/2024/03/07/f3684ca2/24-03-853-mctp-fy23-key-observations-mar-24-public.pdf.

[2] Field Manual (FM) 3-0, *Operations*, October 2022, 3-23.

[3] Ibid., 3-24.

[4] Ibid., 3-24.

[5] Ibid., 3-24.

[6] FM 3-09, *Fire Support and Field Artillery Operations*, August 2024, B-1.

[7] FM 1-02.1, *Operational Terms*, February 2024, 8.

[8] FM 3-0, 3-24.

[9] Army Techniques Publication 3-94.2, *Deep Operations*, September 2016, 1-8, 1-2.

[10] FM 3-0, 3-29.

[11] Ibid., 3-29.

[12] Ibid., 3-29.

[13] Ibid., 3-30.

[14] FM 3-90, *Tactics*, May 2023, A-6.

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Company-Level Lessons for NATO Multinational Operations

1LT MIKHAEL SMITS

This article recommends best practices for multinational integration at the company level and below. Each section addresses one main lesson learned during a Joint Multinational Readiness Center (JMRC) rotation fought under an Italian regiment and alongside nine other nations. Each section opens with a fact pattern and closes with recommendations.

The Army's 2024 revision to Field Manual (FM) 3-16, *The Army in Multinational Operations*, identifies the tenets of multinational operations as rapport, respect, knowledge of partners, team building, patience, trust, and shared understanding.[1] These instill "mutual confidence in multinational operations."[2] This article aims to help units develop that shared understanding and mutual confidence.

Background

Legion Company, 1st Battalion, 503rd Infantry Regiment (Airborne), was task-organized under the Italian Army's 187th Parachute Regiment (Folgore) for the duration of Saber Junction 24, the 173rd Airborne Brigade's biennial rotation.[3] During the exercise, Folgore conducted a battalion-sized air assault with nine days of follow-on offensive and defensive operations as part of a brigade joint forcible entry (JFE). Folgore used a lead nation (LN) command structure, with Legion Company maintaining internal integrity.[4]

Legion Company had relevant recent experience training as part of multinational operations. Successful integrations during the preceding year included battalion-sized airborne operations into Italy with a Hungarian squad and into Sweden with Hungarian, Spanish, and Italian paratroopers as part of Defender 24.[5]

Integrate Planning and Rehearsals

The Folgore conducted planning at Camp Albertshof, Germany, with Legion Company in Italy. Folgore products were analog, handwritten, and closely held. For more than a week after the initial brigade order, no regimental orders reached Legion. When products arrived, they were often photographs of handwritten notes.

During that time, the brigade and Legion's organic parent battalion produced several warning orders (WARNOs) and fragmentary orders (FRAGOs). For almost a year, the brigade had instructed units to use all our technology in the fight, so Legion began planning tentative direct fire control measures (DFCMs) on Windows Tactical Assault Kits (WINTAKs) and chest-mounted displays. We packed screens, sensors, cables, antennas, chargers, and batteries.

U.S. Army and Italian paratroopers prepare to move during a final battle in Hohenfels, Germany, as part of exercise Saber Junction 24 on 13 September 2024. (Photo by SGT Joskanny J. Lua)

Folgore conducted a highly deliberate military decision-making process (MDMP) with tightly controlled overlays. Even after platoon leaders arrived in Germany, they could neither inspect graphics nor attend planning meetings. As a result, parallel planning proceeded on divergent digital and analog graphics. Key terrain fell on different sides of phase lines and unit boundaries. Timelines varied between "H-hour," "L-hour," and "P-hour" due to multiple airborne, air assault, and ground assault convoys (GACs). Brigade tasked Folgore with defending no later than "H+66," but synchronization proved difficult when timelines for insertion methods changed.

Lastly, Legion received uncertain tactical tasks.[6] Some were unfamiliar, while others were familiar but used in unfamiliar ways. These included enabling "deception operations" and "engaging civilian leaders."

Recommendations:

- Conduct at least one smaller training exercise for familiarization before a brigade-size assessment. Doing so builds confidence and identifies issues with lower stakes.

- Involve key leaders early in the foreign planning process and co-locate if possible.[7] Doing so supports the production of timely orders, subordinate parallel planning, and one-third and two-thirds planning-to-preparation ratio.[8] Set early expectations of junior officers, NCOs, liaison officers (LNOs), and staff involvement. Cultural differences may restrict attendance to officers.

- Use existing doctrinal resources as checklists. The Planning Considerations Checklist and FM 3-16's command and control (C2) and MDMP considerations are especially useful.[9-10]

- Schedule additional rehearsals among partners, describing actions across time and space, purpose, and end states. No planning cell can better confirm commander intent than a supervised rehearsal. Rehearsal-of-concept (ROC) drills identify ambiguities and misunderstandings.

- Nest company, regiment, and brigade expectations about technology and timelines. Future task organization and equipment should be harmonized. Companies can nest with similarly capable foreign units or leave unusable capabilities at home.

- Prepare compatible analog products, including for your higher regiment and adjacent companies. Bring maps, acetates, grid reference graphics (GRGs), and other office supplies and fighting products. These maintain a shared picture and allow for parallel planning. Ensure common scales and nomenclature. Budget time to produce and circulate multiple drafts of analog copies to all elements.

- Request a "wish list" of tactical tasks the foreign battalion expects from the company. Provide a "menu" of tasks the U.S. unit can execute. This supplements company standard operating procedures (SOPs) and equipment "smart cards" to speed integration (see next section).

Schedule additional rehearsals among partners, describing actions across time and space, purpose, and end states. No planning cell can better confirm commander intent than a supervised rehearsal.

- Consult international standardization agreements (ISAs) and multinational publications (MPs) in advance when possible. Solicit lessons learned and SOPs from the training center, the foreign partner, and your own brigade.[11]

Early Exchange of Information on Equipment, Capabilities, and Procedures

Several times regimental elements moved into Legion's positions. One night, an entire motorized company roared into our AO. We were tucked in patches of trees in a generally open area, ideal for concealing light infantry hunting armor but not for hiding vehicles. They had lost radio contact and were conducting a rearward passage of lines (RPOL) to the command post (CP) behind us. This rendezvous drew the attention of several hostile small unmanned aerial systems (sUAS), which then approached us in a search pattern. Folgore opened fire and displaced, but our position was targeted by enemy scouts and waves of drones throughout the night.

We received a single challenge and password. Given frequent displacement, degraded situational awareness, and limited night-vision and radio capabilities, we used it often. However, vehicle noise and other factors meant parties would yell the challenge several times. The enemy eventually heard the challenge and began to use it to target friendly elements.

We also interacted with friendly foreign elements outside the regiment. One night, unfamiliar vehicles moved through our engagement area toward enemy lines. We assessed that a friendly foreign element must either be filling in a seam or setting a screen. The next morning, a Legion anti-armor team pursuing an armored target of opportunity found itself among friendly Montenegrin forces. After destroying the enemy vehicle, a quick exchange of information confirmed they were indeed there on brigade's order. A nighttime encounter could have been fatal.

The next day, Legion conducted a deliberate linear danger area (LDA) crossing parallel to a Folgore company several kilometers to our north. Not a hundred meters past the road, our forward element made visual contact with a company of vehicles and dismounts. They recognized us as friendly, even though we did not initially recognize them. To reduce risk, we adopted an unthreatening posture, moving into a file and slinging weapons.

Once face to face, we learned they were Macedonian.

While Legion continued crossing, a Macedonian dismount led me to his CP. There, in a mix of languages, they explained that Macedonian scouts had spotted enemy dismounts precisely where we were headed for linkup. We relayed the information and adjusted the link-up point.

Recommendations:

- Have LNOs arrange a "petting zoo" for all U.S. and partner vehicles, uniforms, and equipment.[12] Test communications and night-vision devices for compatibility. Run the vehicle engines to allow for audial recognition, especially at night. Produce a "smart card" of each item's capabilities. This enables rapid combat identification (CID) at the lowest level and also ensures commanders understand one another's capabilities.[13]

- Rehearse common scenarios for which foreign units may have diverging SOPs, including linkup and passage of lines. Review battle drills for direct fire contact, sUAS contact, and compromise of patrol base or defensive lines. Even if units do not share a unified approach, familiarity provides predictability.[14]

- Confirm partner nations receive the same rules of engagement (ROE) brief, especially if under a common U.S. brigade, and then rehearse scenarios to confirm.[15]

- Enforce signal operating instructions (SOI) with rotating challenge and password, even with foreign partners. Consider using two challenges and passwords, so that one side can issue a different challenge in return.

Fight Micro-Management

In contrast to U.S. planning, Folgore often viewed the plan as coextensive with the mission and made detailed plans touching the platoons and squads. When positioning companies for the defense, the Folgore gave multiple grids for each company to occupy as well as a task on that grid. These did not include company boundaries and were often too dispersed for tie-in with adjacent elements. At various times Legion provided detachments to secure the Folgore CP, overwatch key terrain, augment another company, and defend positions across multiple grid squares.

The specificity of the orders inhibited mission command or the exercise of disciplined initiative. In one instance, an order to displace with an imminent time hack precipitated a tense debate under a poncho among company and platoon leaders over whether to abandon a defensible position or disobey an impossible order.

On another night, following a difficult retrograde to a subsequent battle position, we saw an old message instructing Legion to split up and relocate across several kilometers. Given the message's age and subsequent radio approval of our position, Legion's commander requested clarification over both platforms. We gained approval to hold in place over the radio but then received orders to move at once through the mission partner network (MPN).

During another mission, Folgore ordered Legion to step off along a specific route through several kilometers of unsecured terrain to an objective. At that time, Legion was arrayed across urban defensive positions. The point man had been excluded from the planning, no route was provided, and no one had been briefed on the operation. Resisting pressure from above, Legion's commander took several minutes to plan and prepare, making up time through an increased rate of march.

The frequency of urgent movements along unreconnoitered routes changed our formation order of movement (FOOM). Given the likelihood of frontal contact, the lead platoon's first squad leader walked point, and the weapons squad leader pushed forward with one gun team to help control the lead squad. Given armored threats, the anti-tank gunners of the front and rear squads moved with their M136 AT4s in hand, rifles slung. On at least two occasions, this allowed for the destruction of high priority targets (HPTs) of opportunity while moving full speed along trails.

Recommendations:

- Maintain one chain of command, even if using multiple communications channels or platforms. Ensure all orders include identification of the order's source.

A U.S. Army paratrooper assigned to the 173rd Airborne Brigade conducts a simulated attack with Folgore troops during a final battle in Hohenfels, Germany, as part of exercise Saber Junction 24 on 13 September 2024. (Photo by SGT Joskanny J. Lua)

Italian soldiers assigned to the 187th Parachute Regiment provide security during Saber Junction 24 at the Hohenfels Training Area, Germany, on 4 September 2024. (Photo by SGT Christian Aquino)

- Clearly identify the ground force commander and key leader location by phase. In the absence of engagement criteria, brief your own prior to movement.

- Seek higher command's intent to maintain unity of effort.[16] If higher remains grid- or task-centric, raise scenarios in which the narrow guidance would obviously fail to elicit further guidance.

- Plan explicitly for contingencies so that flexibility is planned rather than a departure from the plan.[17] Update higher regularly on changing facts on the ground and provide recommendations.

- Communicate your timeline needs, especially for briefing and route planning. Force planning into the operational timeline. Buy time by sending a key leader to participate in higher's planning and relay information as it emerges.[18]

- Interpret higher's guidance while being mindful of language and culture barriers. Exercise disciplined initiative within your formation and when interacting with other units.[19] Push key leaders and assets forward, using aggression to make up for condensed planning timelines or limited coordination.

Battle Tracking

Due to terrain, equipment, and cultural factors, limited information reached our company. This limited our ability to battle track and maintain a common operational picture (COP). We had center-point grids for adjacent companies but no boundary lines or contact points, so tying in with adjacent companies risked inadvertent movement through their lines or engagement areas.[20] Despite their advantages, Folgore's analog products left units with maps of various scales, divergent operations graphics, and no interoperability of acetates for distribution.

In the early days of the exercise, our End User Devices allowed us to track key leaders across the brigade and to contact other battalions to maintain situational awareness. This became more difficult as elements fell back on different communications windows. We knew little about adjacent battalions, forward line of own troops (FLOT), or the changing enemy situation.

The lack of battle tracking led to chance contact with other American elements within days. Approaching planned defensive positions, we withheld preparatory fires to maintain surprise. Clearing through, we spotted a friendly gun truck in what would have been the impact area and learned that the brigade's forward elements were several phase lines short of their templated positions. We shared our frequencies, distributed water and supplies, and tied them into our defensive plan.

The most memorable example took place the night before the culminating brigade assault. Legion was moving along a ridge to link up with Folgore scouts when we heard the scouts shout the challenge again and again. We realized they were challenging someone above us. Suddenly the high ground lit up with a company-plus of gunfire. Oddly, we saw no lasers pointing in our direction. It turned out another friendly company had changed its route and made contact with an enemy platoon. Neither us nor the scouts had known their position.

Recommendations:

- Bring, make, and circulate whatever materials and information are required to achieve shared "understanding of graphic control measures, especially changes, during execution."[21] (See earlier recommendation on shared maps and GRGs.)

- Attach capable personnel to the foreign partner's headquarters to help maintain a single COP.[22] This is especially important if using incompatible platforms or software.

- Task an operations officer (OPSO) or radio-telephone operator (RTO) with battle tracking for the company. Provide maps, acetates, and radio. Have the foreign LNO assist. If needed, the OPSO should link up with other units to pull the required information.

- Ask forward units for their rear trace and left and right limits, not just their FLOT. Share your location at every halt or communications window.

- Notify all nearby elements at all levels when conducting rearward or forward passage of lines with foreign units.[23] Do not assume lower units are aware of your position just because you notified their higher command.

- Rapid attrition and frequent movement increase the chance of units crossing or mixing with one another. Exchange and test communications plans with planned and potential adjacent units. Record frequencies for their platoons to coordinate at the lowest level.

- Practice integrating foreign elements into your task organization, even temporarily. Paratroopers train to form "little groups of paratroopers" (LGOPs) on the drop zone. Adopt an "LGOP" mentality even deep into a ground fight. This may involve sharing frequencies to get others on your net or detaching a Soldier with a radio. Identify their resupply needs and capabilities. Report to both your higher element and theirs the change in task organization.

Deploy LNOs

Anticipating challenges, our organic brigade and battalion both sent LNOs to Folgore. One was the executive officer (XO) of our organic battalion's heavy weapons company and the other a captain and full-time LNO. From Folgore, a chief warrant officer and 25-year veteran accompanied Legion.

Communications often bypassed the LNOs, denying them context and influence, and few spoke both fluent English and Italian. We lacked clear communication of the Italian plan, battle-tracking assistance, and one unified and consistent line of communication.

Additionally, when the American LNOs became planners, they began to have an "intent" which might not align with the Folgore commander's. In one case, the regimental command team drove into our platoon position and told me to move the platoon, with no indication as to our purpose. One of the LNOs privately gave me his understanding of the broader intent, and we relayed this to Legion's commander before once again displacing.

Recommendations:

- Identify LNOs early. Consider sending them TDY to meet their foreign counterparts.[24] Invite partner nation LNOs to do the same. If travel is not possible or no specific foreign partner has been identified, have the officer serve in the LNO role during an ordinary training exercise.

- Wherever possible, ensure LNOs have suitable language skills.[25] (See next section.)

- Involve LNOs in the planning process. This ensures the plan is compatible with U.S. capabilities, capacity, ROE, and risk to force.

- Send LNOs to brigade briefs, even if the foreign regiment has not begun its planning process or prefers not to have the LNO present. This is especially helpful if the brigade is also American. For the same reason, include foreign LNOs in all planning and briefings one level above or below the foreign nation.

Value Language Skills

Legion Company benefited from its home station in Vicenza, Italy. Legion's first sergeant spoke passable Italian and was married to an Italian woman. My platoon's first squad leader (and point man) spoke excellent Italian and likewise was married to an Italian. I learned Italian while in country, rating at a 2+ (limited working proficiency, plus) on the Defense Language Proficiency Test (DLPT). Given the relative density of Italian speakers in my platoon, Legion's commander put us on company boundaries with Folgore and at the front of all movements.

During the several days of preparations at Camp Albertshof, we had only limited exposure to the Folgore. Beyond the large rehearsals and few meetings, leaders below the company level had almost no social or work contact with the Folgore prior to air assault. Several days later, while reconnoitering my platoon's defensive engagement area, we encountered two Folgore scouts. (This was minutes after encountering the disabled cavalry truck.) They spoke little English so we spoke Italian. They were out of water and out of radio contact with their regiment. They relayed what information they had, which we relayed to the company, and shared their frequencies, which my RTO programmed into his radio. We shared our disposition with them, updated them on the regiment's positions as best we could, and directed them to the disabled truck for water.

The next night, in a patrol base, our weapons squad leader sighted two dismounts and initiated the alert plan. After exchanging a tense challenge and password, we realized they were Folgore and called out in Italian that we were friendly. We brought them into the patrol base, woke the squad leader with the best Italian, and exchanged information.

Recommendations:

- Produce a smart card (like a pointee-talkee) with translations of key questions and answers. Distribute to your junior

Paratroopers assigned to the 173rd Airborne Brigade attack opposing forces during a final battle as part of exercise Saber Junction 24 on 13 September 2024. (Photo by SGT Joskanny J. Lua)

Soldiers most likely to make first contact. Examples could include:

"Point to your friendly positions."
"Bring me to your commander."
"Do you need resupply?"
"Where did you see enemy?"
"Is this area secure?"

- Identify what all elements will be doing, even those templated in other AOs. Soldiers should at a minimum know which militaries and vehicles will be part of the broader campaign. Make initial contact with their leaders. Better an awkward first meeting during a busy planning week than in the dark or a firefight.

- Place leaders with relevant language or cultural skills at frictions points.[26] This can be as an LNO, a participant in key meetings, or a leader of the element closest to foreign partners.

- Incentivize culture and language education among leaders and Soldiers.[27] Protect time for attending on-base language classes. Integrate cultural and language exposure into fitness competitions, organizational days, Warrior Adventure Quest trips, or other unit off-sites. Schedule DLPT tests and reward Soldiers for high or improved results.

Rehearse Communications

Brigade, Folgore, and Legion had different primary, alternate, contingency, and emergency (PACE) communications plans and capabilities.[28] During the initial GAC, Folgore did not have the Joint Battle Command-Platform (JBC-P) for organic communications or reporting with brigade. Legion could see other companies and battalions in the brigade but not the Folgore CP or its companies. As part of the MPN, Folgore used a messaging device that reached the company but not the platoons. When enemy forces captured one of these devices, its usefulness vanished.

During the defense of an urban area, Folgore disseminated a reporting plan using Legion's net, and reports initially went smoothly. When the traffic encryption key (TEK) expired midway through the night, Legion's radios changed TEKs and Folgore went dark. When we could not raise the regiment, we moved to the Folgore CP to deconflict. Someone had switched to a different net to try and reach us, but the soldier manning the radio could not account for who had made the change, when, or why.

Recommendations:

- Avoid reliance on an app or phone. The chat function was the only expeditionary MPN available for creating the mission partner environment (MPE) but often seemed worse than nothing. It was a crutch early, caused confusion throughout, and became a liability once compromised.[29]

- If there is an MPE platform assigned, request it early to test capabilities, procure enough units, develop SOPs, identify a PACE plan, and conduct rehearsals.

- Plan communications windows. Report your communications windows and record those of other units. Consider using those communications windows even during planning and preparation.

- Nest PACE plans wherever possible. Report to higher if the PACE plan is unworkable or involves unusual risks.[30] Consider using a runner or running yourself. Rehearse the full PACE plan before the operation.

- Determine which radios will be on which nets at which times. Identify changes to your radio organization in the event of a shortage.

- Have a compromise plan that can survive different comms platforms. Continue to push the pro-word for that change over the compromised net.

- Assign radios to LNOs. This allows them to interpret information and make recommendations in real time.

Scrutinize Logistics

Logistical challenges were acute. Folgore brought one support platoon. Without a forward support company or headquarters company, resupply was held at the regimental level, and their supply personnel worked nonstop with limited protection. Since theirs were among the only vehicles in our AO, they were often targeted. Manning and vehicle shortages also posed challenges for moving personnel and equipment to the rear.

Legion's battery consumption was significantly higher than our counterparts. At one point, the Folgore supply officer simply rejected a resupply request, stating that they were out. Legion's XO bartered chem lights for batteries from an adjacent Folgore company and then requested resupply directly from brigade's support battalion.

Medical coverage posed a challenge both for cultural and practical reasons. Folgore casualty evacuation (CASEVAC) was coordinated over the MPN, preventing platoons from coordinating with Folgore when detached from the company. More importantly, the Folgore had few field litter ambulances (FLAs) and no escort vehicles available, so CASEVAC often required Legion gun trucks. This kept our paratroopers alive but took our most casualty-producing weapons out of the fight. We moved several casualties for kilometers by sled or litter, including out of the Folgore AO and over several hundred feet of elevation to reach our organic battalion's medical assets.

Recommendations:

- When task organizing, ensure the foreign unit has the supplies needed to sustain the company. Share resupply needs, possibly through a "smart card" of equipment and consumption rates by class. If needed, request additional assets from the brigade to set conditions for the foreign unit's resupply responsibilities.[31]

- Rehearse resupply operations. Identify key personnel and develop SOPs based on observed friction points. Determine early whether the foreign unit requires additional assets to secure its communications lines, and from whom.

- Introduce foreign supply specialists to your brigade's forward support companies and battalion support brigade. Ensure they understand resupply procedures. Likewise, meet their personnel and learn their procedures.

- Have a resupply PACE plan. Pack your vehicles and stage resupply caches to stretch how long your company can remain operational without higher support. Make a plan for direct brigade resupply in an emergency.[32]

- As a forcing function, request the brigade establish a standard time for CASEVAC completion. Train with the foreign unit and request additional assets from brigade if standard is not met.[33]

- Review the logistics and medical considerations of FM 3-16 and applicable checklists.[34-35]

Paratroopers from the 173rd Airborne Brigade walk from the landing zone during Saber Junction 24 in Germany on 4 September 2024. (Photo by SGT Christian Aquino)

Conclusion

The challenges we faced during our JMRC rotation were those we had expected, just more pronounced. To compensate, elements should remain organic where possible. When attached to a foreign partner, allow additional time for training, planning, preparation, and rehearsal. Place the right leaders at friction and decision points early. Socialize the different units with one another's methods and equipment. Above all else, maintain unity of effort during the privilege that is fighting alongside our partners.

Strength and Honor! First Rock! Sky Soldiers!

Notes

[1] Field Manual (FM) 3-16, *The Army in Multinational Operations*, July 2024, 3.

[2] Ibid.; see also Joint Publication (JP) 3-16, *Multinational Operations*, June 2024, I-2.

[3] "Complex NATO Exercise for the Folgore, Saber Junction 2024 Concluded in Germany," *Brigato Folgore*, 13 September 2024.

[4] See generally FM 3-16, 2-42; JP 3-16, II-6.

[5] "Press Release - Airborne Operations Kick Off Swift Response in Sweden," U.S. Army Europe and Africa, 7 May 2024, https://www.europe-africa.army.mil/ArticleViewPressRelease/Article/3766889/press-release-airborne-operations-kick-off-swift-response-in-sweden/.

[6] FM 3-90, *Tactics*, May 2023, Appendix B.

[7] FM 3-16, 2-25.

[8] 150-LDR-5012, "Conduct Troop Leading Procedures," Central Army Registry, 1 April 2024.

[9] See JP 3-16, Appendix A.

[10] FM 3-16, 2-121 and 3-29.

[11] Some documents may have restricted distribution; others are produced at the division level and below, unpublished, or only available upon request.

[12] FM 3-16, 2-107.

[13] Ibid.

[14] Ibid., III-12, 9. b.

[15] Ibid.

[16] FM 3-16, 2-12 and 3-6. See also JP 3-16, III-5, 3.a.

[17] See FM 3-16, 2-4 (addressing cultural differences among foreign commands).

[18] See JP 3-16, II-8 5.d. and II-8 5.e.

[19] FM 3-16, 2-3.

[20] Army Techniques Publication (ATP) 3-21.8, *Infantry Rifle Platoon and Squad*, January 2024, Appendix B, 90.

[21] FM 3-16, 2-27.

[22] Ibid., 2-29.

[23] See generally FM 3-90, 16; ATP 3-21.8, 4-92.

[24] FM 3-16, 2-63 through 2-69.

[25] See JP 3-16, II-11, 6. a. (1).

[26] FM 3-16, 2-95; see also JP 3-16, III-11, 8. d.

[27] 1LT Nicholas B. Naquin, "Multinational Success Requires Multilingual Troops," *Army* Magazine, April 2016, https://www.europeafrica.army.mil/Portals/19/documents/Eisenhower/2016/3rd%20Naquin.pdf.

[28] FM 3-16, Figure 1-2.

[29] Department of Defense (DOD) Instruction 8110.01, *Mission Partner Environment Information Sharing Capability Implementation for the DOD*; ATP 6-02.61, *Expeditionary Mission Partner Network Operations*; and FM 3-16, 2-20 and 3-19 through 3-22.

[30] MAJ Michael S. Ryan, "A Short Note on PACE Plans," *Infantry*, July 2013, https://www.moore.army.mil/infantry/magazine/issues/2013/Jul-Sep/Ryan.html.

[31] FM 3-16, Chapter 5.

[32] See JP 3-16, VI-11, g. (3).

[33] See generally FM 3-16, Chapter 6 (discussing medical considerations).

[34] Ibid., 5-48 through 5-55, 6-18 through 6-19.

[35] See also JP 3-16, Appendix E.

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Innovating Defense:
Generative AI's Role in Military Evolution

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The emergence of generative artificial intelligence (AI) indicates a paradigm shift in military research and application, echoing the revolutionary scientific framework presented by Thomas Kuhn in his ground-breaking *The Structure of Scientific Revolutions*.[1] This article delves into the profound implications and transformative potential of generative AI within the military sector, exploring its role as both a disruptive innovation and a catalyst for strategic advancement.[2] In the evolving landscape of military technology, generative AI stands as a pivotal development, reshaping traditional methodologies and introducing new dimensions in strategy and tactics. Its ability to process vast amounts of data, generate predictive models, and aid in decision-making processes not only enhances operational efficiency but also presents unique challenges in terms of ethical deployment and integration into established military structures.

This article navigates through the complex terrain of generative AI in military settings, examining its impact on policymaking, strategy formulation, and the broader implications on the principles of warfare. As we stand at the cusp of this technological revolution, this article underscores the need for a balanced approach that harmonizes technological prowess with ethical considerations, strategic foresight, and a deep understanding of the evolving nature of global security dynamics. We aim to provide a comprehensive overview of generative AI's role in shaping the future of military strategy and its potential to redefine the contours of modern warfare.[3]

Definition of Generative Artificial Intelligence

Generative AI has become a focal point in modern culture with the popularization of applications such as ChatGPT, Dall-E, and Midjourney. Both industry and academia have adopted its use in various innovative ways, adapting it to suit specific cases. Its computational nature streamlines the search for code syntax and helps create computer programs. Within the humanities, it can easily be used to generate written summaries on nuanced topics. Some applications can create images and even music. As an innovation, generative AI has "democratized access to Large Language Models" trained on the open-source internet; it specializes in producing "high quality, human-like material" for wide audiences.[4] Before expanding upon the complex consequences of generative AI's growing popularity, the terminology must be defined. Generative AI refers to models that produce more than just forecasts, data, or statistics. Its models are used for "developing fresh, human-like material that can be engaged with and consumed."[5]

Generative AI is not a specific machine learning model but, rather, a collection of different types of models within data science. The most important differentiation is the output, which mimics the creativity and labor of human capital. Over these last couple of years, we have been lucky enough to experience one of the rare moments in time classified as a scientific revolution while society began adapting to the changes associated with generative AI in industry.

Military Applications

In August 2023, the U.S. military announced "the establishment of a Generative Artificial Intelligence task force, an initiative that reflects the Department of Defense's [DoD's] commitment to harnessing the power of artificial intelligence in a responsible and strategic manner."[6] Task Force Lima, led by the Chief Digital and Artificial Intelligence Office (CDAO),

has been tasked to assess and synchronize the use of AI across the DoD to safeguard national security. Current concerns about the management of training data sets are the primary focus. In time, DoD aims to employ generative AI "to enhance its operations in areas such as warfighting, business affairs, health, readiness, and policy."[7] Due to the nature of military operations, the DoD has released risk mitigation guidance to ensure that responsible statistical practices are combined with quality data to produce insightful analytics and metrics.[8] For any military application, officials must consider the principals of "governability, reliability, equity, accountability, traceability, privacy, lawfulness, empathy, and autonomy" to establish ethical implementation during this transitive period.[9]

Prospective applications of generative AI include "Intelligent Decision Support Systems (IDSSs) and Aided Target Recognition (AiTC), which assist in decision-making, target recognition, and casualty care in the field;" each of these aims to reduce the mental load of operators and increase the accuracy of decisions in dangerous environments.[10] Historically, the U.S. military has implemented AI in "autonomous drone weapons/intelligent cruise missiles" and witnessed "robust results and reliable outcomes in complex and high-risk environments."[11] Although the AI in those weapon systems does not necessarily rely on generative AI models, it showcases a promising ability to follow the foundational ethical principals in American governance. Figure 1 illustrates DoD's process of adopting AI into new warrior tasks. This system will replace previous practices to cultivate an improved data driven military.[12]

Futuristic applications of generative AI include the planning of routes, writing of operation orders, and formulating of memorandums. Furthermore, the defense industry has been working on "3D Generative Adversarial Networks" capable of "analyzing and constructing 3D objects."[13] These models "become an increasingly important area to consider for the automation of design processes in the manufacturing and defense industry."[14] As the role of creating military goods changes over time, leaders must shift their focus towards thinking deeper about problems and less about the labor process. They will need to develop critical-thinking skills that allow them to understand generative AI outputs based on data inputs to avoid ethical concerns that stem from statistical practices. Many companies in the United States have already faced ethical dilemmas resulting from statistical models, to include fatal crashes from self-driving cars to malpractice lawsuits in hiring techniques.[15] Current generative AI models may not be trained on military data sets or have a poor understanding of nuanced military policy. This does not necessarily mean military personnel must refrain from using these platforms, but there is a social burden to take appropriate precautions. The recent breakthroughs of generative AI in the public market will gradually reach a point where it can be used for military applications; however, it must first address:

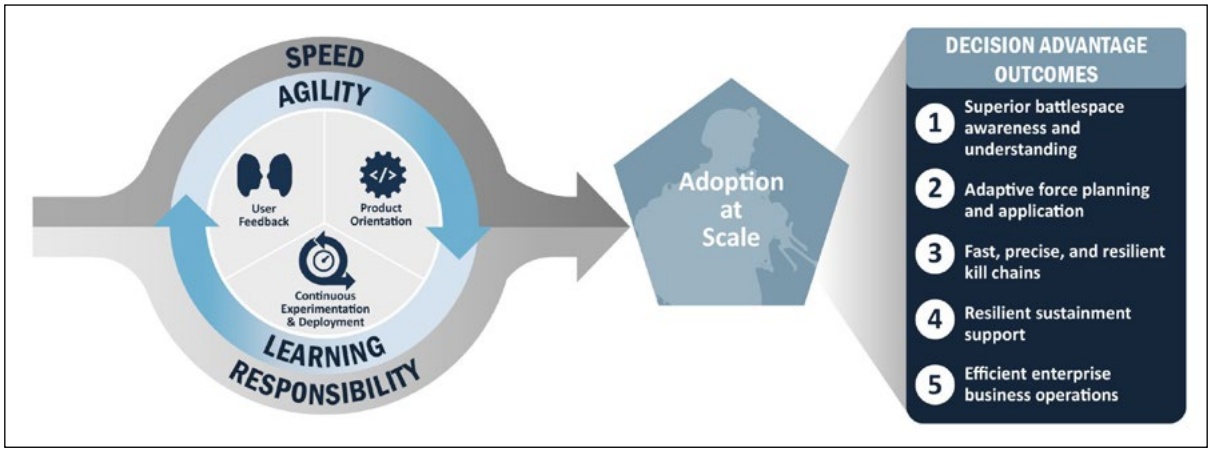
> *…1) high risks means that military AI-systems need to be transparent to gain decision maker trust and to facilitate risk analysis; this is a challenge since many AI-techniques are black boxes that lack sufficient transparency, 2) military AI-systems need to be robust and reliable; this is a challenge since it has been shown that AI-techniques may be vulnerable to imperceptible manipulations of input data even without any knowledge about the AI-technique that is used, and 3) many AI-techniques are based on machine learning that requires large amounts of training data; this is challenge since there is often a lack of sufficient data in military applications.*[16]

The next era of military leaders must be aware of their new burden, and in time, officer education systems will shift to reflect these emerging roles.

Generative Artificial Intelligence as a Disruptive Innovation

Generative AI can be classified as a disruptive innovation in accordance with the framework presented in Clayton Christensen's *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. In his book, Christensen explains why great companies in established markets fail over time. The United States is the leading firm within the market of military power. Although this market is

Figure 1 — Military Adaptation Process of Generative AI



not monetarily based, every market experiences two types of technological change: sustaining and disruptive. Sustaining technology supports current market structures and is led by established firms seeking to satisfy current customers' needs. Disruptive technology, however, disrupts/redefines markets' preferences by finding strengths in historically undeveloped characteristics. It was in this aspect, the process of changing market dichotomies that "consistently resulted in the failure of leading firms."[17] Established firms seek to develop new technology that appeals to their current market based on the existing value system.

History has witnessed the fluidity of battlefield technology (for example, the development of bows, rifles, machine guns, and tanks). Each of these advancements restructured warfare and, in some cases, upset the entire world order. For instance, take the fall of Russia in the 19th century during the Industrial Revolution. At the time Russia was a regional power, but it failed to industrialize as quickly as Germany and was unable to organize a strong military industry by World War 1. Ultimately, the failure to innovate led to heavy Russian losses on the eastern front to a technically superior, but much smaller, German army.[18] Military value systems reflect what wins on the battlefield. Typically, leaders in established firms/countries overvalue historical approaches and fail to realize the potential of entrants (competing countries developing disruptive technology) in niche warfighting tasks until disruptive technology has advanced too far. Once disruptive technology redefines military value systems and operating procedures, it is too late for sustaining countries to catch up, and they are surpassed on the global stage.

Disruptive technology is dangerous to established firms because there is "considerable upward mobility into other networks" while the market "is restraining downward."[19] The essential idea here is that disruptive technology starts off marketing itself to customers with limited resources yet grows until it can steal bigger contracts. Large firms' managers often have a difficult time justifying "a cogent case for entering small, poorly defined lower end markets that offer only lower profitability."[20] Within warfare, this is due to superpowers' need to focus on the upmarket value networks, or rather, the connections/transactions between their territories and the current largest threats to national security. Imagine the President of the United States asking Congress in the mid-2010s to invest heavily in developing generative AI, a product that had no predictable application, rather than focusing on the war in Afghanistan. In hindsight, it would have been a great way to increase the American lead in military power, but until the Russo-Ukrainian War in 2022, perhaps no one could have envisioned the impact of AI in producing kill chains (the concept of identifying targets, dispatching forces, attacking, and destroying said targets). This war has served as a great innovator, notably for autonomous drones that can use satellite imagery and image recognition software to identify hostiles.[21] These drones communicate with larger servers and drop explosives on the targets, vastly accelerating kill chains compared to historical operating procedures that required gathering intelligence, deploying forces, and warfighting.[22] The Chinese Communist Party has heavily invested in AI capabilities and aims to be the world leader by the mid-2030s, exemplifying America's newfound military competition due to this disruptive technology.

History has witnessed the fluidity of battlefield technology (for example, the development of bows, rifles, machine guns, and tanks). Each of these advancements restructured warfare and, in some cases, upset the entire world order.

While disruptive entrants take technology as a given and operating procedures as variable, sustainers see the opposite with operating procedures as fixed and technology as variable. In order to maintain success, military countries abandon niche practices and focus on maintaining the status quo. Rational managers in established countries do not have the luxury or need for risk. In time, the fluctuations of warfare create a cycle as countries uproot power structures, establish governance systems, and are eventually usurped by innovative conquerors. The key to remaining upmarket — a successful superpower — requires established countries to adopt practices to manage disruptive change. Large militaries will experience difficulty field testing emerging technology, so it is a good practice to establish external research teams. These smaller organizations will not expect great results; their key task must instead be to find organizational knowledge to build projects upon. It is impossible to predict the fluidity of warfare, so militaries must actively stay on guard.

The establishment of Task Force Lima is a key example of the United States managing the disruptive nature of generative AI within the military market.[23] Christensen recommends three main strategies for established firms to overcome disruptive change. One such strategy would be pouring resources into new markets to make them more profitable, essentially affecting growth rates of emerging markets. Companies may instead elect to wait until the emerging market is already defined and intervene as soon as an opportunity presents itself. Lastly, to handle disruptive change, some companies may place all responsibility on commercializing disruptive technologies in small, outside organizations.[24] DoD has been forced to utilize the latter option. A failure to manage AI within the military domain would result in a similar decline in power as Russia faced in the 19th century. The American military seeks to create new capabilities for utilizing small teams outside of existing processes and values to lead innovation, avoid security crises, and withstand warfare changes.

Generative AI in Military Strategy

In the context of military policy and warfighting, the rise of

generative AI significantly impacts the strategic and operational frameworks of defense organizations. The integration of this technology into military applications necessitates a nuanced approach to policymaking, blending scientific understanding with ethical and strategic insights from the humanities. C.P. Snow, renowned author of *The Two Cultures*, aimed to explain the historical divide between humanitarian and natural science studies in British society.

He stated that prior to the Industrial Revolution the societal elite historically educated their youth through reading and writing to teach them the ways of governance, mostly through the subjects of philosophy, law, and English.[25] The Industrial Revolution introduced another domain of study — applied sciences — that gave the lower and middle class a new route to improve their own lives through the harnessing of the natural world. Snow's general idea was that most humans sought to improve their condition through the Industrial Revolution, which finally afforded the study of sciences to be applied to everyday life. Over time they increased their studies to benefit industrialization, while the elite remained focused on matters of literature and governance. The lasting split in academia between the two cultures was exasperated in government through its lack of communication with industry.

The application of generative AI in military contexts, such as autonomous weapon systems and decision support tools, requires policies that balance technological capabilities with ethical considerations, including international humanitarian law and the rules of engagement. Governing bodies in America and internationally, such as the United Nations, have found it difficult to regulate advanced cyber operations. Now, with the introduction of advanced statistical models, it is imperative that decision makers understand the implications of using them and the impacts within society based off the models and training data used. Generative AI introduces new dimensions in warfighting tactics, from automated target recognition to intelligence analysis. Military strategies must evolve to incorporate these AI-driven capabilities while considering their implications on battlefield ethics and soldier safety. Failed recognition could result in civilian casualties and infrastructure destruction if not properly managed. The integration of AI in military operations necessitates reforms in military education and training. This includes incorporating interdisciplinary studies that blend technology with ethics, philosophy, and military strategy, thus preparing Soldiers and commanders for AI-augmented warfare. The U.S. Army is pivoting towards merging the two cultures by cultivating data-competent leaders who won't have to rely on analysts to garner insights.[26]

The primary challenge lies in integrating AI capabilities into existing military structures and operations. This requires not only technological adaptation but also doctrinal and strategic shifts. Perhaps the worst thing that could happen is the widening of the cultural gap, as technologists flee to industry and away from government roles. If integrated well into operations, the use of AI offers opportunities for enhanced operational capabilities, such as improved situational awareness, faster decision-making, and more accurate targeting, contributing to the overall effectiveness of military operations. Generative AI redefines the character of warfare and security, posing new questions about the nature of conflict, the role of human soldiers, and the future of international security dynamics. Failure to legislate and implement AI in a timely manner will certainly result in the abuse of highly lethal AI kill chain systems by hostiles unbounded by ethical considerations.

The integration of generative AI into military policy and warfighting presents both challenges and opportunities. It necessitates a new paradigm in military strategy and policymaking, one that harmonizes the advancements in AI with the ethical, strategic, and human aspects of warfare. As military organizations adapt to this AI-driven landscape, the collaboration between technical experts and strategists becomes crucial in shaping effective, ethical, and sustainable military policies and practices.

Conclusion

Generative AI is a disruptive innovation that will completely restructure the military industry. In real time, we are experiencing one of the greatest scientific revolutions in the history of mankind. If you are not convinced, in order to illustrate the astonishing advancements of generative AI, go back and reread the introduction: It was written by ChatGPT 4 after training it on this article, which took

(Graphic courtesy of Army Research Laboratory Public Affairs)

approximately 30 seconds. This type of technology was unimaginable only a few years ago, just like the incredibly lethal kill chains in Ukraine. Within the next five years, untraceable amounts of extraordinary science will continue to occur until both military and industry have compartmentalized generative AI's capabilities. Until then, policymakers must continue to exercise caution while implementing AI in warfare and communicate across the cultural gap with scientists who can explain the inner workings of these complex models. The world may be in the midst of great ambiguity as we hold our breath to see what great weapons will emerge from this unprecedented revolution, but at least one thing is certain, by the end of this the world will surely be changed forever.

Notes

[1] Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 4th ed. (Chicago: The University of Chicago Press, 2012).

[2] Disruptive innovation is outlined in Clayton M. Christensen's *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Boston: Harvard Business Review Press, 2013).

[3] ChatGPT 4 was used to manufacture the introduction as well as various subsections of the article to synthesize sentences that were edited and then implemented. The graphic on page 60 was created using Adobe Firefly.

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[13] Michael Arenander, "Technology Acceptance for AI Implementations: A Case Study in the Defense Industry about 3D Generative Models," (Master of Science thesis, KTH Royal Institute of Technology, 2023).

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[17] Christensen, *The Innovator's Dilemma*, 24.

[18] Paul Scharre, *Four Battlegrounds: Power in the Age of Artificial Intelligence* (New York: W.W. Norton & Company, 2023).

[19] Ibid., 24.

[20] Ibid., 72.

[21] Scharre, *Four Battlegrounds*.

[22] Ibid.

[23] DoD, "DoD Announces Establishment of Generative AI Task Force."

[24] Christensen, *The Innovator's Dilemma*, 107.

[25] C.P. Snow, *The Two Cultures* (Cambridge: Cambridge University Press, 2012).

[26] Erik Davis, "The Need to Training Data-Literate U.S. Army Commanders," *War on the Rocks*, 17 October 2023, https://warontherocks.com/2023/10/the-need-to-train-data-literate-u-s-army-commanders/.

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The 89th Infantry Division's Rhine Crossing: Training for Victory

CHRIS WICKERS

The crossing of the Rhine River by Allied forces in March 1945 served as a pivotal moment in World War II, marking the beginning of the final push into Nazi Germany. The 89th Infantry Division, known as the "Rolling W" for its distinctive shoulder patch, played a crucial role in this historic event, forging the assault across the Rhine under heavy fire. The division's success was largely due to the intensive pre-deployment training its Soldiers had undergone since the unit's activation almost three years earlier in July 1942. This rigorous regimen, which focused on physical fitness, combat skills, and unit cohesion, prepared 89th Soldiers for the challenges they would face in the European theater. The final pre-deployment training in Europe, with its emphasis on forced marches and combat problems, honed their skills and readiness for the assault crossing of the Rhine. The 89th Infantry Division's achievements during this pivotal battle serve as a testament to the critical importance of thorough pre-deployment training for modern military forces.

Rigorous Training Regimen

The 89th Infantry Division's journey to the Rhine began with a grueling training program that pushed the limits of Soldiers' endurance and combat readiness. From the moment it was activated, the emphasis was on building a force capable of withstanding the rigors of modern warfare of the time. Physical fitness was a top priority, with Soldiers engaging in forced marches, obstacle courses, patrols, and endurance tests designed to build stamina and toughness. The division's training regimen was relentless, with frequent forced marches under full combat load. Obstacle courses challenged Soldiers' agility, strength, and determination, featuring obstacles such as walls, trenches, and barbed wire that simulated the conditions they would encounter on the battlefield.

One of the most iconic photos of WWII, Soldiers of the 89th Infantry Division cross the Rhine River in assault boats, March 1945. (U.S. Army photos)

Combat skills were honed through live-fire exercises, simulated attacks, and proficiency tests that ensured every Soldier was an expert with their assigned weapons and equipment. Soldiers spent countless hours on the firing range, mastering the use of rifles, machine guns, and other infantry weapons. They also received extensive training in tactics, fieldcraft, and combat communications, ensuring they could operate effectively as part of a cohesive fighting force.[1]

During training, 89th Infantry Division Soldiers haul 40-pound C-ration cases up a long trail.

Unit cohesion was another critical aspect of the training, with the division participating in large-scale maneuvers that tested its ability to operate as a unified fighting force. In November 1943, the 89th slogged through the mud and swamps of Louisiana during maneuvers, testing Soldier resilience and teamwork under challenging conditions. These exercises involved coordinating the movement and actions of personnel, vehicles, and support units, simulating the complexities of real combat operations.

The Louisiana maneuvers were a grueling test of the division's endurance and adaptability. Soldiers had to navigate through dense swamps and marshes, often wading through waist-deep water while carrying their equipment. They faced simulated enemy attacks, artillery barrages, and logistical challenges, all while maintaining their cohesion and operational effectiveness.

These maneuvers revealed several areas needing improvement. In remarks made to his officers, MG Thomas Finley, the commanding general of the 89th, stated: "We are well shaken down; we have discovered deficiencies in our equipment and organization and I know we also have discovered some deficiencies in our men. This is the period in which regimental and battalion commanders must give thought to the functioning of their units, particularly their staffs. You can't make a one-man show out of running your outfit. You must have a smooth-running staff. If you have command difficulties in the subordinate units, it is time to make adjustments…"[2]

The Louisiana maneuvers were followed by two months of strenuous training in the hills and canyons of California's Hunter Liggett Military Reservation, where Soldiers hacked trails through brush, packed supplies up steep grades, and engaged in simulated combat scenarios. Soldiers learned to navigate through dense forests and conduct operations in difficult terrain, honing their skills in land navigation, patrolling, and small-unit tactics. They also participated in live-fire exercises and simulated assaults, testing their ability to coordinate infantry, artillery, and other supporting elements in realistic combat scenarios.

The rugged terrain and extreme conditions of the Hunter Liggett training area provided an ideal environment for preparing the division for the challenges they would face in Europe and to work out the issues discovered during the Louisiana maneuvers.

These exercises not only prepared the division for the physical demands of combat but also fostered a sense of camaraderie and trust among the men, which would prove invaluable on the battlefield. The shared hardships and challenges of the training process created strong bonds between Soldiers, fostering a sense of unity and mutual reliance that would be essential in battle.

Throughout the training process, the 89th Infantry Division's leadership emphasized the importance of discipline, attention to detail, and a relentless pursuit of excellence. Soldiers were constantly evaluated and held to the highest standards, ensuring that they were prepared to meet the demands of combat operations. This uncompromising approach to training instilled a sense of confidence and professionalism within the division, enabling them to face the challenges of the Rhine crossing and subsequent operations with determination and resilience.

The final months before deployment were spent at Camp Butner, NC, where the division engaged in yet another series of intensive training exercises focused on forced marches, proficiency tests, and combat problems. The division's training at Camp Butner was comprehensive, focusing on both individual and unit-level skills. Soldiers underwent more rigorous physical conditioning, weapons training, and tactical exercises. The camp's terrain, which included wooded areas and open fields, allowed for realistic combat simulations, preparing the troops for the varied landscapes they would encounter in Europe.[3]

Movement to the European Theater

After completing their training at Camp Butner, the 89th Infantry Division moved to the European theater of operations by ship. They departed from the United States on 10 January 1945, arriving in Le Havre, France, 11 days later. Le Havre, a strategic port city on the English Channel, served as a crucial entry point for American troops entering the European mainland.

Upon arrival in Le Havre, the division underwent additional training and acclimation to European conditions at Camp

Lucky Strike. This period allowed the Soldiers to adjust to the realities of the war zone and fine-tune their skills before engaging in active combat operations.

The thorough training received since activation, combined with the final preparations at Camp Lucky Strike, proved invaluable as the 89th Infantry Division entered combat. Their first action came on 12 March 1945, when they crossed the Moselle River and captured the German city of Saarburg.

Crossing the Rhine

Following the successful Moselle crossing, the 89th Infantry Division continued its eastward advance, participating in the Allied push towards the Rhine River. The Rhine crossing was a crucial operation in the final stages of the war in Europe, as it would allow Allied forces to penetrate deep into the German heartland.[4]

The 89th's involvement in the Rhine crossing came as part of the larger U.S. Third Army operation. On 26 March 1945, just two weeks after their Moselle crossing, elements of the division began their assault across the Rhine. The crossing was a complex operation under heavy enemy fire involving coordinated efforts of infantry, artillery, and engineer units.[5]

Troops, vehicles, assault boats, and other equipment fill the streets of St. Goar, Germany, as the 89th Division prepares to cross the Rhine on 26 March 1945.

The division's rapid advance during this operation was impressive. By 30 March, the 89th Infantry Division had successfully completed its Rhine crossing operation and secured its objectives. General Finley, in a message to his troops, described the challenging conditions they overcame: "The Germans strongly defended the riverbank and the leading waves were met by fire from machine guns, 20mm antiaircraft and artillery. Losses were heavy but there was no faltering; the boats went on and our troops landed and attacked the enemy wherever they found him..."[6]

The successful crossings of both the Moselle and Rhine rivers demonstrated the 89th Infantry Division's combat readiness and effectiveness. These operations showcased the division's ability to execute complex maneuvers, adapt to challenging terrain, and maintain a rapid pace of advance — all skills honed during their extensive training and now refined through combat experience.

Resilience in the Face of Atrocity

As they continued to push east, the 89th Infantry Division liberated Ohrdruf concentration camp on 4 April 1945, demonstrating the crucial role of their comprehensive pre-deployment training in preparing Soldiers for the harsh realities of war. As the first Nazi concentration camp liberated by U.S. troops in Germany, Ohrdruf presented a scene of unimaginable horror that put the division's mental and emotional resilience to the test.

The rigorous training regimen undergone by the 89th had not only honed their combat skills but also fortified their psychological preparedness. Months of intense physical conditioning, combat simulations, and team-building exercises had fostered a strong sense of unit cohesion and individual resilience. This proved invaluable as Soldiers faced the grim task of processing the atrocities they encountered.[7]

Key Takeaways: Pre-Deployment Training

The 89th Infantry Division's Rhine River crossing exemplifies the transformative power of comprehensive pre-deployment training. Their experience offers critical insights for today's leaders:

- **Building Battlefield Resilience:** The 89th's relentless physical conditioning program is a model for fostering exceptional soldier resilience. Modern training programs can mirror this approach, ensuring troops possess the stamina and endurance to thrive in demanding operational environments.

- **Optimizing Soldier Performance:** The 89th's training seamlessly integrated rigorous combat skills training with unit cohesion exercises. This methodology maximized individual proficiency while fostering a strong sense of teamwork, a critical element for battlefield success.

- **Developing Adaptable Units:** The Louisiana maneuvers exposed weaknesses and instilled

adaptability in the 89th. Modern training exercises can replicate this by injecting unforeseen challenges that test a unit's ability to think critically and adjust tactics under pressure. This fosters agile and resourceful units capable of handling contingencies.

The 89th's legacy underscores the critical role pre-deployment training plays in creating a mission-ready force. By incorporating these lessons — building battlefield resilience, optimizing soldier performance, and developing adaptable units — leaders can equip their troops to face any challenge and achieve operational excellence.

Personal Anecdote

My father, SGT Ardie Wickers, was a veteran of the 89th Infantry Division. He rarely spoke of his combat experiences crossing the Rhine. However, he frequently recounted the grueling training. He firmly believed this training was essential to the 89th's success and his own survival. In his view, it provided him with the essential skills and, most importantly, the confidence to navigate the complexities of combat.

This emphasizes the human dimension of pre-deployment training. It goes beyond physical and tactical skills, equipping Soldiers with the mental fortitude necessary to navigate the psychological demands of war like those found at Ohrdruf concentration camp. Leaders who prioritize thorough pre-deployment training invest not only in mission success but also in the well-being of their Soldiers.

The 89th Today

The 89th Infantry Division's legacy continued after World War II when it was reactivated as a Reserve unit in 1947, with its headquarters stationed in Wichita, KS. In 1959, the division was redesignated as the 89th Division (Training). However, in 1973, the division colors were cased, and the shoulder patch (but not the lineage and honors) was carried on by the newly formed 89th Army Reserve Command (ARCOM). ARCOMs were not tactical commands but rather regional organizations comprising various unrelated units. Upon mobilization, units within the ARCOMs would be assigned to active-duty units with which they were aligned.

The 89th ARCOM later underwent several redesignations, becoming the 89th Regional Support Command in the late 20th century and then the 89th Regional Readiness Command in 2003. In its 2005 Base Realignment and Closure (BRAC) recommendations, the U.S. Department of Defense proposed realigning the Wichita U.S. Army Reserve Center by disestablishing the 89th Regional Readiness Command. This recommendation was part of a larger effort to reengineer and streamline the command-and-control structure of the Army Reserve, which led to the creation of the Northwest Regional Readiness Command at Fort McCoy, WI. Today, the 89th Infantry Division's legacy lives on in the form of the 89th Sustainment Brigade, a Reserve unit carrying on the division's proud heritage.[8]

Notes

[1] 89th Infantry Division Historical Board, *The 89th Infantry Division: 1942-1945* (Washington: Infantry Journal Press, 1947), 37.

[2] Ibid., 53.

[3] Wikipedia, "Camp Butner," https://en.wikipedia.org/wiki/Camp_Butner.

[4] "89th Infantry Division," Army Divs, https://www.armydivs.com/89th-infantry-division.

[5] "The Rhine Crossings in World War II," United States Holocaust Memorial Museum Encyclopedia, https://encyclopedia.ushmm.org/content/en/article/the-rhine-crossings.

[6] 89th Infantry Division Historical Board, The 89th Infantry Division, 108.

[7] "The 89th Infantry Division," United States Holocaust Memorial Museum Encyclopedia, https://encyclopedia.ushmm.org/content/en/article/the-89th-infantry-division.

[8] Wikipedia, "89th Sustainment Brigade," https://en.wikipedia.org/wiki/89th_Sustainment_Brigade.

Chris Wickers comes from a family with a proud military heritage. His father, SGT Ardie Wickers, served with distinction in World War II as part of 1st Battalion, 354th Infantry Regiment, 89th Infantry Division, participating in the historic Rhine River crossing during combat operations in the spring of 1945. Following in his father's footsteps, Chris joined the U.S. Marine Corps and served in the Infantry from 1985-1989, taking on the roles of rifleman and combat rubber raiding craft coxswain with Battalion Landing Team 1/1. This unit specialized in amphibious operations, combining traditional infantry skills with maritime capabilities.

Conducting Port Operations

1LT RYAN BOBBITT

As a new Infantry lieutenant, I thought I knew what the first few years of my career would look like. I would spend a few months in the operations and training staff section (S-3), get a platoon, and become an executive officer (XO) or even a specialty platoon leader. But on my first day at the 5th Battalion, 20th Infantry Regiment, my battalion XO took me into the logistics and sustainment staff section (S-4). What was initially supposed to be "a couple of weeks to help them catch up on some work" very quickly turned into a couple of months. Before I knew it, I was the S-4 officer in charge (OIC).

Military vehicles are lined up in July 2023 during load-out operations in preparation for a deployment. (Photos courtesy of the 833rd Transportation Battalion)

The battalion was about to partake in Orient Shield 2023, a yearly joint exercise between the U.S. and our Japanese allies. We were going to Japan, and this exercise was a trial by fire in my new role. Between sustaining the battalion and managing life-support contracts and purchases abroad, I gained tons of experience and learned daily. Port operations are the most critical, costly, and high-risk part of deploying a unit across the Pacific. If a unit cannot successfully deploy its equipment, it doesn't matter how well it can plan operations or sustainment. It's a critical mission; we must know how to do it well. And somehow, with no experience in this subject, I found myself responsible for the success or failure of this small part of our bigger mission. Ensuring success at a port cannot be guaranteed. Still, with proper planning and preparation, you can safely get your unit's equipment where it needs to be on time.

The first step to ensuring success at the port is assembling the correct team to execute and manage operations. The OIC and NCO in charge (NCOIC) will be responsible for the operations. You need at least one unit movement officer (UMO), preferably an officer or senior NCO. Several UMO-qualified Soldiers are a must for larger operations. A designated UMO representative from each subordinate unit is the best way to manage large battalion or brigade movements. The team needs hazardous material (HAZMAT) certifiers; the number depends on how many HAZMAT containers you have. Vehicle crews will be the bulk of your workforce. Having the correct number of crews to drive vehicles (and ground guide) around the port and on/off ships is necessary to ensure your load rate is high enough. Everything at the port costs money. It costs money to keep the ship docked, to keep vehicles parked on the docks, and to pay the countless workers around the clock. This money is not coming directly out of your pocket, but for every minute wasted, the Army is paying a bill and someone will want answers.

The second step is having the correct paperwork at the port. Whether you are embarking or debarking, your paperwork should look very similar. You must have several copies of your unit deployment list (UDL). This complete UDL should include transportation control numbers (TCNs), bumper numbers, models, nomenclature, dimensions, and serial numbers. Out of all this information, the one that matters the most is the TCN. The TCN controls everything; it is a unique code that each piece of equipment gets, and that is how load plans are built.

In addition to the UDL, you or someone on your team needs to have access to the Transportation Coordinators' Automated Information for Movements System (TC-AIMS) website. TC-AIMS is the unclassified system where units will provide their inputs for movements and deployments. The battalion S-4 or UMO can help get you this access. TC-AIMS is how UDLs are constructed; every piece of equipment is built into this system and added to the UDL. Nothing should be changing during port operations on the UDL, but it will be a helpful tool to pull data if needed. A designated HAZMAT-certified Soldier needs to have the required paperwork for every HAZMAT container. At a minimum, this paperwork needs to include a Department

of Defense (DD) Form 2890, a safety data sheet (SDS), and an Emergency Response Guide (ERG). HAZMAT on rail or linehaul also needs to have a DD Form 626. The HAZMAT representative at the port needs to have at least five copies of each. Every sensitive item container will have a corresponding DD Form 1907, which shows a chain of responsibility for the containers. A member of the port team needs copies of this form as well. The DD Form 1750 records the contents of each container. Again, you need copies of these. While it is essential to have hard copies, it is incredibly beneficial to utilize a shared drive or another Army system to digitally store these files. Everyone at the port will want copies of this paperwork, so the team needs to know where to pull the paperwork from in case you run out.

Similar to waiting at an airport, ships have delays. Sometimes they will arrive early and sometimes they will arrive late. Unlike an airport, no monitors and signs show you exactly when and where your ship will arrive. It is essential to remain flexible. There is too much out of your control to stay exactly on the timeline. With that said, there is plenty within your control. Working at a port, similar to a railhead, is not exciting for most, especially for your young Soldiers executing the mission. They will be spending long days driving, walking, and dealing with countless inconvenient problems. Many of these young Soldiers will not always see the immediate importance of what you are doing. As with any Army operation, it is crucial to provide priorities, task, purpose, and the why. Setting these conditions early, with good NCO support, will significantly alleviate many headaches.

While you can scramble to get another driver to the port or fix some paperwork on the spot, the one thing you cannot fix is lost equipment. You must track everything; you need to know where each container and vehicle is parked. You need to know when and where they are being loaded. On the back end, you need to know what vehicles are convoying, what vehicles are getting loaded on rail, and what vehicles are being moved by commercial line haul. Everything must be tracked and recorded. For larger moves, it is inevitable that, at one point, someone will lose contact with a piece of equipment. When this happens, the port OIC will probably be the first to receive a phone call. Just like during tactical operations, it is imperative just you have a cell responsible for battle tracking 24/7. Depending on the scale of your move, your battalion S-3 shop may have some young lieutenants and captains perfect for this job.

As with any Army operation, it is crucial to provide priorities, task, purpose, and the why. Setting these conditions early, with good NCO support, will significantly alleviate many headaches.

The OIC and NCOIC need to stay very closely tied with their point of contact (POC) at the port. In Japan, there was a Japanese civilian who saved me many times. Having a good relationship with your POC should not start when you get there. You need to get in contact early as this will set you up for success. At most ports, the civilians rule all. It does not matter how squared away you think your paperwork is; if they say “no-go,” it’s a no-go. This is another essential thing to emphasize to your entire team at the port. The last thing you need is a Soldier and a port employee arguing about a DD 1750.

Your POC may not always be a civilian; it could be a Soldier. Regardless, there will be one person upon arrival who will have the answers to all your questions. They will know the vessel timeline, and you must get this timeline quickly to do your backwards planning. As previously mentioned, this timeline can change often, so it is essential to ask daily about any changes. I recommend having at least one daily touchpoint with your POC. They will be able to answer your questions, provide guidance, and help prioritize the next day’s tasks. More importantly, they will tell you if you are on or off track.

Port operations are not difficult to conduct. If the correct team is assembled, with the right paperwork, you will be able to fix any problem that arises. Manage your equipment, prioritize safety and control, and the rest will fall into place.

A military vehicle waits to be loaded onto a vessel in July 2023.

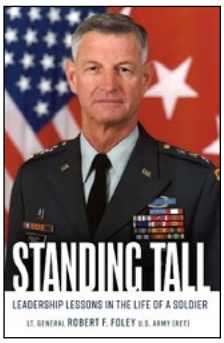
1LT Ryan Bobbitt is currently serving as a platoon leader in the 5th Battalion, 20th Infantry Regiment out of Joint Base Lewis-McChord, WA. He commissioned after graduating from the University of New Hampshire. He spent eight months as the battalion S-4, deploying his unit to multiple training exercises including Orient Shield 2023 and the National Training Center at Fort Irwin, CA.

Book Reviews

Standing Tall: Leadership Lessons in the Life of a Soldier

By LTG (Retired) Robert F. Foley
Philadelphia: Casemate,
240 pages, 2022

Reviewed by LTC (Retired)
Rick Baillergeon



The Greek philosopher Aristotle once said, "The whole is greater than the sum of the parts." It is a phrase which has been utilized numerous times in a wide variety of circumstances. This is a phrase which clearly characterizes LTG (Retired) Robert Foley's volume, *Standing Tall: Leadership Lessons in the Life of a Soldier*. It is a book which perfectly meshes various parts (focus areas) to form a superb whole (book).

Readers will find that the "individual" parts of *Standing Tall* serve several purposes for Foley. First, this is a memoir which concisely captures the 37 years of commissioned service he provided his country. Second, it is a vehicle in which he pays tribute to those who were instrumental in his success in life. Third, he utilizes the volume to provide his views and historical contexts on several events in which he served. Finally, it is a means to share leadership lessons he learned from others or experienced himself with readers. Let me address each of these, but remember they are effectively blended throughout the volume.

Regarding the memoir portion of the book, there is unquestionably much for Foley to address. Let me provide a succinct look at Foley's career for those who may be unfamiliar with him and his service. He graduated from the U.S. Military Academy (USMA) at West Point, NY, in 1963 and retired from the U.S. Army in September 2000. During that period, Foley's assignments included serving as a mortar platoon leader and company commander in the Vietnam War, commanding both a battalion and brigade with the 3rd Infantry Division in Germany, serving as the 2nd Infantry Division assistant division commander in Korea, serving as commandant of cadets at USMA, and culminating his career as the commanding general of Fifth Army.

In a career of this magnitude, there are obviously many highlights. Clearly, the one which will stand out for readers is the fact that LTG Foley was awarded the Medal of Honor for his heroism on 5 November 1966 while serving as a company commander in Vietnam. A portion of his Medal of Honor citation reads, "His outstanding personal leadership under intense enemy fire during the fierce battle which lasted for several hours inspired his men to heroic efforts and was instrumental in the ultimate success of the operation."

Those who know LTG Foley characterize him as being an extremely humble person. This humility is highlighted in the volume's discussion of the Medal of Honor. Foley does not spend significant time discussing his actions which led to receiving the nation's highest medal for valor. In fact, the preponderance of this discussion focuses on the actions of his Soldiers during the battle. There is no question readers will want to seek further information on Foley's actions that day from other sources.

Within the volume, Foley makes it a point of emphasis to acknowledge the people who had such an impact in his life and were instrumental in his success. This includes the Soldiers he served with, both those he led and leaders he served under. Most importantly, throughout the volume, he stresses the sacrifices of his family and the support he received from them during his career. This volume is a tribute to their enormous role in his career and life.

Standing Tall also provides Foley with a forum to provide his thoughts and historical overviews on events he was involved in. In particular, Foley devotes an entire chapter to the Vietnam War. Within the section, he offers a concise, yet highly informative, synopsis of how and why the United States became involved in Vietnam. He additionally provides his own opinions on this involvement. In total, this chapter truly sets the conditions for when Foley addresses his own involvement in the Vietnam War.

Finally, as the title suggests, this is a volume which addresses leadership. However, I found it unique in how he focuses on this subject. Many leadership volumes are organized as chapters related to specific topics and normally accompanied with bullet comments related to the topic. What Foley has done so effectively is interject his leadership lessons as they relate to events in his memoir. I found this approach far more relevant and effective than others I have seen.

The leadership lessons Foley offers are certainly relevant and value-added from civilian to military, from private to general officer. They are a mix of lessons he received or learned from others and those he gathered from personal experience. They run the gamut of subjects and relate to both combat and garrison environments and life in general. In summary, there is something to be gleaned for everyone.

There are several strengths in the book which greatly contribute to its quality. The first is the outstanding readability of the volume. *Standing Tall* is crafted in a highly conversant style. Additionally, I found no agendas (hidden or not) within the volume. Foley did not write this book to inflate his ego or deflate others. These factors combine to make this a volume which will entertain as well as inform.

The second strength is the supplementary material he has

placed within the book, which greatly personalizes the experience for readers. This starts with an outstanding photograph section inserted in the volume. Foley has placed more than 30 photographs to complement his written words. These key on significant events in his career, the Soldiers he served with, and his family.

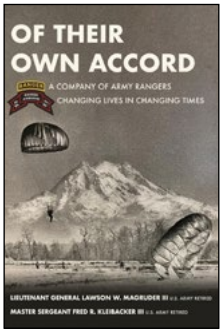
Another important addition is the outstanding appendix section at the end of the volume. It is filled with items enabling readers to better understand and appreciate Foley's career. These include his assignment history, Medal of Honor citation, and citations and press releases for several other prestigious awards Foley received. Readers would benefit from reading the appendix section first. This would provide an excellent background of the author prior to delving into the main portion of the book.

In summary, for those expecting a standard-fare memoir or leadership primer, you will not find it in *Standing Tall*. What you will discover is a volume which is part memoir, part historical commentary, part tribute, and part leadership discussion. These elements combine to make this a superb book and provide another example of validating Aristotle's premise. It also affords a new generation of readers the opportunity to learn and value the career of LTG Robert Foley.

Of Their Own Accord: A Company of Army Rangers Changing Lives in Changing Times

By LTG (Retired) Lawson W. Magruder III and MSG (Retired) Fred R. Kleibacker III

Fred Kleibacker, 332 pages, 2024



Reviewed by SFC (Retired) John C. Simpson

Let me begin the review properly by saying that I'm not going to be able to contain my enthusiasm for this book. It was obviously a labor of love for the two authors, and we're fortunate that their combined vision was so well executed that they created a text that will serve future generations of Soldiers whether read for individual study or used in a professional development forum.

In the interests of full disclosure, I served with author Fred Kleibacker in B Company, 3rd Battalion, 10th Special Forces Group (Airborne) at Fort Devens, MA, in the 1970s into the 1980s.

I won't be going too much into the biographies of the authors since I'm a firm believer in judging ideas on their own merits and not their pedigree. With that said, however, you should know that these two authors served together in the 2nd Ranger Battalion with then-CPT Magruder serving as the first Bravo Company commander of that organization and Kleibacker starting as a team leader and then a squad leader in 3rd Platoon, B Company, 2nd Ranger Battalion, 75th Infantry. (That's right, before there was the 75th Ranger Regiment, the 1970s saw the organization and training of the 1st and 2nd Ranger Battalions.)

The book begins with the historical context of the realities of the post-Vietnam Army and how Army Chief of Staff GEN Creighton Abrams came up with the idea to arrest the rapid slide of his beloved Army into ineffective oblivion with a bold idea: to create a unit that would be a shining example and standard setter going forward. To this end, he issued what became known as the Abrams Charter in 1974:

> *The battalion is to be an elite, light and the most proficient infantry battalion in the world.*
>
> *A battalion that can do things with its hands and weapons better than anyone.*
>
> *The battalion will contain no "hoodlums or brigands" and if the battalion is formed from such persons it will be disbanded.*
>
> *Wherever the battalion goes, it must be apparent that it is the best.*

The authors then go on to relate the experiences of those initial members of the battalion prior to their joining, their time in the unit and afterwards, and then how their military service shaped their post-service careers. From the foreword, "The intent of this book is not to recount war stories (of which we have more than a few), but to share the positive impact our time together many decades ago had in shaping how we lived our lives in the future."

To that end, the chapters are divided by recurring themes that were identified while interviewing 40 former Bravo Company Rangers over the course of 70 hours. These include Service, Accountability, Physical and Moral Courage, Honor and Integrity, Competence, Becoming a Good Citizen, and Heroes at Home. These are all followed by an epilogue, a very welcome glossary, and a comprehensive biography of all of the witnesses to the story. Another aspect I was impressed with was the space devoted to discussing the role of spouses in the lives and careers of these early Rangers. And I mean, in a book written about Rangers, the wives were interviewed for their insights as well.

I stated that I was enthusiastic about everyone reading AND re-reading this book, but there are a couple points that jumped out at me that I had to highlight.

In chapter 10, "Leading Others" recounts a story of a squad that failed a major evaluation and what measures the chain of command took to fix the problem. That account ends happily, and lessons learned are expressed as simple statements of fact: "Humility, listening to your men, and understanding their strengths and weaknesses are the key ingredients of exceptional leadership."

I was further struck on the Rangers' emphasis of doing things "by the book." Given the treatment of that concept

over the decades by fictional TV and movie characters, not to mention self-serving military memoirs, it was refreshing to read that doing things doctrinally was considered a cornerstone of the Ranger battalion's success.

Before I go, a few quick notes. First, when looking for this book, check that it's by these two authors. There's a 2005 Ranger novel with the same title.

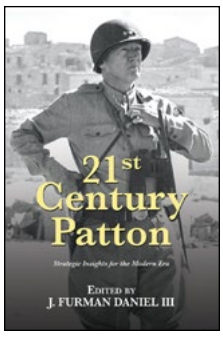
Second, there are a few typos in this book, and I've informed Fred about them for future editions. Nothing serious and not one of them detracts from the valuable lessons that this book has to offer. Stuff like misstating order of precedence for an award or mixing up hyperthermia and hypothermia doesn't detract from the main function of this useful book.

Lastly, don't be surprised if this book leaves you wanting more. There are many references to B Company, 2nd Ranger Battalion having to insert new recruits into a unit training program that was already in progress and relentlessly heading toward the fixed date of its first evaluation as a battalion. I told Kleibacker to give some thought to perhaps writing another book on just what that experience taught. That could provide invaluable knowledge in the event of future mobilizations or standing up new units.

21st Century Patton: Strategic Insights for the Modern Era

Edited by J. Furman Daniel III

Annapolis, MD: Naval Institute Press, 176 pages, 2016



Reviewed by 2LT Andrew Kim

GEN George S. Patton remains one of the most iconic U.S. Army warfighters who led Soldiers across numerous conflicts, ending with his command of the Third Army after the invasion of Normandy. *21st Century Patton,* edited by J. Furman Daniel III, takes readers across Patton's life and attempts to break down how he grew into the larger-than-life figure perpetuated by popular culture. The editor recaps Patton's life across his military and personal career while intertwining his works to analyze and highlight the strategic and leadership insights revered by many.

From a young age, Patton was an avid athlete and a lifelong learner. During his honeymoon in London, the leader purchased several rare books on military history and theory which would eventually lead to a massive collection. His trips across Europe as a young man taught him to reflect about the landscape and nature that he had encountered, which would prove quite useful during World War II. He displayed his competitiveness as part of the United States Military Academy's (USMA's) track and football teams and competed at the Olympics in Stockholm. His high-energy mentality bled into his personality, and he chose to always lead from the front, believing that both physical and mental training were key components to success in any endeavor.

The book highlights seven articles written by Patton himself, which are then analyzed by the editor. Beginning early in his career, Patton wrote on topics such as the flaws in the U.S. Army Cavalry's sabers and his ideas for redesigning them. As a field grade, he studied and addressed political conflict and the situations that led certain sides to victory and others to defeat. By noting a number of variables, he considered the amalgamation of training, human capital, newly developed equipment, differences in leadership, and the political systems that could be analyzed to predict future conflicts and wars. One of his most insightful articles studied the change in power balance from manpower to equipment introduced by the advent of gunpowder. Throughout his life, Patton believed that the complex study of military conflicts and political knowledge would prove necessary as a great leader.

Across many aspects, Patton lived an exceptional life as an extraordinary leader and man. A graduate of USMA, Patton displayed brilliance from the beginning of his military career. From a star on the track to the eventual commander of the Third Army, his insights into character development and his never-ending pursuit of knowledge led him to become the brilliant man we know today who continues to serve as an example for military officers across all ranks and branches.

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