Infantry

Summer 2024

Transforming the Infantry Force

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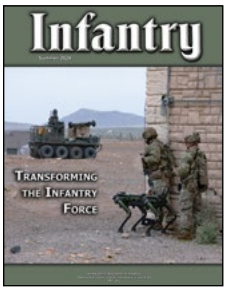

FRONT COVER:

Soldiers assigned to the 1st Battalion, 29th Infantry Regiment take part in a human machine integration demonstration using the Ghost Robotic Dog and the Small Multipurpose Equipment Transport during Project Convergence Capstone 4 at Fort Irwin, CA, on 15 March 2024. (Photo by SPC Samarion Hicks)

BACK COVER:

A Soldier in EZ Company, 2nd Battalion, 19th Infantry Regiment, 198th Infantry Brigade, observes Infantry One Station Unit training at Fort Moore, GA, on 11 May 2024 as the Northern Lights make a rare appearance due to a solar storm. (Photo by SFC Luke Warden)

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

MG MONTÉ L. RONE

As I write this final Commandant's Note, I am filled with pride and gratitude for the opportunity to serve as the 61st Infantry Commandant. Although it's only been 10 months, I still believe that I had the best one-star assignment in the U.S. Army. As we transition Commandants, I want to welcome COL (Promotable) Phil Kiniery to the team — a phenomenal leader of character who is exactly the right officer with the knowledge, skills, and experience to take the Infantry Branch to even greater heights.

Our mission in 2024 is the same mission General Marshall had in 1924 and that is to educate, train, and develop Infantry Soldiers and Leaders who are capable of fighting and winning (decisively) anywhere in the world. This means Leaders and Soldiers who are fit, disciplined, trained, and ready; Leaders and Soldiers with an unwavering commitment to the Profession of Arms; and Leaders and Soldiers who are imbued with the warrior spirit — the physical and mental toughness and innate ability to close with and destroy the enemies of our nation.

The Summer 2024 issue of *Infantry* embodies the themes of training, warfighting, and winning. In the first article of this edition's Professional Forum, LTC Aaron Childers and MAJ Joseph Jenkins share how the 2nd Battalion, 30th Infantry Regiment redesigned its command post (CP) to survive on the modern battlefield. With the proliferation of unmanned aerial systems (UAS) and precision fires, larger legacy GWOT CPs are no longer suitable. By balancing function and survivability, the battalion developed and tested a lighter and leaner CP design that it set up in just over five minutes and jumped more than 20 times during a recent Joint Readiness Training Center rotation.

Another article provided by leaders from the 1st Brigade Combat Team, 101st Airborne Division (Air Assault) and 1st Battalion, 506th Infantry Regiment recommends a training methodology for incorporating enabler integration training which culminates in a platoon fire support coordination exercise. This training progression aims to bridge the gap between squad and platoon live-fire exercise events and includes five lines of effort: mortars, fires, UAS, weapons, and leader professional development.

In a subsequent article, a group of observer-coach/trainers from the National Training Center (NTC) advocate for reinvigorating the five principles of patrolling. After observing more than 30 infantry and tank companies at NTC, the authors note that those units that planned, prepared, and executed operations using the five principles tended to succeed, while those that didn't often suffered defeat to varying degrees.

Leaders from the Infantry Basic Officer Leader Course continue their series of articles on developments within the course highlighting its culminating platoon live-fire exercise (LFX). Aligning with the Infantry School's focus on warfighting and building strong teams, the LFX provides student officers with a realistic and demanding scenario, which will prepare them for their first duty assignments.

Lastly, CPT Cody Rosenberg provides insight into lessons learned from the use of commercial small UAS during a recent Joint Pacific Multinational Readiness Center-Alaska rotation in "Commercial sUAS in Support of Targeting." As we have seen in recent conflicts, the proliferation of UAS on the modern battlefield is a threat, and U.S. forces need to be prepared for what they could face in combat. While serving as the opposing force for the exercise, CPT Rosenberg captured a number of observations, including the need to correctly camouflage, move assets frequently, operate in decentralized manner, incorporate sUAS more into training events, and equip squads with anti-drone capabilities.

Thank you again to all the contributors and readers of *Infantry*! Your work here contributes to the body of professional discourse and ensures we never forget the importance of the foot Soldier and the formations, specifically the squads, they serve in. The Infantry Squad will always be America's most complex, dynamic, and resilient system. As we continue to transform the force and prepare for future conflict, we must never forget that it is the Infantry Soldier and their family whose fighting spirit, courage, valor, and sacrifice have secured almost 250 years of freedom for our nation.

"Remember, wherever brave men fight… and die, for freedom, you will find me, I am the bulwark of our nation's defense. I am always ready… Now and forever.

I am the Infantry — Queen of Battle! Follow me!"

Army Expeditionary Warrior Experiment Tests Emerging Battlefront Advancements

CAMELIA STREFF

Operational insights on the battlefront are crucial. The Army Expeditionary Warrior Experiment (AEWE) executes field experiments in real time, featuring live fires, simulations, and force-on-force engagements to validate what will and won't work for Soldiers amidst the conflicts of today and the challenges of tomorrow.

Technology and industry leaders unload and set-up their concepts to demonstrate their submissions on 2 February 2024 at Fort Moore, GA. The Silent Tactical Energy Enhanced Dismount is an all-terrain, electric payload mobility platform which is tactically silent and has zero emissions. (Photos by Patrick A. Albright)

Driving Change in the Maneuver Force

The Maneuver Capabilities Development and Integration Directorate (MCDID) at Fort Moore, GA, leads the Maneuver Battle Lab's (MBL's) Live Experimentation Branch and sets the stage for the Army's concept and materiel development for small unit modernization. As a key proponent on rising technologies, MBL hosts AEWE, an annual event held at the Maneuver Center of Excellence (MCOE), a premiere showcase of innovations come to life. Each year, MBL partners with the science and technology community to submit ideas that can enhance the future of warfare.

Chris Willis, director of the Maneuver Battle Lab, said this year's experiment focus is "increasing the lethality of the infantry brigade combat team through robotic-enabled maneuver." This means "taking capability, state-of-the-art technologies, and putting it into the hands of Soldiers, increasing the lethality to deliver the Army of 2030 and design the Army of 2040."

AEWE

"For 20 years, AEWE has served as our Army's premiere choice for modernization experimentation," said COL Scott A. Shaw, director of MCDID. "Vendors from all over the world, both industry and government based, submit to participate in the event to gather invaluable data, test their applications, and better yet, receive informative outcomes without the fear of failure when it really matters — in combat."

Selected systems are presented for Army leadership interaction and put to the test throughout the experiment with Soldier touchpoints. Soldiers at the lowest tactical level can directly engage with the new technologies and various prototypes, and vendors receive invaluable feedback from experienced potential end users.

The Milrem THeMIS, a Dutch and German ground-based system combining an unmanned ground vehicle and a remote-controlled weapon station, participates in the 2024 AEWE on 29 January.

There have been a wide range of concepts showcased at AEWE, and some that incorporated feedback have been implemented into real Army applications.

"I remember seeing things like the Black Hornets, which are micro unmanned aerial vehicles, and the Nett Warrior

system, where Soldiers wear smartphones on their chest, and night vision goggles with infrared and thermal technology — they were all presented and tested here," said MAJ Joseph Tague, MBL operations officer.

The AEWE runs from the beginning of the fiscal year in October through the second quarter, culminating in March with an insights brief. Outcomes and recommendations gathered during AEWE feed the Army Modernization Strategy, supporting the U.S. Army in multidomain operations, and this data informs leadership about the functionality and capabilities available. For many participating technologies, this means getting on the radar for future Army equipment decisions.

Here and Now

"Inviting our partners and allies to collaborate on next-generation military warfare enhances our foreign relationships and underlines the significance of how enduring partnerships are a way our joint forces can deliver ready combat formations and strengthen the profession of arms," said COL Shaw.

This year, AEWE has 48 participating concepts that will be put to the test over 50 days, which includes training and data collection conducted at Fort Moore. For AEWE, MBL brought together 182 Soldiers to comprise a multifaceted experimentation force of MCOE service members; foreign allies participating from the British Army, Dutch Army, and German Army; and a platoon of Soldiers from Fort Johnson, LA, who will serve as the opposition force acting as near-peer adversaries during force-on-force exercises.

"We need to be able to understand how we can integrate new technologies into both our infantry and armor formations," Willis said. "From the experiment, we are trying to understand the operational effectiveness of new capabilities, looking at concepts, formations, or technologies, and how all three of these connect and could affect each other."

Soldiers will evaluate components from seven categories — lethality; survivability; mobility; training; intelligence, surveillance, and reconnaissance; command and control; and sustainment — of these emerging technologies to gauge their potential effectiveness on modern battlefields. Experimenting and testing proposed concepts and capabilities can directly determine what tools could benefit the force and enhance tactical skills at the lowest echelon.

(Camelia Streff works for the U.S. Army Maneuver Center of Excellence Public Affairs Office.)

Army Futures Command CG Lays Out Continuous Transformation Plan

CHRISTOPHER HURD

To give Soldiers what they need to win the nation's wars now and in the future, the Army must continuously transform and adapt to advances in technology, said GEN James E. Rainey, commanding general of Army Futures Command (AFC).

This flexibility is needed, he said, because of how quickly the environment is evolving.

"The amount of technical disruption in the character of war is unprecedented, and it just continues to go faster and faster," GEN Rainey said during a keynote presentation at the U.S. Army Global Force Symposium in Huntsville, AL, in March. "Whatever you think you know this year, come back in 90 days and you'll know something different."

To combat this changing landscape, the service is focused on transformation in three different periods: 18–24 months, two to seven years, and seven to 15 years. Work done in each period has a ripple effect on the others.

The first period is referred to as transformation in contact. This area deals with capabilities delivered to deployed warfighters for testing and analysis. They provide real-world feedback allowing the Army to make necessary adjustments for future use. In this area, the Army can adapt to current warfighting conditions. This was used when the service noticed the value of loitering munitions, also known as suicide drones, in the war in Ukraine. AFC put in a priority-directed requirement and is in the process of buying the capability.

AFC is also working with industry partners on ground-based rockets, ground-based missiles, and counter-unmanned aerial systems (UAS)

An Infantry Soldier assigned to 1st Battalion, 29th Infantry Regiment assembles the Ghost-X unmanned aircraft system during Project Convergence Capstone 4 at Fort Irwin, CA, on 11 March 2024. (Photo by SSG LaShic Patterson)

that work on offense to protect light infantry and armored companies.

"The United States Army, we believe in offense and attacking," he said. "So, there is a big opportunity to figure out how we are going to provide effective counter-UAS capabilities to units on offense."

Human-machine integrated formations is another initiative the service is working on in the 18–24-month period. This program brings robotics and autonomous vehicles into fighting formations. The goal of the project is to keep Soldiers out of harm's way whenever possible. The Army tested numerous integrated formations during Project Convergence Capstone 4 at Fort Irwin, CA, in March.

"This is one of our major efforts inside the Army," GEN Rainey said. "It's going very well and is full of opportunities to go to the next level. We're never going to replace humans with machines; it's about optimizing them."

The Army will start prototyping the first integrated platoons in the next two years.

The two-to-seven-year period is known as deliberate transformation. In this time frame, the service is continuing to work on the Future Long Range Assault Aircraft (FLRAA), extending the range of cannon artillery, adding magazine depth, and improving indirect fire weapons, engineering capabilities, and the network. GEN Rainey said the service's number one priority in deliberate transformation is improving the network. The service is working on a data-centric system to enable commanders to make quicker and more informed decisions.

The Future Long Range Assault Aircraft is a hot topic issue with the service's recent aviation rebalance. GEN Rainey assured that the Army is committed to FLRAA and the capability it brings to maneuver rifle squads.

"We don't do attrition warfare," he said. "We do maneuver warfare. So, FLRAA is an absolute must we have to continue to deliver, and it's in good shape."

A U.S. Army unmanned, eight-wheeled, all-electric, all-terrain transport vehicle armed with the R600 autonomous weapon system provides support to dismounted Soldiers as part of a human integration experiment. (Photo by SPC Samarion Hicks)

The HIVE unmanned aircraft system prepares to take flight during a human machine integration experiment as part of Project Convergence Capstone 4 on 11 March 2024. (Photo by SGT Gianna Chiavarone)

Innovating in engineering battalions is another key priority for the Army, he explained.

"We're more likely to get stopped by the terrain than by an enemy we fight and that's not OK," he said. "We [have got to] get after the engineering transformation and modernization."

The Army announced the end of the Extended Range Cannon Artillery platform program in March, but the requirement to extend cannon fire remains. The service recently completed a tactical fires study on artillery modernization. The research from the study showed significant success in extending the range by making adjustments to the rounds, GEN Rainey said.

AFC is taking this knowledge and looking at ways to innovate the rounds and the propulsion systems. They are also looking to increase magazine depth to give Soldiers not just the capability but the capacity they need.

The last time frame is referred to as concept-driven transformation. This is where the Army is looking to sustain advantages, develop new capabilities, and build endurance for future conflicts. The service is working on merging offensive and defensive fire systems, adding robotics to contested logistics, bringing survivability and lethality to light infantry divisions, decreasing the weight of armored formations, and increasing its emphasis on war gaming.

This continuous transformation over all three periods is meant to make the Army more adaptable, flexible, and lethal while giving Soldiers the capacity and capabilities to win now and in the future.

"Whatever we do as we transform, we have to preserve that people advantage we have," GEN Rainey said. "They are our greatest asset."

(Christopher Hurd writes for the Army News Service.)

International Sniper Competition

5-11 April

1st Place – Team 34 - 3rd Battalion, 75th Ranger Regiment
2nd Place – Team 11 - Army National Guard (ARNG)
3rd Place – Team 19 - Special Forces Sniper Course (SFSC)
4th Place – Team 9 - U.S. Coast Guard
5th Place – Team 35 - Denmark
6th Place – Team 36 - Iowa ARNG
7th Place – Team 1 - 1st Infantry Division
8th Place – Team 4 - 1st Battalion, 75th Ranger Regiment
9th Place – Team 14 - Netherlands
10th Place – Team 29 - 3rd Special Forces Group (Airborne)
Field Craft Award – Team 19 - SFSC

(Clockwise from above) During the fourth day of the International Sniper Competition (ISC), Team 26 from the 3rd Infantry Division completes the "Hold the Line" event at Burroughs Range on Fort Moore, GA. (Photo by Patrick A. Albright)

After the "Move to Cover" event on 8 April, an ISC staff member checks the targets of Team 35 from Denmark. (Photo by Joey Rhodes II)

A sniper team engages targets on Day 2 of the ISC. (Photo illustration by Joey Rhodes II)

A competitor takes aim during ISC's "Two Gun Pistol" event at Krilling Range on 9 April. (Photo by Joey Rhodes II)

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
8-11 April

1st Place – Team 16 - 3rd Battalion, 75th Ranger Regiment
(SSG Enrique Caballero, SGT Mason Davison, SPC Logan Otis, and SPC Emmanuel Jackson)

2nd Place – Team 12 - 82nd Airborne Division
(SSG Maxx Herbst, SGT Benjamin Miller, SPC Arturo Garcia-Drake, and SPC Jay Jacobsen)

3rd Place – Team 13 - 101st Airborne Division
(SSG Jacob Hoskins, SGT James Hoffman, SPC Adrian Castaneda, and SPC Noah Smith)

4th Place – Team 15 - 2nd Battalion, 75th Ranger Regiment

5th Place – Team 14 - 173rd Airborne Brigade

6th Place – Team 5 - 2nd Cavalry Regiment

7th Place – Team 23 - 2nd Battalion, 4th Marine Regiment

8th Place – Team 26 - 82nd Airborne Division (2nd Team)

9th Place – Team 24 - 25th Infantry Division

10th Place – Team 18 - 1st Cavalry Division (2nd Team)

Top Shot – SSG Enrique Caballero

(Clockwise from top left) U.S. Marine 1st Lt. Liam O'Connell from Team 23 adjusts the sights of his team's mortar system during Day 1 of the Best Mortar Competition on 8 April. (Photo by SGT DeAndre Pierce)

Team 16, the winning team from the 75th Ranger Regiment, moves a 120mm mortar system during the final day of the competition. (Photo courtesy of the 75th Ranger Regiment)

Team 16 completes the 120mm live-fire event on 11 April. (Photo courtesy of the 75th Ranger Regiment)

SSG Dalton Adkins with the 82nd Airborne Division calls a fire mission during a Best Mortar Competition event on 10 April. (Photo by SGT Jacklyn Oxendine)

(Clockwise from right) SGT Jeremiah Slagle strikes SGT Gavin White during the Lacerda Cup's cruiserweight championship bout on 13 April. (Photo by SSG Tommie Berry)

SPC Brian Yamada and SGT Tajuan Johnson battle it out during the lightweight championship bout on 13 April. (Photo by PFC Cecilia Ochoa)

1LT Allene Somera celebrates after winning the third place bout in the bantamweight division on 13 April. (Photo by Patrick A. Albright)

SSG Richard House grapples with another competitor during a preliminary round of the Lacerda Cup All Army Combatives Championship at Fort Moore, GA, on 11 April. (Photo illustration by Daniel Marble)

Lacerda Cup All Army Combatives Championship 11-14 April

The **4th Infantry Division** was named overall champion of the 2024 Lacerda Cup.

The following are the results from the individual championship bouts:

Bantamweight – SSG Richard House, 11th Airborne Division

Flyweight – SGT Patrick Terry, 4th Infantry Division

Lightweight – SPC Brian Yamada, 4th Infantry Division

Welterweight – 1LT Lane Peters, 4th Infantry Division

Middleweight – SPC Antonio Khanthasa, 75th Ranger Regiment

Cruiserweight – SGT Jeremiah Slagle, Ohio Army National Guard

Light Heavyweight – CPT Tyler McLees, 4th Infantry Division

Heavyweight – SGT Jackson Fuamatu, 25th Infantry Division

(Clockwise from top) A Best Ranger competitor taps the Ranger tab before falling into Victory Pond during the Combat Water Survival Assessment event on 14 April. (Photo by SPC Christopher Grey)

A team fast ropes from a UH-60 Black Hawk helicopter during an urban operations event on Day 1 of the Best Ranger Competition. (Photo by Patrick A. Albright)

1LT Andrew Winski and SGT Matthew Dunphy cross the finish line of the competition's final event on 14 April. (Photo by SGT Eric Kestner)

SFC Michael Brown cuts through an obstacle as part of the day stakes at A.J. McClung Stadium in Columbus, GA, on 15 April. (Photo by Patrick A. Albright)

40th Annual David E. Grange Jr.
Best Ranger Competition
12-14 April

1st Place – Team 40 - 1LT Andrew Winski and SGT Matthew Dunphy, 75th Ranger Regiment

2nd Place – Team 49 - CPT Tanner Potter and SFC Michael Browne, U.S. Army National Guard

3rd Place – Team 10 - CPT Chandler Ramirez and CPT Logan Storie, 7th Infantry Division

4th Place – Team 38 - CPT Marcos Arroyo and SSG Zackery Williams, Airborne and Ranger Training Brigade

5th Place – Team 43 - SGT James Dicocco and SGT Coy Anderson, 75th Ranger Regiment

6th Place – Team 3 - 1LT Nathan Nunn and 1LT Noah Stewart, 1st Infantry Division

7th Place – Team 27- SPC Derek Peterson and 1LT Ryer Barnes, 2nd Cavalry Regiment

8th Place – Team 44 - SGT Taylor Aarness and SPC Jackson Daniels, 75th Ranger Regiment

9th Place – Team 41 - 1LT Patrick Sutherland and 1LT Colin Johnson, 75th Ranger Regiment

10th Place – Team 23 - WO1 Colin Feild and 1LT Patrick Gorman, 101st Airborne Division

Redesigning the Battalion CP:
Balancing Function and Survivability

LTC AARON CHILDERS
MAJ JOSEPH JENKINS

The U.S. Army has had to rethink its command posts (CPs), particularly at the battalion and brigade level, after lessons in Ukraine have indicated that CPs must be faster and leaner to survive on the modern battlefield. Unlike the global war on terrorism (GWOT), the modern battlefield has more advanced unmanned aerial systems (UAS) and precision fires, which have made the bigger legacy CPs a ripe target for enemy artillery. Lighter and leaner CPs are necessary for the survivability of both personnel and equipment and, simply put, to maintain tempo with the "speed of war."

During Joint Readiness Training Center (JRTC) Rotation 23-09, the 2nd Battalion, 30th Infantry Regiment, 3rd Brigade Combat Team, 10th Mountain Division, developed and tested a new command post with assistance from Task Force 3 observer-coach-trainers (OCTs). We set up this CP in a record five minutes and 38 seconds and jumped it 21 times during the extended 14-day rotation. The techniques used for this CP should be replicated across light infantry formations as a baseline. To transform CPs, leaders must first understand the challenges related to balancing function and survivability, the hardware going into the CP design, and the layout of the command post before finally training on the new CP setup. Although this may sound like an easy process, it could take months to completely refine.

The challenge of redesigning a CP is not just configuring it for speed of setup; this could be achieved with a portable radio. The challenge is choosing a layout that allows staff to accomplish the CP's required functions as specified in Army Techniques Publication, (ATP) 6-0.5, *Command Post Organization and Operations*. These include:

- Conduct knowledge management and information management;
- Build and maintain situational understanding;
- Control operations;
- Assess operations;
- Coordinate with internal and external organizations; and
- Perform CP administration.

During GWOT, CPs at the battalion level consisted of as many as four different tents, which offered ample room for a staff to conduct and develop current operations (CUOPS) planning and logistical efforts. The CP design that battalions operated in previously had up to six standard-issue Standard Integrated Command Post System (SICPS) tents or two DRASH tents. This was a common CP layout, with deviations being minor from organization to organization. Regardless of where a battalion positioned its CP or how it attempted to conceal it, the command post was still large and produced a large footprint — physical, electronic, audio, etc. Detection efforts of conventional CPs, either through visual detection

The photos below show 2nd Battalion, 30th Infantry Regiment's command post during Joint Readiness Training Center Rotation 23-09 as seen from on the ground and by a drone overhead. (Photos courtesy of JRTC)

due to the use of UAS or the advances in signal detection, were first seen in the Second Nagorno-Karabakh War and the invasion of Ukraine, where, "near the southern Ukrainian city of Kherson, Ukrainian strikes hit Russian command posts… at least 22 times and killed the commander of the 49th Combined Arms Army."[1] Now strikes from both sides regularly target CPs. As described by LTG Milford "Beags" Beagle and his co-authors in their article, "The Graveyard of Command Posts," "…the current command-and-control dilemma reflects an imbalance in the functional requirements for command posts to be both effective and survivable."[2] At the battalion level, redesigning the CP must start with the hardware available to a light infantry battalion.

The challenge of redesigning a CP is not just configuring it for speed of setup; this could be achieved with a portable radio. The challenge is choosing a layout that allows staff to accomplish the CP's required functions as specified in ATP 6-0.5.

Hardware

When redesigning a CP, organizations must first start with the hardware they have available. To steal computer terminology, the hardware is what the Army already provides to units through their organic equipment.

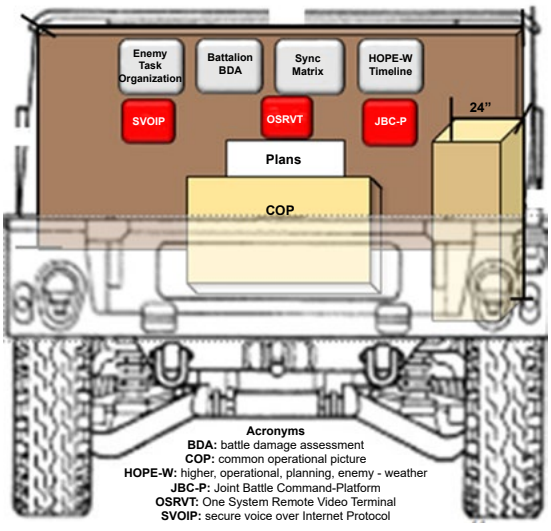
First and foremost, the CP should revolve around a unit's organic mobility platform. This will provide the platform for a unit's power and command and control (C2) systems as well as allow it to maneuver quickly if required. Although a battalion CP can operate out of a man-portable system for short periods of time (usually referred to as the assault command post [ACP] or, in our battalion's case, a mounted ACP, which consisted of MRZR all-terrain vehicles), the major platform for a unit's CP must be capable of providing consistent power to all of its mission command systems and transport the minimum amount of people to conduct the CP's functions. For most light infantry formations, the platform will either be the legacy High Mobility Multipurpose Wheeled Vehicle (HMMWV) or, for those units that have received the fielding, an Infantry Squad Vehicle (ISV). Other platforms tested in our battalion either failed to generate the power required to operate mission command systems, couldn't transport all the staff, or required parts outside of the Army's ordering systems for maintenance and repairs. For this reason, we kept MRZRs with mission command packages for our mounted ACP but utilized HMMWVs as the basis of our CP redesign. We used four M998 HMMWVs — one for each of the following: CUOPS, plans, fires, and intelligence. These four vehicles made up the basis for the rest of the CP.

Mission command requirements are the second hardware consideration. Each of our M998 HMMWVs had a fabricated metal stack built into it, which housed two Advanced System Improvement Program (ASIP) radios with a power amplifier, the Joint Battle Command-P (JBC-P), and either a tactical satellite, high frequency (HF) radio, or other system (see Figure 1). This stack can be moved between vehicles and modified to fit in either a HMMWV or an ISV. The system receives its power from the vehicle itself, giving each of the four vehicles an on-the-move C2 capability and the battalion the ability to operate without a generator if needed. To maintain multiple nets, we mounted additional antennas on a fabricated mounting bar located on the cab of the vehicles. This provided better line of sight and allowed the camo netting to be set up over the back of the vehicle without interference.

We only set up the Satellite Transportable Terminal (STT) once during the rotation. The large satellite dish towers over every other piece of equipment and requires its own vehicle and generator, and in our opinion, it is not worth the capability it provides. Most of the information from higher headquarters was sent via the JBC-P and not over secret internet protocol router (SIPR), which is the only reason to need an STT. The STT does provide a non-secret internet protocol router (NIPR) capability to the CP; however, there are numerous conditions that must be met in both positioning and provisioning to access that capability. Unfortunately, bandwidth used to access NIPR takes away from the full capability of SIPR, thus reducing the effectiveness of both forms of connectivity. Additionally, during active military operations, the use of NIPR is limited due to operation orders (OPORDs) and directives being transmitted over SIPR. In short, the Army must explore ways to transmit information without this piece of cumbersome equipment.

Figure 1 — Vehicle Configuration

This design was mirrored with all M998s in the command post to create a baseline main CP setup as well as improve redundancy with mission command systems and current operations tracking.



The last item to consider with the hardware associated with the CP is the covering and camouflage required to fully set up the CP. During our battalion's JRTC rotation in August 2023, we used camouflage netting that was precut and tied to the rear of each vehicle. Once vehicles were in place, we stretched the camouflage netting between each vehicle and used poles to provide a working space. Camouflage netting served as the fastest, most spacious, and most effective way to cover the CP,

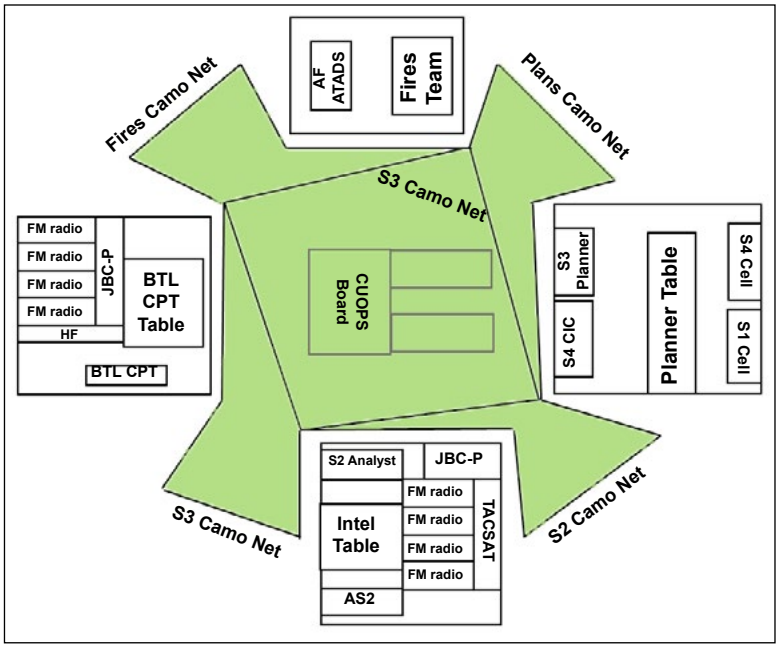


Figure 2 — The CP Design

This design, which consists of four M988s and camo nets, is beneficial during periods when reactivity and maneuverability are paramount to success and survival.

allowing our battalion to establish the CP in just over five minutes. The camo netting provided shade but did not block any light or noise. During hours of limited visibility, we were forced to plan under red lens, and the operations sergeant major had to constantly monitor security and noise/light discipline. During inclement weather, we used one SICPS to prevent products from getting wet, which could also be accomplished by using several tarps. During the defense, when the CP was furthest from the frontline trace, we expanded the layout to include two full SICPS, with all four vehicles booted (vehicle boots are attachments that allow for tents to wrap around cargo HMMWVs, limiting the noise and light signatures from the attached vehicles). This design, which was still established in less than 20 minutes, allowed for operations during cold and/or inclement weather.

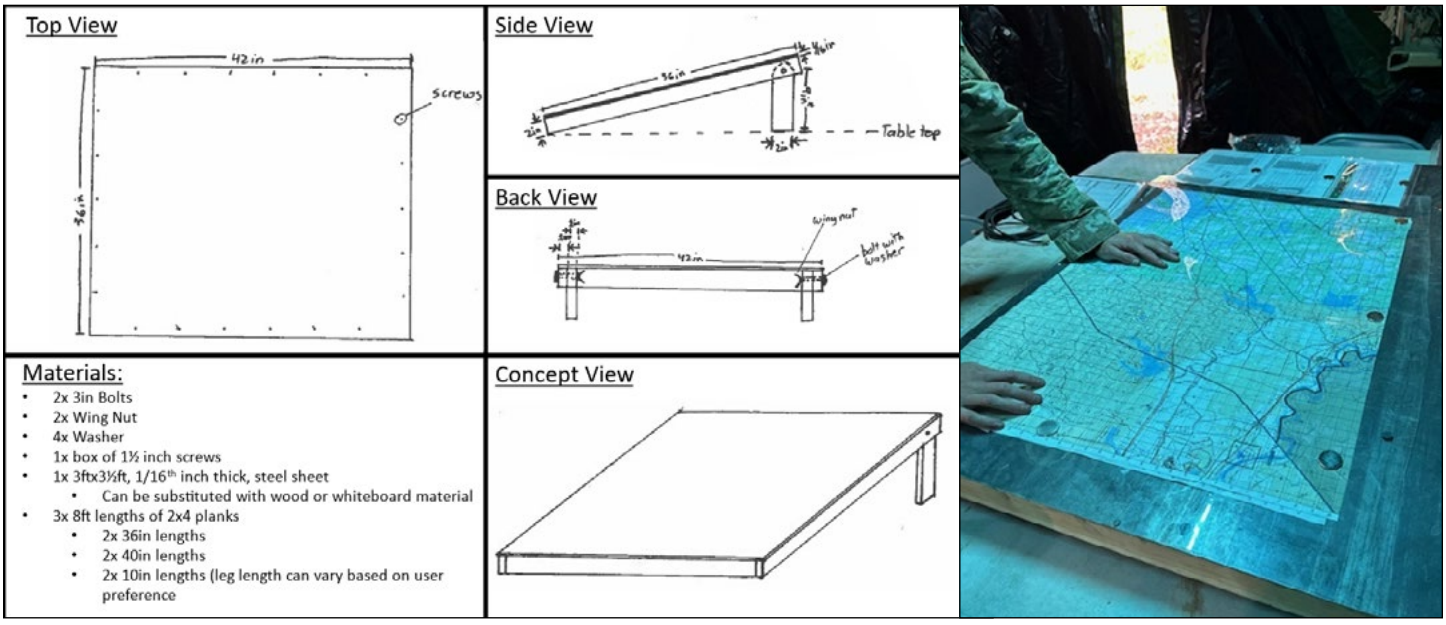
Functionality Inside the Command Post

When looking at the design inside the CP, or the "software," there should be three main considerations: the need for analog products, how to design the CUOPS and plans, and what personnel is needed inside the main CP. These factors will dictate how the interior of the CP is laid out.

When redesigning the CP, analog products are a requirement. During GWOT, units became accustomed to large orders that were produced on laptops and then printed. For CUOPS, units were fielded the Command Post of the Future (CPOF), a desktop computer with three screens that required a SIPR connection. This is large, cumbersome, and no longer feasible for a mobile CP. Command post computing environment (CPCE), the Army's new CPOF replacement, has the same requirements and is not needed at the battalion level. The power requirements for computers and printers, the noise and light discipline, the supplies, and the bandwidth needed to operate this way are not conducive to a mobile CP. All products in our mobile CP were maintained on two boards, one for plans and one for CUOPS. Instead of using PowerPoint for the military decision-making process (MDMP), we printed out and laminated slides. Staff sections updated their running estimates by hand using map pencils. For orders production, we provided overlays to company commanders, while we reproduced essential products like

Figure 3 — Planning Board Design

Schematics are at left with the completed item shown at right. Note how the metal board allows for magnets. Later, a magnetic white board was added so staff could quickly take notes.



The interior of the modified vehicle includes a communication stack and metal table built into the vehicle, allowing for products to be quickly transferred. (Photo courtesy of authors)

execution checklists (EXCHECKs) by hand and then laminated them for subordinate commanders. It is key to identify what products units want to produce before going to the field. Our standard products included an updated operations overlay, fires overlay, execution matrix, and decision support matrix. These essential products were all made and distributed by hand, while warning orders and OPORDs were distributed via JBC-P or over FM. All hard-copy products were distributed either at an in-person orders brief, via runner, or during battlefield circulation.

Another important element of the mobile CP is how these analog products are displayed and designed to move quickly in case the CP needs to reposition. For both CUOPS and plans, we used magnetic white boards mounted on a lean-to structure. These boards held maps, overlays, and other running estimates with magnets. The white board materials allowed planners and the battle captains to use map pens to make notes or products and then erase them later. We positioned the CUOPS board, which served as the CP's centerpiece, right behind the operations section's M998. We mounted radio speakers and hand mics at the rear of the vehicle to allow the commander to stand over the map board. Inside the operations vehicle, we fabricated a metal table, allowing the magnetic products from the CUOPS board to move onto the metal table while the vehicle was moving. This ensured we had no loss in awareness while the CP displaced or moved. The planning board could also be removed from the plans vehicle and set up for MDMP or OPORD briefs.

The last item to consider for the CP is personnel — which staff members the commander wants with the command post. The hardest part of reducing the size of the CP is regulating who stays with the main CP and who stays under the headquarters and headquarters company (HHC) commander at the combat trains command post (CTCP). With only four vehicles in our CP, the number of seats in the M988s was limited. This required the battalion executive officer (XO) to ruthlessly manage who would go forward as the CP moved. All the staff primaries went forward with the CP to enable simultaneous planning and managing of operations. This will become increasingly difficult as enablers are pushed down to battalions. These enablers increase the footprint, usually in both personnel and vehicles. Just as the CP's size is essential to maneuverability and survivability, the amount of "stuff" enablers bring to the fight (based off a legacy understanding of what is required) is just as important to consider. Again, the XO must manage which enablers are allowed to come forward for planning and which elements will remain at the CTCP.

Training

As important as the hardware and layout of the CP are, so too is the training for the staff sections that will use these systems. Our brigade had a deliberate process to train CP staff leading up to our Combat Training Center (CTC) rotation. The constant setup and refinement of the CP will enable a maneuverable CP that can both displace rapidly and continue planning. One of the biggest hindrances to displacement is the staff's reluctance to jump to the next location. This can only be overcome with practice. A competent staff is capable of jumping the CP in limited visibility with no disruption to the planning process and/or tracking operations, and this is only possible with constant training and familiarization.

All training events should be multi-echelon and involve the staff. When the CUOPS board moved into the S3 shop, our staff conducted a battle update brief (BUB) twice a week of analog products. Although this practice was cumbersome at first, it both increased the familiarity with the analog products and provided a chance for the staff to refine their running estimates. Additionally, when two or more companies went to the field, staff also deployed the CP. This gave the staff repetitions at emplacing and jumping the CP in the field with the same vehicles they would use during the CTC rotation. Identifying the vehicles that will be used for a CP, and making the hardware adjustments early in training progression, will give units time to make refinements and upgrades to their CPs prior to a CTC rotation or deployment.

Use your analog products whenever possible, even during your Leader Training Program (LTP). When our brigade conducted its LTP at JRTC, it brought along the planning board and analog MDMP products. Running estimates

were updated using map pens, and MDMP briefings were conducted off the planning board. For staffs to become proficient, they must use these products as often as possible.

Prior to the JRTC rotation, the brigade also conducted several CP exercises, which culminated in an external evaluation (EXEVAL) by another brigade. The CP exercises included setting up the CP and conducting MDMP from the field. Units may be tempted to conduct CP exercises more like a communication check (where a unit validates its radios, tactical satellite, and SIPR systems), but this does little to ensure a unit is ready to conduct a CTC rotation. The 10th Mountain Division did an excellent job of providing external evaluators from O5 down to E7 from a brigade that had just completed a JRTC rotation to evaluate every battalion as it conducted MDMP, jumped during daylight and limited visibility, and battle-tracked a live simulation with "pucksters." This training event, which lasted seven days, did more to set CPs up for success than any other training event.

The Mobile CP and the Next Fight

To make a CP survivable and mobile for the next fight, units must review the hardware, fine tune the functionality of their CP, and train on how to conduct seamless operations. For hardware, this requires identifying the platform from which the organization will fight and heavily modifying the equipment. However, this should not be left to units to do alone. Although units can request metal fabrication from their brigade support battalion to make these modifications, this is not something that should not be left to individual units. The Army should design a communications shelf that will easily fit in HMMWVs, ISVs, or any other vehicle platform; and standard designs for metal tables should be available to order through Army procurement systems. Additionally, the current STT does not allow a CP to be mobile or camouflaged. It should either provide a lightweight and smaller package, like a proprietary low earth orbit system, or battalions should not be required to remain on SIPR while in the fight. This is an unrealistic expectation at the battalion level. For the functionality of CP interiors, the magnetic white board designs should also be able available to order. The Army mass-produced field desks in World War II to provide standard desks across headquarters, and the same should be true for today's CP products. Units should be able to train on these as part of LTP programs, and if they cannot transport their own materials, they should have examples to use at the LTP location. Finally, training progressions, like the EXEVAL our brigade received, should become standard practice. This should be an expected gate prior to a CTC rotation. These advancements should be implemented if the Army expects its CPs to survive and thrive in the future fight.

Notes

[1] Michael Peck, "Ukraine's Attacks on Russian Commanders Have the U.S. Army Worried About Its Own 'Fat and Ponderous' Command Posts," *Business Insider*, 6 July 2023, https://www.businessinsider.com/ukraine-attacks-on-russia-us-army-command-post-vulnerability-2023-7.

[2] LTG Milford "Beags" Beagle, BG Jason C. Slider, and LTC Matthew R. Arrol, "The Graveyard of Command Posts: What Chornobaivka Should Teach Us about Command and Control in Large-Scale Combat Operations," *Military Review* 103/3 (May-June 2023), https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/May-June-2023/Graveyard-of-Command-Posts/.

Soldiers with 2nd Battalion, 30th Infantry Regiment utilize the plans board during a command post exercise. (Photo courtesy of authors)

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Platoon FSCX as Enabler Integration Training within IWTS — A Technique

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The Army Integrated Weapons Training Strategy (IWTS) provides a specified framework for conducting collective training and validating units as part of a progression of ever-larger echelons. While IWTS provides objective criteria for validating individual and squad-level proficiency prior to platoon collective training, it does not fully account for certain key systems, nor does it provide a readily available solution for tying these disparate training events together in support of platoon-level training. This article provides a recommendation for structuring individual and squad-level training to bridge the gap between squad and platoon live-fire exercise (LFX) events with a platoon-level fire support coordination exercise (FSCX) and enabler integration training.

Background

After completing Joint Readiness Training Center (JRTC) Rotation 22-10, the 1st Battalion, 506th Infantry Regiment, 1st Brigade Combat Team, 101st Airborne Division (Air Assault), identified digital fires capabilities as a gap in our training progression and fires enterprise. Our battalion's training glidepath after JRTC already included a machine-gun (MG) academy concept to validate tactics, techniques, and procedures (TTPs); standard operating procedures (SOPs); and crew drills across the formation and build proficiency within weapon squads. We chose to incorporate weapons squads into the digital FSCX to maximize training at echelon and focus on transitions from indirect to direct fire. Including these squads also provided platoon leaders a maneuver element to incorporate into their planning without shifting their focus from fires to maneuvering a full platoon.

Our second iteration of the enabler integration training FSCX glidepath included an anti-tank (AT) weapon academy, a small unmanned aerial systems (sUAS) university, Mortar

Mortarmen in 1st Battalion, 506th Infantry Regiment "Red Currahee," 1st Infantry Brigade Combat Team, 101st Airborne Division (Air Assault), fire an 81mm mortar system during a fire support coordination exercise at Camp Adazi, Latvia, on 26 August 2023. (Photo by SSG Oscar Gollaz)

Training and Evaluation Program (MORTEP), and a series of leader professional development (LPD) events covering sUAS, fires enterprise, and fires effects as prerequisites. Between these events, we set conditions to effectively employ all key weapon systems at the platoon and company levels during the FSCX.

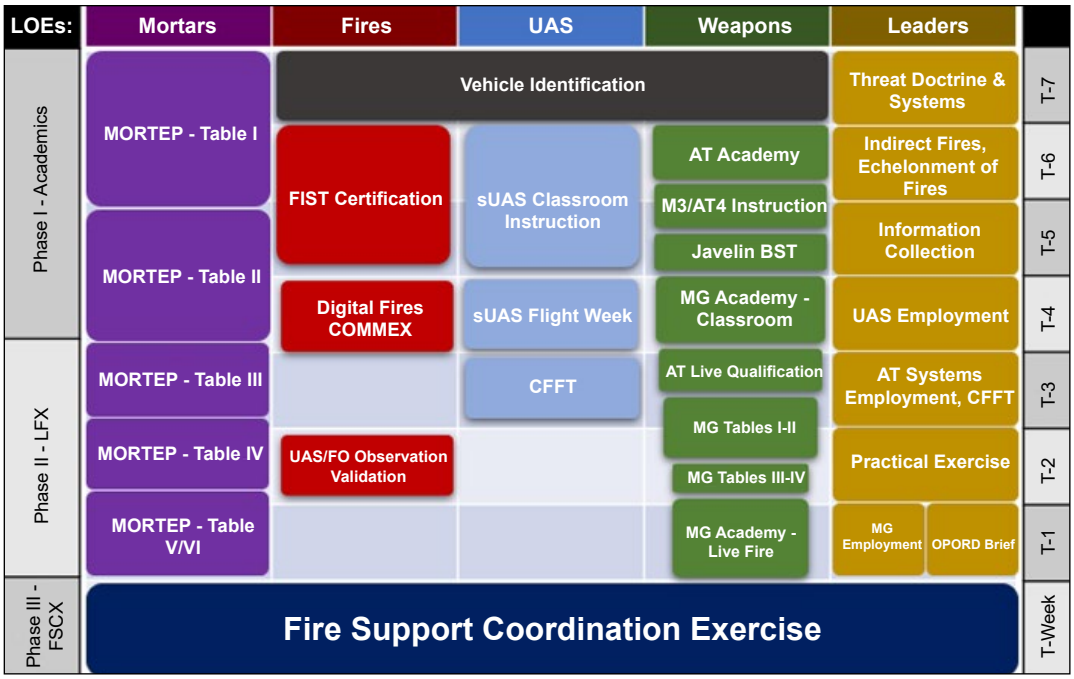


Figure 1 — Enabler Integration Training Model

Exercise Intent

The primary consideration for our FSCX methodology was to depart from the "walk and shoot" scenario where platoon leaders echelon indirect assets in support of their own movement. Instead, we wanted leaders to integrate key weapon systems at echelon across the breadth of the formation to maximize effective employment of all suppression assets, with support from unmanned aerial systems (UAS), to support adjacent units and achieve the company commander's mission and intent. To support the FSCX, we trained and certified sUAS, AT, and mortar teams prior to the exercise to provide the platoon leaders with well-trained and coordinated enablers.

The key tasks in this training progression include validating the digital fires kill chain, integrating UAS into fire support and mortar training, incorporating lessons learned from the war in Ukraine, training appropriate and contextually appropriate fires planning, and reinforcing mission command principles (intent vs. specified task). At end state, leaders from squad to battalion echelons understand the integration of key direct and indirect fires assets, the importance of commander's intent vs. specified tasks, and how to incorporate lessons learned to drive future training progressions as a learning organization. It also sets the conditions for follow-on echelon training, which includes platoon situational training exercises (STXs)/LFXs, company STXs/LFXs, and battalion and higher STXs. This training methodology builds upon lethal squads from the squad LFX to train platoon and company leaders to employ enablers at echelon to ensure companies do not fight like large platoons (and battalions do not fight like large companies).

Train-Up Concept

Figure 1 illustrates the seven-week training progression along five lines of effort (LOEs). Of note, the Leaders LOE lists LPDs for each week; these are executed in conjunction with leaders observing the concurrent training applicable to that week's LPD. For instance, in T-4, while Soldiers are conducting certification flights, leaders will be observing the UAS flights and receiving briefs from trainers on the employment of these systems. The train-up can be divided into three phases.

Phase I — Academics. Phase I of enabler integration training begins with completion of squad live fires on or before T-8 and lasts four weeks. A robust vehicle identification block of instruction serves as the foundation for the fire support, weapons, and UAS training due to how critical this is for target acquisition and proper effects delivery. Fire support team (FIST), sUAS, and AT system certifications/qualifications adhere to applicable training circulars (TCs). The AT system training is augmented with an initial AT academy which serves two purposes:

- To move beyond the technical operation of the weapon systems and discuss tactical employment, and
- To provide weapon squad leaders TTPs for training their AT teams during and after the FSCX training glidepath.

Likewise, the MG academy block of instruction focuses on the technical and tactical considerations, as well as instruction techniques, prior to conducting qualification. Finally, MORTEP completes Table I (gunnery skills) and Table II (fire direction center certification) in a garrison environment while the digital fires communications exercise (COMMEX) validates the digital fires architecture between the battalion fire support element (FSE) and the mortar platoon.

Phase II — LFX. Phase II occurs during T-3 through T-1. The MG academy transitions from classroom to live-fire events. Starting with an AT live-fire qualification, weapons squads conduct their qualification tables and then move into a robust LFX that builds upon the individual qualification up to a weapons squad LFX. In conjunction with practical exercises, the MG academy teaches and reinforces battalion SOPs for weapons squads. In this phase, sUAS operators go through the Call For Fire Trainer (CFFT) in preparation

for the following week's event, which pairs them with platoon forward observers (FOs) who will utilize sUAS to observe and adjust fires in support of MORTEP Tables IV-VI.

Phase III — FSCX. The training LOEs merge into the platoon FSCX, which serves as the culminating exercise for the training glidepath and integrates all previously trained capabilities. The FSCX challenges platoon leaders to establish a support-by-fire (SBF) position with only their weapons squad as a maneuver element, utilizing sUAS and indirect fires assets to set conditions for SBF establishment and suppression on a company objective. The enemy disposition is deliberately vague to compel platoon leaders to reconnoiter the objective, adjust targets accordingly, and think about the order in which they employ their direct and indirect systems to achieve suppression and allow the notional adjacent platoons to breach and clear the objective.

Enabler Training Concepts

Vehicle Identification (Phase I). Deliberate and thorough vehicle identification training has reemerged as a critical task in a large-scale combat operations (LSCO) environment, especially in the European theater where units would fight alongside multinational formations. During this training, students receive classroom instruction on vehicle identification techniques and the capabilities of both friendly and threat vehicles; they are then tested in accordance with Gunnery Skills Test criteria.[1]

Weapons Squad Academy (Phase I-II). Of the five LOEs, weapons squads receive the most tailored training. The academic portions cover operator drills for AT systems and machine guns (Tables I and II) but also place significant focus on the tactical employment of these systems and their role within a weapons squad. These portions also teach and codify battalion SOPs for individual-through-squad employment and provide weapons squad leaders TTPs for training and qualifying their crews. Our battalion's Heavy Weapons Leader Course-certified instructor conducts Javelin Basic Skills Trainer (BST) during the academic portion, satisfying Table III for the Javelin. In a similar vein, the live-fire portion of the MG academy begins with Tables IV-VI of the M240 qualification but then transitions to crew drills, gun emplacement/displacement, and squad actions. The LFX ends with a company SBF position utilizing six machine-gun teams.

Fire Support Certification (Phase I). FIST certification is conducted in accordance with TC 3-09.8, *Fire Support and Field Artillery Certification and Qualification*, and is validated by the brigade fire support officer.[2] Following certification, the battalion FSE conducts technical training on all digital fires devices, with a digital communications architecture validation as part of the training. The FSE then conducts CFFT to set conditions for observing and adjusting fires with UAS during MORTEP live tables.

UAS Certification (Phase I-II). UAS certification consists of two weeks of classroom and simulator instruction followed by one week of live flight training. Operators complete the Basic Operator Qualification online training prior to starting the classroom portion. After initial/refresher flights, operators conduct CFFT under the supervision of the battalion FSE to ensure familiarization with the terminology and technical procedures of fire support. This assists the operator in relay-

Figure 2 — Detailed Overview of Weapons Squad Training Progression

Anti-Tank Academy - Academics				
• Systems overview • Employment considerations • Planning considerations • Principles of direct fire control • Range estimation • Preliminary marksmanship instruction (PMI) methods	• Ammunition identification • M3 NVS • M3 and AT4 individual drills • M3 and AT4 crew drills • M3 maintenance	• Engagement Skills Trainer II (AT4) • M3 crew drills • M3 and AT4 testing	• Javelin - Training modules 1-5 & 8	
Javelin Basic Skills Trainer			Practical Exercise (PE) - Crew Drills	
Machine-Gun Academy - Academics				
• Roles and responsibilities • Planning for machine gunners, assistant gunners, and weapons squad leaders • Cycle of functions and maintenance	• Optics and lasers • Boresighting • PMI methods • Conducting Tables I-III • Machine-gun (MG) theory • Rate of fire • Fire commands	• Direct fire control measures • Range cards • MG math • Suppression time • Planning process • Field craft	•Gun team SOPs • Emplacement procedures • Terrain association	• Gun drill PEs • Crew emplacement PEs
MG Qualification - Tables I & III			MG Qualification - Table II	
Weapons Squad Academy - Live Fire				
MG Qualification - Tables IV-VI			AT Qualification - Tables IV-VI	
• Grouping drills • Known distance - 500m • Hand and arm signals	• Search and traverse • Plunging fires	• SOPs • Crew emplacement • Crew displacement • Fire control measures	• SOPs • Squad emplacement • Squad displacement • MG math	• Platoon support by fire (SBF) • Weapons squad live-fire exercise • Company SBF exercise

Week 1	Soldier Borne Sensor (SBS) introduction SBS capabilities	SBS preventive maintenance checks and services (PMCS)	Simple flight PE	Complex flight PE	Deliberate recovery PE
Week 2	Raven introduction Raven capabilities	Raven PMCS	One System Remote Video Terminal intro-duction and PE	Launch, recovery, flight planning	Intelligence collection planning
Week 3	Launch and recover PE	Simple flight PE	Complex flight PE	Night flight PE	Deliberate recovery PE

Figure 3 — UAS Certification Overview

ing accurate information to leaders and battalion staff while the FO concentrates on processing fire missions.

MORTEP (Phase I-II). Mortar platoons and company mortar sections conduct MORTEP according to IWTS, with the inclusion of UAS operators and FOs paired together to observe and adjust fires during Tables IV through VI.[3] In this way, we practice and validate the employment of UAS in support of indirect fires prior to the FSCX.

Leader Training. LPDs run concurrently with the train up and are augmented by hands-on observation of training occurring that week; briefs and demonstrations are given by trained instructors. The LPD progression mirrors the steps taken during the FSCX: enemy analysis, information collection (IC) plan, indirect fires echelonment, and then direct fires employment. The LPD series culminates in a tactical vignette and receipt of the FSCX's scenario. Platoon leaders then backbrief their plans and conduct a tactical exercise without troops (TEWT) with their weapons squad leaders and mortar section leaders of the actual exercise terrain.

Fire Support Coordination Exercise (Phase III). Typical FSCX scenarios have platoons echeloning fires in support of their own movement, which turns into a basic exercise in geometry and timing — a "walk and shoot." Our scenario instead places the emphasis on controlling fires in support of an adjacent platoon that is conducting a breach in support of an overall company deliberate attack. Platoons are given a covered-and-concealed route up to an assault position, allowing them to wait until the last possible moment to begin echeloning fires, first in support of their own SBF establishment and then in support of the adjacent platoon's movement up to the breach point. Platoon leaders also receive criteria for triggering the initiation of the adjacent unit's departure of its assault position. The company-level scenario with associated triggers emphasizes cross-communication between platoons, both for the assault initiation as well as controlling fires as the adjacent platoon approaches the objective. To this end, platoon leaders control their organic weapons squad with all weapons and have direct support from company sUAS, battalion mortars, and field artillery.

Training Crosswalk. The weapons squad academy and FSCX have sizable additional ammunition requirements. Ammunition bearers are often not included in ammunition calculation, but we highly recommend their inclusion if the ammunition is available. Weapons squad ammunition bearers should be qualified on both the M240 and Javelin systems.

Additional sub-caliber ammunition allows all AT4 and M3 crews to conduct Table V and VI from all five firing positions or to conduct Table VI and additional training on moving targets. While not allocated by STRAC, we recommend requesting as much live AT4 and M3 ammunition as possible for the AT academy; we do not recommend the use of high explosive (HE)/high-explosive dual purpose (HEDP) rounds during FSCX because of potential delays from misfires.

In addition to ammunition, this training plan requires Javelin BST systems, four dummy Javelin rounds, dummy

Figure 5 — Simplified FSCX Scenario Course of Action Sketch
(3/A is the execution platoon, while the two other platoons are notional with a company response cell providing key calls from these platoons.)

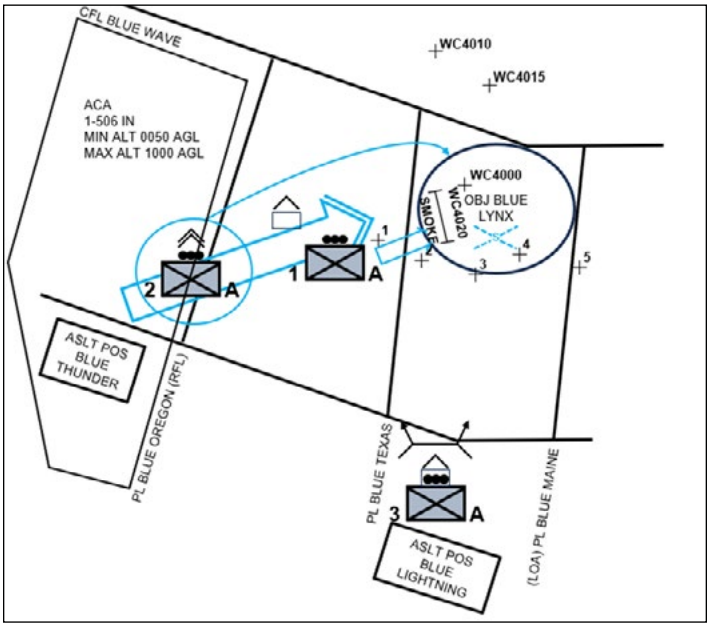
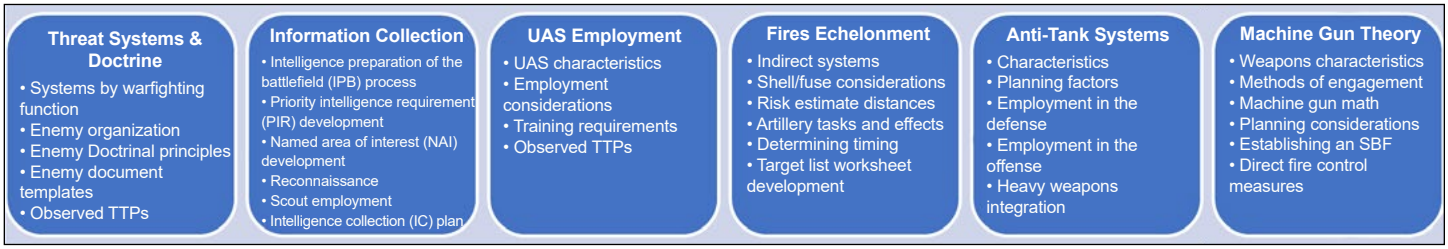


Figure 4 — LPD Agenda and Progression



M3 rounds, AT4 systems (two trainers and two inert), and a link of inert 7.62 rounds per participating machine-gun team. These are typically available from installation Training Support Centers.

To maximize training value, we recommend including moving targetry in the weapons squad academy. For FSCX, the scenario works best with a range that provides a covered/concealed route to a SBF position that maximizes the range of M240s while also allowing the platoon leader to adjust fires against targets on the objective and see the effects of fires. Vehicle hulks are the obvious targetry for this exercise. If a plethora of hulks are available, we recommend painting hulks to provide target differentiation. This also allows you to plan for scenario injects (for instance, white hulks for the original templated enemy, yellow for reinforcements, etc.). Depending on terrain, you may need to construct target reference points (TRPs) on the objective as well. Doctrine provides a variety of constructed TRP suggestions, such as diesel fuel and sand in ammunition cans. This gives the training audience ideas to incorporate into their own engagement area development during future exercises.

Observations and Lessons Learned

We noticed in early iterations that platoon leaders tended to conduct fires echelonment by rote execution, using UAS to simply confirm the presence of enemy on the objective prior to executing their target list worksheet. We coached later iterations to use their fires deliberately using a three-step process:

1) Understand the target and why we're shooting it. Use UAS (or other collection assets) to not merely confirm the presence of enemy on the objective but identify the exact disposition of the enemy in the form of a SALUTE (size, activity, location, unit, time, and equipment) report. Then, given the disposition, determine if the pre-planned targets and effects are still appropriate and meet the commander's intent to achieve his purpose.

2) Understand the targeting solution and why we're shooting that way. Given the disposition, determine the necessary adjustments to attack guidance. At a minimum, pre-planned target coordinates should be adjusted to maximize first-round effects. Platoon leaders may also need to consider changing shell/fuse combinations or reallocating systems altogether; if you've allocated a 60mm target against what turns out to be a BMP-3, it makes sense to switch it with the 105mm target you have templated against a dismounted trench system.

3) Ensure we achieved the desired effects. Confirming battle damage whenever possible, either by direct observation or with sUAS, ensures platoon leaders achieve the desired effects. Platoon leaders must then report these effects to their fellow leaders to ensure shared understanding and allow adjacent units to execute their own conditions-based actions. While unobserved fires are necessary in LSCO, platoon leaders should be held accountable for providing observation of fires when observation methods are available.

The three-step process is a coaching method for leaders at echelon to be deliberate in their use of fires, achieve commander's intent, and understand their mission within the larger operational concept. The battle damage assessment reporting requirement is crucial (when observation is possible) because it reinforces the purpose of the platoon's mission — suppression of Objective Blue Linx in support of their sister platoon.

Platoon leaders also initially struggled with thinking of their mission in the context of the higher commander's mission; they used assets to support their own movement and SBF emplacement instead of in support of the company. Coaching platoon leaders prior to FSCX to think of the larger mission in context is critical for FSCX success. Leaders must understand how and why they are suppressing and ensure they are properly employing the higher echelon assets entrusted to them.

Finally, we noticed that weapons squads continue to think of their ammunition bearers exclusively as a third member of the gun team and fail to account for their role in transporting AT munitions. This is an issue units will likely struggle with as we continue to transition to a LSCO training focus. Proper resourcing of training aids and strict enforcement of AT drills during dry iterations are critical to reinforcing the importance of ammunition bearers for keeping AT assets in the fight.

Identified Gaps and Recommendations

Doctrine. IWTS provides a thorough training glidepath and qualification criteria for small arms, gunnery, and crew-served systems, but it only provides a generic "Special Purpose Weapons" qualification outline, which also includes shotguns and M320 grenade launchers.[4] The TC for Javelin training provides a training timeline for the BST and Field Skills Trainer but does not provide specific testing or qualification criteria in the way that vehicle gunnery does.[5] Likewise, the M3 TC does not have specific training gates or a training timeline associated with qualification.[6] For instance, there are no vehicle or ammunition identification testing requirements. We recommend publishing a new TC specifically addressing AT weapons with prescriptive qualification tables and specified testing criteria for Tables I and II.

Material. Training aids for the Javelin (replicant rounds and BST) are available through the Training Support Center but may be limited in number. We recommend issuing units a BST and replicant rounds to both enable training as well as reinforce the practical realities of carrying two Javelin rounds per command launch unit. As a field expedient alternative, units can approximate the size and weight of rounds and construct dummy rounds using PVC pipe and filler material.

Regarding sUAS, the aerial intelligence, surveillance, and reconnaissance gap at the battalion level becomes especially apparent during this training glidepath; other officers have already identified and discussed this lack of battalion-level sUAS assets.[7] While the battalion scout platoon conducts reconnaissance and answers priority intelligence requirements, the scout platoon and its reconnaissance teams

lack the mobility of an aerial asset to quickly maneuver around the battlefield.

The future division force structures include sUAS munition delivery in the multifunction reconnaissance troops, but we argue that battalions should also receive sUAS assets capable of delivering munitions. The ability to rapidly identify and engage key weapon systems can have an outsized effect on tactical operations (for instance, identifying and targeting enemy breaching assets or re-seeding breach lanes with a small scale, UAS-delivered point minefield). Armed UAS would also mitigate the risk of employing the battalion assault platoon, a key asset against a mechanized force. Armed sUAS can screen a company's advance as well as defeat point AT systems along the company's axis of advance.

Soldiers with 1st Battalion, 506th Infantry Regiment conduct AT4 live-fire training in Adazi, Latvia, on 17 September 2023. (Photo by SGT Cesar Salazar Jr.)

Organization. We also recommend creating a UAS section with dedicated operators at the battalion level, which could be overseen by the battalion S2. Current sUAS are bulky, and the light infantry battalion modified table of organization and equipment does not have a dedicated position for sUAS operators. This is especially hard for company commanders to buy into as the LSCO fight demands our Soldiers carry a greater variety of systems into a fight, such as additional AT, breaching, and counter-mobility systems (e.g., Anti-Personnel Obstacle Breaching System) and air defense/counter-UAS systems. Furthermore, smaller systems with lower training requirements, such as Soldier Borne Sensors (SBS), are now available to company commanders. For light infantry company commanders, legacy systems inevitably are lower in priority than commercial UAS solutions and lethal enablers, and thus are underutilized.

Conclusion

While the FSCX methodology we developed focuses on platoon-level leadership, it is both scalable and tailorable to the needs of the unit and the expertise of the training audience. It allows battalions or brigades to train sensor-to-shooter linkage at echelon and incorporate staffs and enabling units who train to achieve their own collective task proficiency. For example, brigade staffs can build a robust enemy scenario to practice executing the deep fight and presenting the desired correlation of forces and means to platoon leaders. Incorporating assault/AT platoons, howitzer batteries, and attack aviation allows these formations to meet training objectives while giving platoon leaders real-world effects feedback and building further complexity to challenge experienced platoon leaders. The key to all of this, as shown in our own enabler integration training strategy, is a methodical and concurrent training glidepath for all enablers with deliberate integration training prior to FSCX execution.

Notes

[1] Training Circular (TC) 3-20.31-1. *Gunnery Skills Test*, November 2015, Chapter 2, Section II. Note: This exceeds the vehicle identification testing requirements for fire support team certification as listed in Chapter 6 of TC 3-09.8, *Fire Support and Field Artillery Certification and Qualification*, March 2020.

[2] TC 3-09.8, Chapter 6.

[3] TC 3-20.33, *Training and Qualification of Mortars*, August 2017.

[4] TC 3-20.40, *Training and Qualification – Individual Weapons*, July 2019, Chapter 1.

[5] TC 3-22.37, *Javelin – Close Combat Missile System*, August 2013, Chapter 3.

[6] TC 3-22.84, *M3 Multi-Role, Anti Armor Anti-Personnel Weapon System*, July 2019.

[7] LTC Michael Hamilton and CPT Christopher J. Egan, "Improving the Tactical Employment of sUAS for Light Infantry Battalions in Decisive Action," *Infantry* 112/2 (Summer 2023), https://www.moore.army.mil/infantry/magazine/issues/2023/Summer/pdf/8_Hamilton_SUAS_txt.pdf.

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Rangers Lead the Way in LSCO

Applying the Principles of Patrolling to Large-Scale Combat Operations at NTC

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According to Training Circular (TC) 3-21.76, *Ranger Handbook*, all patrols are governed by five principles: planning, reconnaissance, security, control, and common sense. While each principle in concept is basic, and each one is codified within existing Army publications, not enough Soldiers and leaders use them in training for large-scale combat operations (LSCO) at the National Training Center (NTC) at Fort Irwin, CA. It is our perspective that if our crews, squads, platoons, and companies are to be successful on the future battlefields for which we are training, the five principles of patrolling must be reinvigorated.

Citations from both TC 3-21.76 and Army Techniques Publication (ATP) 3-20.15, *Tank Platoon*, are useful for translating the observations of more than 30 Stryker infantry, mechanized infantry, and armored tank companies during their respective rotations at NTC into lessons learned. It is remarkable how principles derived from some of the nation's earliest Rangers facilitate the understanding and application of tactics and techniques found within ATP 3-20.15 and ATP 3-21.8, *Infantry Rifle Platoon and Squad*. In this article, each principle is accompanied by a tactic or technique for practical application and a vignette observed during force-on-force operations at NTC. Units that plan, prepare, and execute using the five principles of patrolling tend to succeed, and those that don't tend to suffer defeat to varying extents.

Planning

"Quickly make a simple plan and effectively communicate it to the lowest level. A great plan that takes forever to complete and is poorly disseminated isn't a great plan. Plan and prepare to a realistic standard and rehearse everything."
— TC 3-21.76, 7-1

A Soldier assigned to the 1st Stryker Brigade Combat Team, 4th Infantry Division scans for enemy targets during Decisive Action Rotation 23-10 at the National Training Center, Fort Irwin, CA, on 17 September 2023. (Photo by PFC Nathaniel Garrett)

During NTC's Leader Training Program, leaders from the 2nd Armored Brigade Combat Team, 1st Cavalry Division conduct a terrain model walkthrough in January 2022 at Fort Irwin. (Photo courtesy of 2nd ABCT, 1st Cavalry Division)

"Planning is the art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about (ADP [Army Doctrine Publication] 5-0). A platoon leader/platoon commander receives a task and purpose from the company commander as a warning order (WARNORD) or operation order (OPORD) and begins the planning process."

— ATP 3-20.15, 2-3

Successful units plan and rehearse using a quality terrain model. A terrain model is a graphic depiction of the area of operations (AO) that displays the routes, key terrain, and critical graphic control measures for the operation. Both the tank platoon publication and the *Ranger Handbook* list elements to be included when building a terrain model. The terrain model should be large enough and detailed enough for the unit to rehearse by either physically walking or moving icons amidst the depicted terrain and graphic control measures. Gathering materials in a terrain model kit is paramount to ensuring a large, clear, usable model can be built at all echelons, including the company and platoon levels. The quality of the terrain model positively correlates to the depth of each Soldier's understanding of the plan.

During one recent NTC rotation, a tank company from Fort Bliss, TX, provided maximum situational awareness to its individual tank commanders by utilizing a detailed company terrain model. As a result, a single tank crew was able to engage and destroy the single enemy main battle tank that had halted an entire brigade's worth of reconnaissance elements from a well-covered and concealed position, restoring momentum for their brigade.

Conversely, units that do not rehearse using a terrain model suffer from a lack of detailed understanding of the plan at the lowest level. While company commanders or platoon leaders may be able to visualize the order they received, tank commanders and dismounted squad leaders have no such context with which to visualize. Despite receiving a clear task, purpose, and end state, NTC observer-coach/trainers (OC/Ts) observed another infantry company advance beyond its limit of advance and lose the entire company's worth of Bradleys to two enemy anti-tank trucks. If vehicle commanders had been visually exposed to their AO through a terrain model, their situational awareness of the boundaries associated with their movement and maneuver would have increased, mitigating significant risk. Successful units plan and rehearse using a terrain model to maximize situational awareness to the lowest level.

Reconnaissance

"Your responsibility as a Ranger leader is to confirm what you think you know, and to learn that which you do not already know."

— TC 3-21.76, 7-1

Successful units conduct a leader's reconnaissance with whatever means available. There are three types of reconnaissance capabilities available to every armored or Stryker brigade combat team (ABCT/SBCT) company formation: organic leaders, organic sensors, and adjacent units.

The leader's reconnaissance is a significantly underutilized method of information gathering available to the ground force. Platoons and companies have strayed away from conducting ground reconnaissance organically due to the increase in technologically advanced sensors available. Oftentimes, units conduct missions without any confirmation of the assumptions they have made in planning with respect to templated obstacles, enemy forces, or objective composition. This makes lethality a much more significant challenge.

The composition of the leader's reconnaissance element, reconnaissance party, or quartering party varies based on the unit's progress within the troop leading procedures and leaders available to conduct the reconnaissance. According to both ATPs 3-21.8 and 3-20.15, all echelons of leaders are suitable to conduct reconnaissance, as long as they are provided with sufficient reconnaissance guidance and a timeline within which to operate.

ATP 3-20.15 advises the use of a leader's reconnaissance at several points in the operation, and ATP 3-21.8 lists the objectives of the reconnaissance.[1] Leaders should conduct reconnaissance of routes to and from assembly areas, start points and release points along routes, difficult or disorienting terrain, intervisibility lines, and last covered and concealed positions within the AO. When able, leaders should mark positions, checkpoints, or danger areas using predetermined marking techniques (considering daytime and limited visibility marking solutions) to ensure efficient movement into and out of pre-planned positions.

All ABCTs and SBCTs possess several organic sensors available to assist in reconnaissance, beginning with the company fire support element (FSE). Bradley fire support teams (BFISTs) and fire support vehicles (FSVs) are equipped with the Fire Support Sensor System (FS3) of the Long Range Advanced Scout Surveillance System capable of providing accurate military grid reference system (MGRS) locations at a range of over 10 kilometers. Company FSEs can also employ various models of dismounted laser target locator modules (LTLMs) effective at comparable accuracy and range to mounted systems. These tools make the company FSE the furthest ranging organic sensor in the company, and it should be deliberately employed at all phases of the operation. Additionally, the commander's independent thermal viewer (CITV) onboard the M1 Abrams and the remote weapon system (RWS) optics onboard the Stryker are also capable of observation. The employment of any of these sensors in concealed observation posts or battle positions can effectively answer information requirements the commander needs to succeed, all while positioned safely outside the enemy's maximum engagement line (MEL).

Coordination with adjacent units is a third reconnaissance capability available to ABCT and SBCT platoons and companies. By utilizing unit icons on the Joint Battle Command Platform (JBC-P) and a brigade communications card, any element can coordinate with an adjacent unit in the AO to better understand the environment.

Successful units conduct reconnaissance using organic leaders and sensors to preserve their combat power out of contact for as long as possible, before concentrating on the decisive point.[2]

Recently, NTC OC/Ts observed two tank companies prepare to attack the Iron Triangle from west to east through the Sawtooth Pass Complex. Both commanders conducted a leader's reconnaissance of their passage routes through the complex terrain. The first commander (Company A) took his tank and a wing tank slowly through his passage route (the Goat Trail) and marked a handrail with chem lights for his platoons that would traverse the route later that evening. The second, less-prepared commander (Company B) conducted only a map reconnaissance with his platoon leaders to identify his passage route (Brown Pass).

Soldiers in Company A, facilitated by their marked route, efficiently passed through the complex terrain and into their attack-by-fire positions on the far side in under 10 minutes, engaging the enemy before he could react. Conversely, Company B received several catastrophic kills from enemy BRDMs hidden in an unaccounted urban area immediately upon traversing the pass. This ultimately resulted in an 80-percent combat power loss enroute to pre-planned positions.

Successful units conduct reconnaissance using organic leaders and sensors to preserve their combat power out of contact for as long as possible, before concentrating on the decisive point.[2]

Security

"Preserve your force as a whole. Every Ranger and every rifle counts, either one could be the difference between victory and defeat."

— TC 3-21.76, 7-1

Successful units achieve and maintain security throughout all types of operations by effectively utilizing hide sites to conceal their combat power until the predetermined trigger to apply it. Hide sites, or hide positions, are naturally covered and concealed positions away from primary positions, intended to protect equipment from enemy contact while allowing employment of small arms and sensors for observation.[3]

Leaders plan for the use of hide sites throughout all phases of the operation, including but not limited to assault positions in the offense or hide sites during the defense. Intelligence preparation of the

A Soldier in the 2nd Armored Brigade Combat Team, 3rd Infantry Division conducts reconnaissance during NTC Decisive Action Rotation 23-05 on 27 February 2023. (Photo by PVT Anastasiya Ludchenko)

Soldiers assigned to the 2nd Armored Brigade Combat Team, 3rd Infantry Division communicate and observe the battlefield during a live-fire exercise at NTC on 8 March 2023. (Photo by SPC Duke Edwards)

battlefield (IPB), specifically with respect to enemy maximum engagement lines and observation capabilities, is critical to proper hide site selection.

The tank platoon publication discusses the use of cover and concealment, particularly with respect to vehicle characteristics and terrain backdrop to effectively hide. Crew members should consider the color of their vehicle and its contrast to what is directly behind them and below them, as seen from an observer on and above the ground. The prevalence of small unmanned aerial systems (sUAS) has expanded enemy observation capabilities from solely ground-based sensors. Vehicle crews should use all available operations security (OPSEC) measures to reduce their ability to be seen by the enemy while occupying hide positions.

Recently, OC/Ts observed a mounted infantry company conducting operations solely during periods of darkness in a "reverse-cycle" battle rhythm. Under concealment of darkness and terrain, the infantry company utilized multiple dispersed, platoon-sized hide sites to cache vehicles outside of enemy battle positions prior to actions on the objective. The company culminated all actions on the objective before morning nautical twilight, remounted their vehicles, and occupied preplanned, platoon-sized hide sites to conceal under camouflage nets nestled into complex terrain in wait for follow-on operations.

Units that employ effective camouflage and dispersion relevant to their operating environment tend to preserve their force longer during LSCO.

Control

"Clarify the concept of the operation and commander's intent, coupled with disciplined communications, to bring every Soldier and weapon available to overwhelm the enemy at the decisive point."

— TC 3-21.76, 7-1

Successful units plan and execute operations using thorough but flexible graphic control measures (GCMs). Granular detail in planning is how we simultaneously maximize safety and lethality. Units must maneuver all forces on the battlefield using GCMs from the assembly area to hasty battle position (BP) at the limit of advance (LOA), and everything in between.

Since unit staffs plan two levels down per Field Manual (FM) 3-0, *Operations*, GCMs should account for that level of detail throughout all phases of the operation. That is, control measures should provide the requisite space to maneuver while maximizing safe adjacent unit influence against that terrain and enemy.

As time allows, GCMs can be published and disseminated in accordance with discussed branch plans, sequels, and other contingency plans. These GCMs can be published in a fragmentary order (FRAGORD) at a later date, but they should be as conclusive as possible. Higher headquarters and adjacent unit graphics are critical, as units could find themselves operating outside their intended AO and utilize them to quickly achieve situational awareness and coordinate for support.

One technique of effective GCMs that OC/Ts have recently observed is a map-board overlay of terrain-based target reference points (TRPs) covering the entirety of NTC. This technique enabled flexibility by allowing the company commander to quickly and accurately orient movement, fires, and other actions to precise locations on the ground by referencing the TRPs distributed to his entire element via this overlay.

When units do not employ effective GCMs, they severely

limit their ability to mass direct fires against the enemy. OC/Ts all too frequently observe units' self-inflicted confinement of movement and maneuver to roads and trails, with them often maintaining a column formation into direct fire contact. By not employing flexible GCMs such as an axis of advance or direction of attack, the unit is unable to safely engage the enemy due to the masking of every vehicle weapon system in trail. This often results in overwhelming losses to combat power and a lackluster live-fire exercise due to surface danger zone and gun-target-line violations from the trail vehicles.

Leaders who can trace their finger along a GCM from the assault position to the hasty BP past the LOA are consistently able to maintain tempo, situational awareness, and safety as opposed to their counterparts who employ incomplete GCMs. There is also a positive correlation between mission success and the dissemination of planned GCMs to leaders at the fire team and crew level. A well-thought-out plan that is not shared limits flexibility and tempo the unit could have had if GCMs were disseminated further down into the formation.

Common Sense

"Use all available information and good judgment to make sound, timely decisions."

— TC 3-21.76, 7-1

Common sense is the only principle that must be effectively taught and implemented prior to the rotation to NTC as it takes significant time and mentorship to develop. "Each leader-subordinate interaction is a development opportunity. They are inseparable from training, enforcing standards, providing feedback, and setting a personal example."[4] The tenet of "supportive relationships and a culture of learning" is critical to "providing, accepting, and acting on candid assessment and feedback for self-awareness."[5] It is through this support that leaders develop the ability to make common-sense decisions.

Successful units have developed prepared leaders. A prepared leader is disciplined, confident, mentally agile, and expresses good judgment — the example to follow. From our observations, prepared leaders are developed by focusing on the following competencies:[6]

- **Physical Fitness** (achieving goals through disciplined adherence to good fitness plans)
- **Mental and Emotional Resilience** (cultivating the ability to maintain focus while experiencing and recovering from adversity, tactical or otherwise)
- **Communication** (giving and receiving of feedback — message sent, received, and confirmed)
- **Farsightedness** (ability to anticipate, plan, execute, and adapt; leaders must be visionaries)
- **Military Bearing** (technical and tactical competence of your craft that inspires others to emulate your competence)

Prepared leaders who have developed these five attributes and competencies will find themselves able to apply common sense in training for LSCO. Common sense and good judgment allow future combat leaders to succeed in the complexity of LSCO.

Conclusion

Maneuver leaders must refocus crews, squad, platoons, and companies at the point of contact on the basics during this time of transition back to LSCO. While planning and preparation efforts at the battalion and above are extensive, winning the first battle of the next war is wholly dependent on the Soldiers clearing, seizing, and holding the terrain deemed to be operationally and strategically important. The five principles of patrolling have existed through decades of all types of conflict and combat in various environments. They establish the fundamental skills and abilities that our warfighters must be proficient in to enable successful multi-domain operations in LSCO.

Notes

[1] Army Techniques Publication (ATP) 3-20.15, *Tank Platoon*, July 2019, Chapters 3 and 7; ATP 3-21.8, *Infantry Rifle Platoon and Squad*, January 2024, 7-15 and 7-16.
[2] ATP 3-20.15, 7-66.
[3] Ibid, 4-72.
[4] Field Manual 6-22, *Developing Leaders*, November 2022, 1-1.
[5] Ibid, 1-2.
[6] Army Doctrine Publication 6-22, *Army Leadership and the Profession*, July 2019, Figure 1-3, Leadership Requirements Model.

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The Platoon LFX at IBOLC

COL NEIL MYRES
LTC TOMMY DULL
CPT CASEY SCHARIO
CPT KIRK WORKMAN

The platoon live-fire exercise (LFX) is a culminating event for officers attending the Infantry Basic Officer Leader Course (IBOLC). It provides the student officers the opportunity to demonstrate and apply their practical knowledge of infantry and leadership skills during a deliberate attack in a contested environment.

During the LFX, the students are coached and mentored to focus the operation on fundamental battle tasks that must be accomplished to defeat an adversary in direct and close combat action. Students plan using troop leading procedures and confirm their respective plans by conducting a tactical exercise without troops (TEWT). Students then conduct specific rehearsals of small unit assigned tasks and battle drills such as changing out machine-gun barrels, cutting wire for tactical obstacles, laying in support-by-fire (SBF) positions, and entering a trench (Battle Drill 7).

To be prepared to fight in a communication-degraded environment and under electronic warfare (EW) conditions, students establish realistic primary, alternate, contingency, and emergency (PACE) communication plans that limit time on Army radio systems. Prior to the LFX, the PACE plan is distributed among all members of the platoon and rehearsed at scale (farthest distances between elements) to confirm its feasibility. Additionally, the student officers conduct a communication technical rehearsal where all key leaders, over a terrain model, walk through the operation calling out triggers and cues to maintain organization, discipline, and most importantly, tempo.

Tempo is significant to the success of the LFX mission. Tempo, as defined by Army Doctrine Publication 3-90, *Offense and Defense*, is "the rate of speed and rhythm of military operations over time with respect to the enemy." Because the students are in a contested environment for this training exercise, it is assumed that they are being censored. Once they initiate the attack, the enemy knows exactly where the platoon is (or is moving to) and therefore attempts to find the platoon and fix or destroy it to hinder the offensive success. To this point, every member of the platoon wears a watch and tracks the time. The platoon must be "fast" enough to stay in front of the enemy's counteractions but "rhythmed" enough to not lose discipline and organization during the attack.

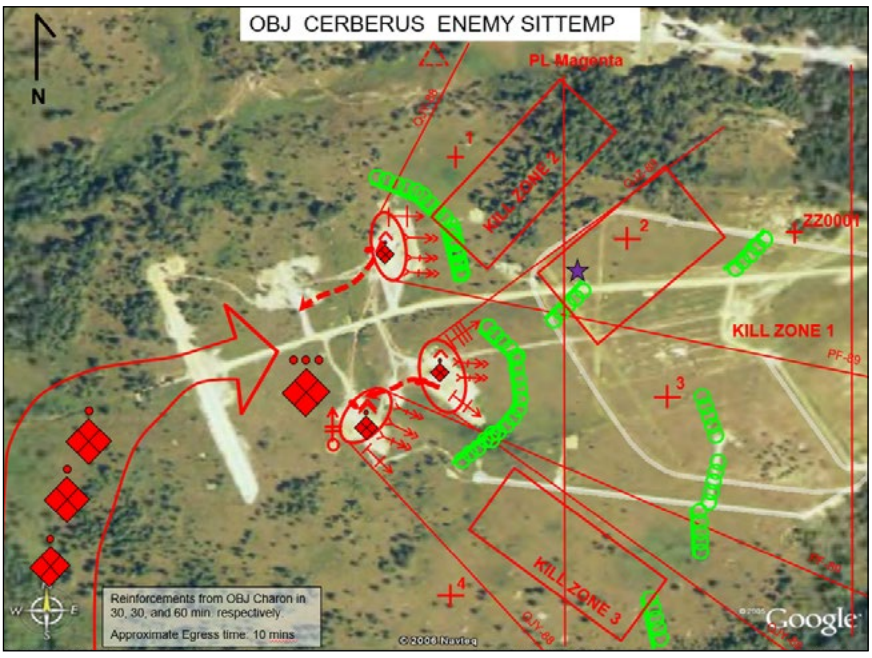
Enemy Situation

In the operation order given to the students, the enemy situation is straight forward and realistic. An enemy squad (plus) is holding the trench utilizing fortified bunkers and has been in place for a minimum of seven days. A named area of interest (NAI) is located to the south and east of the trench with a suspected listening post/observation post (LP/OP). Enemy targets will present themselves to the west of SBF 2 as U.S. forces begin to establish. The enemy is templated to have FM communications capabilities, and

IBOLC Platoon Live-Fire Exercise Quick Facts

- The IBOLC platoon LFX occurs during week 17 of 19 in the course program of instruction (POI).
- It replicates a deliberate attack under large-scale combat operations (LSCO); the objective is a seizure of an enemy trench system.
- The LFX is predicated on tempo and grounded in infantry leadership and battle skills.
- Small unmanned aerial systems are used to support the platoon attack.
- By week 17 in IBOLC, student officers have learned troop leading procedures, battle drills, rehearsals, communication, and holistic fitness; this training and education culminates and is measured during the platoon LFX. At this point in the course, students are two weeks from completing and graduating IBOLC.

Figure — Platoon LFX Enemy Situation Template



Infantry Basic Officer Leader Course students provide supporting fire during Class 02-24's platoon live-fire exercise. (Photos courtesy of 2nd Battalion, 11th Infantry Regiment)

the trench is within range of enemy mortars and artillery. The trench is protected by triple-strand concertina wire which the students mechanically breach. Enemy (one level up) is in vicinity of the objective with reinforcements on target within 10 minutes. The trigger for enemy reinforcement is U.S. forces massing on a breach site.

Firing Positions

The scenario is built around three templated SBF locations tied to four phase lines. SBF 1 is the furthest east position and enables freedom of maneuver for the platoon to begin its clearance of the NAI. Once the student platoon leader calls the fire mission, the lane begins and students cross the first phase line. As the students clear the NAI, they encounter the two-man LP/OP. Once they have cleared it, a casualty is assessed and the platoon continues past the second phase line, triggering the first shift fire. SBF 2 is located directly south and west of the trench and provides isolation for the breach and assault force.

At the third phase line, the breaching squad moves to a position of cover that is created with sandbags, which serves as a rally point for the breach squad to conduct individual movement techniques to the local SBF just outside the breach. Students suppress the trench at close range and conduct their final shift fire off the trench, opening the lane for the breaching team to begin cutting. As soon as local SBF is established, SOSRA (suppress, obscure, secure, reduce, assault) has begun. The final position, SBF 3, is located on the west side of the trench and serves as the western-most position in the hasty defense for the enemy counterattack that is inbound.

Mortar Fire Support

As platoon leaders, the students will be expected to be proficient in the use of indirect fire to enable maneuver. For the exercise, a highly professional mortar platoon from 1st Battalion, 19th Infantry Regiment provides realistic feedback, further enabling the instructional purpose of the LFX. During the planning and preparation phase of the operation, the students prepare a target list worksheet comprising various targets templated on and beyond the objective. The mortar section fires all missions into an impact area located roughly 300 meters to the west, allowing student observers to adjust fire in real time. The student platoon leader communicates directly to the fire direction center via FM communication to adjust fire onto preplanned targets and targets of opportunity. The 1-19 IN provides a section of 60mm mortars to serve as the company mortars as well as a section of 81mm mortars to serve as the battalion-level indirect asset. Having these professional NCOs serve as the company fire support officer/NCO allows for student platoon leaders to receive enhanced real-world experience as they complete repetitions communicating exactly as they will when they join the force at their unit.

Trench Operations

Students begin preparing for trench operations during Basic Rifle Marksmanship 2 (week 4 of 19) where they conduct urban rifle marksmanship qualification with their assigned weapon to prepare for close quarters engagements. During "Team/Squad Operations" (week 8), they learn the fundamentals of Battle Drill 7 (enter a trench and secure a foothold) as a squad. Their training progresses

An Infantry Basic Officer Leader Course cadre member follows the lead assault element during the platoon live-fire exercise's trench operations.

during introduction to “Platoon Operations” (week 11) where students conduct Battle Drill 7 as a platoon. This battle drill is trained concurrently with Battle Drill 8 (breach a mined wire obstacle) during this week. During “Urban Operations” (week 16), students are taught Battle Drill 6 (enter and clear a room) as well as how to maneuver through various urban terrain to include hallways, rooftops, and stairs.

The students’ culminating “Platoon Live Fire” (week 17) incorporates Battle Drills 7 and 8 together under live-fire conditions. The method of breaching is mechanical via bolt cutters. A key focal point is how the breach point is marked with engineer tape on the left handrail, as well as the entry point to the trench with a VS-17 panel. Students enter the trench by employing two hand grenades at the initial entry point. Once the first team has entered the trench, the lead person extends a “Moses Pole” consisting of a long whip antenna with a VS-17 on the top for daytime marking; an infrared chemlight replaces the VS-17 for nighttime marking. This allows the entire platoon to track the frontline trace of friendly elements moving along the trench. Students are taught to conceal the Moses Pole’s overt marking to prevent unnecessary exposure before entering the trench.

As the students maneuver through the trench, the assault element is issued 10 grenades to employ one at each dragon tooth (eight total), plus two for the initial entry. While in the trench, there are two drop target engagements along the long axis of the trench. These are constructed using three-dimensional “ivan” targets with 550 cord tied to a balloon. The balloon is in the target center of mass so when the student accurately engages the center of mass, the balloon will deflate. This causes the entire target to drop, thus replicating an incapacitated enemy. To control this engagement, a cadre member is directly behind the lead assault element with the ability to cease fire should an unsafe act occur. Additionally, the blank iteration is used as the criteria to determine if platoons can safely engage targets in the trench. If they cannot execute the battle drill safely, they will not progress to live fire in the trench.

Small Unmanned Aerial Systems (sUAS)

To further enable the platoon, use of sUAS at the platoon level has been introduced. The DJI Mavic 3 drone is provided to the platoon leader as an asset outside of the typical company Raven and battalion Puma. As seen in the Ukrainian conflict, the lethality of small drones has been proven and tested. Army Techniques Publication (ATP) 7-100.1, *Russian Tactics*, highlights the use of Russian sUAS from a “red hat” perspective. IBOLC introduces Battle Drill 15 (react to sUAS) in the training progression prior to the platoon LFX to train red air while patrolling, but we have also found the training value of friendly sUAS greatly outweighs that of simulating red air during the LFX. The student platoon leader communicates via FM with the cadre drone operator who can be located off site at the tower or with the platoon leader on the lane. As company commanders evaluate platoon leaders, they also provide injects for use of the drone, which range

A drone pilot watches as a fire team maneuvers on an enemy location.

from pushing information to higher to coaching the platoon leader to use the drone to clear routes for SBF 1, 2, and 3. The drone is highly mobile and mimics the quadcopters used by Ukrainians and Russians in Europe. Due to its size and mobility, the drone can be used to clear blind corners in the trench and observe indirect fire. Student platoon leaders’ ability to communicate to higher and synchronize the use of their own internal sUAS (Mavic 3) to coordinate shift and lift direct and indirect fire are the primary points they are graded on in that position.

Rehearsals

The officers are given a substantial amount of time to conduct rehearsals for the LFX. These include battle drill, fire coordination exercise, and communication rehearsals. The battle drill rehearsals include breaching (cutting wire, emplacing smoke, and opening the lane), trench clearing (deliberate and methodically) with M249 placement and grenade preparation, SBF occupation (a tadpole design that lays out by position where each member of the squad/team is on the SBF line), and barrel change outs for all unit machine guns. The fire coordination exercise allows the platoon to synchronize direct and indirect fires in the attack while confirming triggers, shift fires, and cues.

Large-Scale Combat Operations (LSCO) Considerations for Consolidation, Reorganization, and Transition to Future Operations

Earlier, we discussed tempo and the need to establish rhythm to successfully synchronize the attack. One of the main efforts at IBOLC is to prepare the students for future conflict in LSCO. This has changed the mindset of what and how we teach beyond assaulting the objective. Long gone

are the days of the high-fives from SBF 1 once they lift fire. With LSCO in mind, we are training the continuous fight while preparing forces for follow-on operations. Our weapons squads are being trained on ammunition conservation with focus beyond their immediate mission. They are part of the platoon operation, not just at the beginning but throughout the entire mission. The Infantry gains and maintains ground while preparing for future missions, and bringing our most casualty-producing weapons at the platoon level to the objective in preparation for what's next is pivotal to the platoon and company's success. The developed scenario requires the platoon leader to focus on all his/her forces during consolidation and reorganization and requires additional planning beyond the objective.

In LSCO, our platoon leaders will need to be trained not only to get to the fight and win but also to focus on the enemy situation and prepare for the next fight. Training during the platoon live fire is a culmination of weeks of emphasis on basic infantry skills while providing a challenging environment where platoon leaders are forced to think beyond what is presented in front of them. Our goal in IBOLC is to prepare lieutenants to deploy to combat and be successful on Day 1 at their first unit of assignment, and these LSCO adjustments to the platoon live fire are giving them early exposure to decisions they may be required to make in the future.

The platoon live fire has morphed over the years, and we continue to change alongside advancing doctrine. The one thing that remains constant at IBOLC is that the infantry platoon remains at the tip of the spear. It prepares to fight and win the current fight and transitions to preparation for follow-on operations. The platoons never cede ground, and they reinforce their elements to remain in control of hard-fought territory. The IBOLC platoon live fire is a great opportunity for our students to see what right looks like under training conditions to prepare them as they head to their first units, where preparation and training may not be a luxury.

Students in IBOLC Class 09-23 conduct a platoon live-fire exercise at Galloway Range.

The Infantry gains and maintains ground while preparing for future missions, and bringing our most casualty-producing weapons at the platoon level to the objective in preparation for what's next is pivotal to the platoon and company's success.

Conclusion

Student officers at IBOLC experience a realistic and tough training scenario during the platoon LFX. They fight under LSCO conditions against an alert and determined enemy and must utilize tempo in the offense and synchronize indirect and direct weapon systems to achieve isolation. The students maximize battle drill rehearsals to eliminate and mitigate risk at points of friction, which helps them understand the rigors of close quarter/ground combat and better prepare them for leading in similar situations as Infantry officers in our Army.

COL Neil Myres, an Infantry officer, currently commands the 199th Infantry Brigade (Leader Brigade) at Fort Moore, GA. He has served at all levels from platoon through division and has numerous deployments in support of the global war on terrorism.

LTC Tommy Dull, an Infantry officer, currently commands the 2nd Battalion, 11th Infantry Regiment (Infantry Basic Officer Leader Course) at Fort Moore. He has served as a platoon leader, company executive officer (XO), troop and company commander, aide-de-camp, and battalion and brigade executive officer. LTC Dull has deployed in support of Operations Enduring Freedom, Iraqi Freedom, Unified Response, Freedom Sentinel, and Atlantic Resolve.

CPT Casey Schario, an Infantry officer, currently commands Headquarters and Headquarters Company, 2-11 IN. He has served as a platoon leader, company XO, and company commander. CPT Schario has deployed in support of Operations Freedom Sentinel and Inherent Resolve.

CPT Kirk Workman, an Infantry officer, currently commands D Company, 2-11 IN. He has served as a rifle platoon leader, mortar platoon leader, and rifle company XO in the 173rd Infantry Brigade Combat Team (Airborne) as well as an IBOLC platoon trainer in 2-11th IN. He has also participated in operations in support of Enhanced Vigilance Activities.

Commercial sUAS in Support of Targeting

CPT CODY ROSENBERG

In 2017, the Islamic State of Iraq and the Levant weaponized commercial off-the-shelf (COTS) small unmanned aerial systems (sUAS); the first drones were outfitted with rudimentary systems that dropped grenades and 60mm mortars.[1] Fast forward to the Nagorno-Karabakh conflict and we saw Azerbaijan successfully target Armenian armored forces using Turkish Bayraktar TB2 drones. In the Russian invasion of Ukraine, we have seen extensive use of drones from both sides — at both the tactical and strategic level.

These systems are, and will continue to be, a great threat on the modern battlefield. While our anti-access and area denial (A2AD) bubble may protect us from enemy fighters and bombers, we may not be adequately equipped nor trained to protect against the sUAS threat — which makes them perfect for enemy use to conduct reconnaissance, locate high-payoff targets (HPTs), and strike targets of opportunity against U.S. forces.

During 3rd Battalion, 509th Parachute Infantry Regiment's recent participation in Joint Pacific Multinational Readiness Center – Alaska (JPMRC-AK) Rotation 24-02 as the opposing force (OPFOR), we were augmented with various commercially available quadcopters and fixed-wing systems such as the DJI Phantom 4 Pro, TSTORM, and Mavic Air 2. We integrated these systems into our collection matrix which resulted in the destruction of dozens of HPTs — including the brigade tactical operations center (TOC), brigade support area (BSA), Role 2, artillery batteries, and counter-battery radars.

Our success was largely the result of a seamless integration of the operations, intelligence, cyber, and fires warfighting functions to allocate collection to determine targets. First, we identified the high-value target (HVT) and HPT lists for that battle period. Next, the intelligence, cyber, operations, and fires teams combined the collection and fires synchronization matrices into one product to reduce the time spent editing documents. Of note, we routinely consulted the warfighting function leads to help us determine where assets would be located — forming a battalion-level targeting board.

When it came to integrating COTS sUAS into the targeting cycle, they would generally be cued on by echelons above brigade (EAB) assets to validate and pull a 10-digit grid. Then the drone operators would relay the target location to the S2, who would push it to the fires cell while the drone remained on station as the observer. This gave us the ability to immediately assess battle damage as well as adjust fire off the drone feed.

Adopting these techniques at the battalion level while employing COTS sUAS led to the destruction of at least one of everything on our HVT list during the rotation. In large-scale combat operations, we must assume that our near-peer adversaries have the same capabilities that we do and carefully consider this risk. Becoming untargetable is impossible. However, there are actions leaders can take now to mitigate the risk of catastrophic strikes against critical assets and succeed during Combat Training Center (CTC) rotations. Listed below are some successful tactics that our organization observed while acting as OPFOR during JPMRC-AK 24-02:

1) Camouflage. Generally, the rotational training unit (RTU) did a good job at attempting to camouflage tents and gun positions, but more often than not, vehicles or satellites parked in the open gave them away. If a drone feed picked up multiple vehicles, we would then conduct a more thorough search for a tent or expando van. Once located, we would call for fire on this location with a 10-digit grid. We also applied this technique to locate 120mm mortars and howitzers. The guns were often somewhat concealed, but the prime movers were not and co-located right next to the mortar/cannon. Additionally, just because you throw a camo net over something does not mean that it becomes concealed. Operators

Figure 1 — Example of Not Tying Camouflage into Environment
(Had the cannons tucked into the wood line, they would have been much more difficult to locate. Additionally, this photo was taken from a drone after we received multiple counter-battery hits to this location. Had these guns fired and then relocated, they would have been much more difficult to locate. Both of these howitzers were destroyed after this photo was taken.)

Figure 2 — Example of Large Amount of Vehicles Grouped Together

(Map reconnaissance and a knowledge of the limitations of logistics vehicles led us to investigate the series of concrete pads in the brigade rear area. In the photo, you can see that the vehicles are located in the open and tightly packed, which makes them an optimal target.)

must tie camouflage into the surrounding natural terrain. This was especially true when it came to locating howitzers (which often appeared as a large camo net in the middle of a field) or TOCs (where tents were located next to buildings instead of utilizing the buildings or overhead structure for concealment). Had these guns tied into a wood line or natural surrounding terrain, it would have been much more difficult to locate with sUAS.

2) Survivability Moves. The more often an asset can jump, the greater its survivability becomes. Small UAS are cheap and readily available, and our near peers now have nearly, if not the same, collection capabilities that we do. We often give off easily targetable large physical and electromagnetic signatures. Jumping locations every 24 hours decreases the risk of detection and thus increases survivability. With this it is important to consider how your TOC is built; if it takes six hours to break down a tent and three to set up, then it is not feasible to jump every 24 hours and units must adapt.

3) Operate in a decentralized manner/spacing. One Joint Light Tactical Vehicle may not be worth targeting, but five or six right next to each other present the opportunity for a mass casualty event. We routinely located large groups of both vehicles and Soldiers. This is especially true when it came to the BSA. During JPMRC 24-02, we were able to immediately locate the RTU's BSA based on a map reconnaissance, which we then confirmed with sUAS. Instead of seeking overhead cover or dispersing their vehicles, the BSA staff had a tendency to park everything right next to each other and squeeze as many vehicles and tents as possible onto concrete pads. This allowed for mass destruction with one or two fire missions. Had these vehicles sought overhead cover and dispersed, it would have been much more difficult to target them. For example, the Role 2 and fuel depot do not need to be in the same area. If these assets can seek overhead cover and spread out, then it becomes much more difficult to find them. In addition, rear echelon units are especially vulnerable targets, and our adversaries do not have the same moral compass that we do. Logistics units are easy to locate, easy to hit, and often lack security. In the future, it is imperative that rear echelon units consider that their assets are almost always HPTs and adjust training accordingly.

4) Incorporate sUAS into situational training or field training exercises. U.S. forces are often not accustomed to sUAS threats because we rarely incorporate them into our training exercises. Until we begin to integrate these assets into situational training exercises and continue to use them during CTC rotations, we will not become accustomed to this threat. During the first 96 hours of JPMRC 24-02, we very rarely saw the destruction of sUAS because the RTU was not accustomed to this threat. It wasn't until the RTU realized that sUAS were often followed by the arrival of indirect fires that it began to react.

5) Each squad needs anti-drone capabilities. Once units become accustomed to the threat of sUAS on the

battlefield, they must be outfitted with the ability to destroy them. We saw this during JPMRC 24-02. After a few days of being harassed by drone swarms/drop munitions and receiving indirect fire after seeing sUAS overhead, the RTU started to space its vehicles, seek better overhead cover, and employ Drone Busters or other kinetic means across the battlefield. Units should be outfitted with man-packable detection devices such as a Bal Chatri 2 as well as kinetic devices such as Drone Busters or Smart Shooter SMASH 2000Ls. Without the ability to take down drones or eliminate drone operators, there is little units can do to react. To protect our force, it is imperative that they are equipped with the proper equipment.

Figure 3 — Tactical Operations Center Camouflage
(The TOC tent was well camouflaged and not located on the first flyover, but the vehicles and satellite in the open suggested it was there. We flew from a different angle and were able to locate the TOC tent and call for fire.)

JPMRC-AK 24-02 showed the value of sUAS in modern warfare. With the sunset of both the RQ-7 Shadow and RQ-11 Raven systems on the horizon, there will be a capabilities gap within a brigade combat team. A proposed short-term solution is to purchase Department of Defense-approved COTS drone systems from the Blue List and field them to maneuver companies and battalion scout platoons. These systems are easy to operate and give companies the ability to conduct reconnaissance as well as achieve effects through drop munitions. These commercially available drones may even have better wind, ice, and precipitation tolerance than Army programs of records and can be repaired or replaced much faster. COTS sUAS are a viable short-term solution to bridge the capability gap, but they are not a permanent one. The Army should consider creating a sUAS section or platoon within the headquarters company at each maneuver battalion and outfit them with both reconnaissance and kinetic sUAS. These sections/platoon would increase both the reconnaissance capabilities of a battalion/squadron as well as increase their ability to conduct limited targeting against adversaries.

Notes

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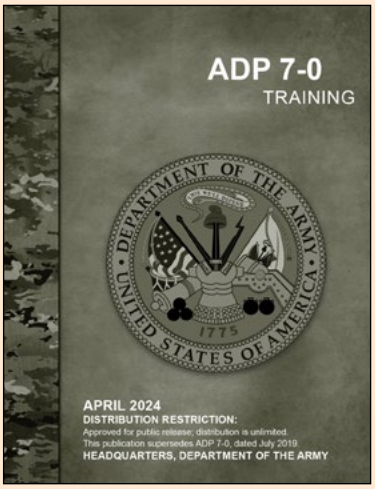
Updated ADP 7-0 Now Online

The updated Army Doctrine Publication (ADP) 7-0, *Training*, was released on 29 April. This manual describes how the Army's principles of training provide leaders a foundational understanding to training Soldiers and units. It also describes how the training management cycle, based on these principles, gives leaders a logical and chronological framework for accomplishing effective training.

ADP 7-0 establishes the concepts and principles of training and introduces training processes that are further expanded on in FM 7-0 — this gives Army leaders a common framework to train Soldiers and units effectively for operational employment. The primary audience is commanders, officers, NCOs, and all members of the profession of arms.

https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN40738-ADP_7-0-000-WEB-2.pdf



The Army Needs to Quickly Adapt to Tactical Drone Warfare

MAJ ANTHONY R. PADALINO

In the contemporary operating environment, small unmanned aerial systems (sUAS) have emerged as transformative battlefield assets, providing militaries an unprecedented blend of low-cost intelligence, surveillance, target acquisition, reconnaissance, and precision strike capabilities. These sUAS have proven their potential to disrupt mechanized formations' advances, neutralize fire support systems, and eliminate strategic assets with minimal expense.[1-2] To take advantage of this transformative, low-cost capability, U.S. Army brigade combat teams (BCTs) need to be quickly modernized to conduct tactical drone warfare.

For the purposes of this article, I define "tactical drone warfare" as the employment of Department of Defense group 1-3 sUAS endowed with kinetic capabilities.[3] These systems fall into three distinct categories: modified commercial off-the-shelf (COTS) drones, first person view (FPV) drones, and loitering munitions (LMs). Additionally, I characterize "tactical formations" as brigade/regiment-size organizations and below that are specifically task-organized for offensive and defensive large-scale combat operations. Tactical formations in the Russo-Ukraine and Second Nagorno-Karabakh wars have proven the effectiveness of sUAS in attriting mechanized and motorized formations, destroying command posts, and neutralizing fire support systems.[4] The use of lethal sUAS in combat operations at the tactical level has significantly impacted tactics, techniques, and procedures for mechanized and motorized formations and is changing the way militaries fight.[5] Militaries worldwide are adapting and reorganizing to seamlessly incorporate sUAS into their tactical formations.[6-7]

One of the most striking examples of sUAS impacts on the battlefield is the use of FPV attack drones, which, for an investment of less than $400, have demonstrated destructive capabilities against armored assets that can cost in the millions to produce a single unit.[8] These instances are becoming a daily occurrence on today's battlefields and are changing the economic and technological advantages large militaries have enjoyed. Furthermore, militaries operating on budgets of less than $6 billion (less than 0.008 percent of the U.S. defense annual budget) are now equipping their tactical formations with aerial intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) capabilities, underscoring the cost-effectiveness and force multiplication effect of these technologies.[9]

LMs and FPVs have become essential tools for tactical commanders, enabling them to target and eliminate high-value assets with speed and precision never seen at the tactical level and thereby shifting the momentum of a combat operation within minutes by controlling its tempo. During the Second Nagorno-Karabakh War, Azerbaijan used LMs to rapidly disintegrate the Armenian air defense network, establishing air supremacy within the first few days of war, and then began to use tactical drones to systematically destroy artillery, electronic warfare assets, and armor.[10] Azerbaijan's ability to employ LMs to autonomously engage high-value targets has showcased the value of tactical drone warfare to military leaders around the world.

Tactical Drone Warfare

"If you don't like change, you'll like irrelevance even less."
— GEN (Retired) Eric Shinseki
34th Army Chief of Staff

Drone warfare is not new to the battlefield; UAS equipped with full motion video sensors, flown by operators at ground control stations, first saw action in the 1970s with the U.S.

A destroyed Russian tank is photographed in Mariupol, Ukraine, on 7 March 2022. (Photo courtesy of the Ministry of Internal Affairs of Ukraine via Wikimedia Commons)

"Firebees" and the Israeli "Scouts" flying combat missions in the Yom Kippur War.[11] Today, drone warfare conducted with precision strikes is an occurrence found on nearly every battlefield. The United States operates the most advanced UAS platforms in the world, such as the MQ-9 Reaper, RQ-4 Global Hawk, and the future MQ-20 Avenger, costing on average of more than $30-plus million per unit.[12] However, the systems described above are expensive, targeted by adversary air defenses, and exclusively used at the division level or above. The emergence of drone warfare at the brigade level and below has changed today's battlefields by shortening kill chains with devastating effects.

Ukrainian soldiers from the 17th Separate Kryvyi Rih Tank Brigade train on the use of modified quadcopters to drop munitions onto targets in July 2022. (Photo courtesy of the Ministry of Defence of Ukraine via Wikimedia Commons)

A revolution in military affairs is described as a period in time where there are profound changes in military doctrine, strategies, tactics, and technologies, leading to an irreversible transformation in the conduct of warfare.[13] The year is 2024, and the proliferation of sUAS at the tactical unit level has transformed the conduct of warfare in Europe, Africa, and the Middle East. Modified COTS drones are devastating infantry in open and urban terrain, and FPV drones enable a light infantry squad to halt an armored company literally dead in its tracks. One-way attack unmanned aerial vehicles (UAVs) developed and produced by Iran have attacked bases housing American troops, while LMs are destroying high-value targets autonomously in the Middle East and Europe.

Tactical drone warfare is no longer a conceptual image of the future — it has already been written in the history of recent conflicts and is being executed in wars fought today. The adaptation to tactical drone warfare has already occurred within our adversaries and allies' military formations. The U.S. Army needs to break the bureaucratic acquisition process that merely upgrades 1980s-era platforms to deliver relevant, innovative equipment to the warfighter when it is needed most — during combat operations.

Before offering a few realistic solutions that could rapidly innovate U.S. Army BCTs, I will first provide more detailed descriptions of the three categories of kinetic-capable drones in group 1-3 sUAS, which can be employed at the brigade level and below:

1. Modified COTS Drones: Group 1-2 sUAS are commercial drones that have been modified to drop ordnance such as fragmentary grenades, mines, or mortars. Ukrainian and Russian forces have repurposed COTS quadcopters, such as the DJI Mavic series, to carry out attacks by dropping munitions on ground targets. These modified drones have reshaped the battlefield, providing tactical units with precision-strike and ISTAR capabilities.[14]

2. FPV Drones: Group 1-2 sUAS drones are characterized by their low cost, simple employment and demonstrated lethality when paired with military munitions. FPVs have proven to be a cost-efficient strategy when compared to traditional warfare tools (e.g., FGM-148 Javelin), allowing small

A Ukrainian soldier displays a modified quadcopter with attached payload in February 2023. (Photo courtesy of the Ministry of Defence of Ukraine via Wikimedia Commons)

units to target and incapacitate expensive military hardware with precision and efficiency. FPV drones are COTS drones that have a payload capacity of 1.2 kilograms or higher and are launched with the intension of expending the munition on a target. Formations with COTS sUAS paired with anti-tank munitions provide a paramount low-cost expendable option to military forces. The human controller of FPV drones delivers a precision capability that has devastated armored vehicles on today's battlefields. Examples of FPVs include the Pegasus, Bucephalus, or Russian-made Lancet drones. However, it should be noted that any COTS FPV sUAS with a 1.2 kilogram capacity or higher can fit this category.

3. Loitering Munitions: The LM concept is not new; however, its pairing with advanced sensors, autonomous capability, artificial intelligence (AI) integration, and relatively affordable production price provides militaries with a decisive capability at the tactical level.[15] For the purposes of this article, LMs are divided into three different categories based on their size and preferred targets. *Mini-LMs* are man

portable, launched and recovered by individual Soldiers, and primarily used to target light armored vehicles or personnel. Examples of these are the Switchblade 300, Rotem, Hero-90, STR-35 Silent Thunder, or WARMATE. *Tactical LMs* require vehicular movement (tubed or rail launched), have extended endurance (in comparison to mini), and can perform ISTAR in addition to offering a precision-strike capability. Examples include Mini-Harpy, Hero-120, Skystriker, and the Orbiter 1K. *Long-range LMs* are launched from land, air, or sea-based platforms and used to attack strategic-level targets. Examples are the Hero-1250, Harpy, and Harop. Not all loitering munitions have recoverable options, can perform ISTAR functions, or have endurance times enjoyed by legacy UAS platforms.

Advancing the BCT: A Proposal for Tactical Drone Warfare Modernization

"Change before you have to."

— Jack Welch
Former CEO of General Electric

The U.S. Army is composed of 32 active-duty BCTs and 27 Army National Guard BCTs, a total force of 59 BCTs.[16] The following proposed modernization plan will highlight the organization of an active-duty infantry brigade combat team (IBCT). However, the equipment and organization plan can and should be applied to Stryker and armored brigade combat teams (SBCT/ABCTs) with minor adjustments.

A Naval Special Warfare Operator fires a Switchblade 300 during ground mobility training exercises in Nevada on 15 July 2023. (Photo by PO1 Chelsea D. Meiller)

The IBCT organically contains seven subordinate battalions that provide the brigade its ability to perform close combat operations with all warfighting functions internal to the organization. IBCTs should immediately undergo doctrine, organization, training, and materiel modernization within these areas:

1) The tactical UAS (TUAS) platoon,
2) The field artillery battalion, and
3) Battalion mortar platoons.

At echelon, each of the areas described above could provide tactical drone warfare capabilities to the brigade in areas that best fit its employment. The TUAS platoon that currently operates the RQ-7 Shadow could divest of this equipment and employ tactical or long-range LMs in its place. The employment of tactical or long-range LMs by the TUAS platoon easily transfers training for UAS operators (Military Occupational Specialty [MOS] 15W) and requires little organizational and doctrine changes, with the only fiscal cost being materiel solutions that cost significantly less per unit then the RQ-7 Shadow. The field artillery battalion could equip its company fire support teams (FISTs) with modified COTS and FPV drones to enhance the lethality of maneuver company-size elements on the battlefield while also employing the fires network to quickly prosecute targets trapped in the kill-web. Infantry battalions could also equip their formations with mini-loitering munitions, providing maneuver battalions with organic ISTAR and precision-strike capabilities to complement their organic mortar systems. A more in-depth overview of this proposed modernization is provided in the following paragraphs.

The TUAS Gets Teeth

The TUAS platoon resides in the military intelligence (MI) company that is assigned to the IBCT's supporting engineer battalion. The platoon contains 22 Soldiers with UAS operators (15W) and Unmanned Aircraft Systems Operations Technicians (warrant officer - 150U). The platoon is organized with a headquarters element, a mission-planning and control station element, and a launch and recovery element. The platoon's current organization and mission — to provide intelligence, surveillance, and reconnaissance (ISR) by launching, operating, and recovering UAS — make it the ideal element to modernize with tactical or long-range LMs; weapon employment would depend on the BCT's role to support the division function (reinforced, armor, airborne, air assault, light, or motorized). For the IBCT, tactical LMs are the weapons of choice for the TUAS platoon. Tactical commanders should note that a change from the legacy UAS RQ-7 Shadow to LMs would be a change in functional mission for the TUAS platoon. The TUAS would no longer overlook named areas of interest for nine-plus hours in periods with the benefit of near-perfect weather conditions. In today's operational environment, I believe RQ-7 Shadows would likely be shot down within their first 24 hours of employment as part of LSCO and provide little or no answers to a commander's priority intelligence requirements. The IBCT TUAS, changed into an LM mission function, would enable a precision top-attack capability at the BCT level by employing low-cost tactical LMs to destroy high-payoff targets on the battlefield.

I recommend replacing the RQ-7 Shadow with an LM that can perform limited ISTAR functions for the IBCT while it primarily serves as an option for kinetic low-cost precision strikes. The SkyStriker, for example, is a catapult-launched tactical LM that can carry a 5 or 10-kilogram warhead, has a two-hour loiter time to perform limited surveillance, and is parachute recoverable.[17] The TUAS platoon should be modernized with 20 LMs, along with two catapult launch trailers.

Aerial Advantage: Elevating Fire Support

The field artillery battalion provides the IBCT with an organic fires kill chain that expands across the entire BCT, serving as the backbone of the BCT's "kill web." The battalion's mission of delivering fire support — which includes cannon or rocket artillery, Army attack aviation, and joint fires to suppress, neutralize, or destroy enemy forces — makes it an ideal choice for employment of tactical drones. Fire supporters assigned to the fires battalion are integrated into every maneuver formation from the platoon to brigade headquarters, totaling more than 160 MTOE-authorized fire support professionals in maneuver formations across the IBCT. Each of the IBCT's 15 frontline maneuver companies have FISTs composed of six Soldiers — a fire support officer (13A) and fire support sergeant (13F) at the company headquarters level, and forward observers (13F) at the platoon level.

Equipping each of the 15 IBCT company FISTs with modified COTS and FPV drones that are backpackable and have kinetic capabilities enable precision-strike capabilities at the platoon level — and provide real-time ISTAR to the company headquarters.

Equipping each of the 15 IBCT company FISTs with modified COTS and FPV drones that are backpackable and have kinetic capabilities enable precision-strike capabilities at the platoon level — and provide real-time ISTAR to the company headquarters. The "hip-pocket" relationship of U.S. Army's fire supporters and their maneuver leaders at echelon enables rapid employment of munitions against high-payoff targets. The recommended "kit" per company FIST is six FPVs and two mini-LMs per company, allowing the company commander to task-organize assets as required on the battlefield.

Training for tactical drone employment could occur at the MOS 13F-specific Advanced Individual Training (AIT) and Advanced Leader Course (ALC) at Fort Sill, OK. Instruction would provide the force with Soldiers who have the skills to operate sUAS to be integrated into training with maneuver formations from platoon live-fire exercises through Combat Training Center (CTC) rotations. Fires battalions should evolve fire support coordination exercises (FSCXs) to integrate the use of tactical drone warfare to validate their ability to support maneuver operations on today's battlefields. Furthermore, Fort Sill is also the home of the Joint Counter-sUAS University, which provides the installation with the resident experts to implement a change to the 13F program of instruction for integrating tactical drone warfare.

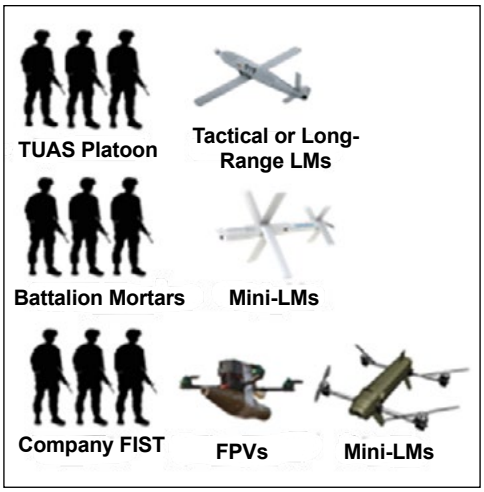
Mortar Revolution (Infantry Battalion Mortars)

Maneuver battalions and cavalry troops employ 120mm and below mortar systems that enable maneuver companies to accomplish their tactical mission tasks. The mortar platoon is doctrinally controlled by the maneuver battalion headquarters through the battalion's fire support element. Equipping maneuver battalion mortars with an LM would provide organic ISTAR and precision-strike capabilities while also enabling a mortar section to observe targets organically for prosecution with organic mortar systems.

The Hero-90, for example, is a backpackable mini-loitering munition with a 40-kilometer range and 45-minute endurance; it operates between 1,200-3,000-feet — below the current max ordinate of 120mm mortars. It also uses the same common launch tube as tube-launched, optically tracked, wire-guided (TOW) missiles. The 1.5-kilogram warhead can be used against light and armored vehicles, command posts, and personnel. An advantage of an LM such as this is its anti-tank capability, which would enable

light battalions to shape the battlefield for their maneuver companies.

Infantry battalions can cross-cue sensors such as ground motion indicators, acoustic sensors, or echelon above brigade assets to rapidly employ LMs against high-value targets in the offense or in the defense. Mortar Soldiers (11C) could be trained on this system during One Station Unit Training and ALC, ensuring the institution provides baseline training for Soldiers to implement this capability into any organization's training progression.



Proposed Tactical Drone Modernization for Infantry Brigade Combat Teams

IBCT Modernization Summary

The necessary tools to initiate the modernization of the IBCT exist today. The proposed modernization of the TUAS platoon, battalion mortars, and company FISTs within the fires battalion offers the most efficient transfer of training from a Soldier skillset perspective and tactical employment from an existing kill-web architecture. Materiel solutions provided by industry are being fulfilled by the U.S. Marine Corps, as well as other NATO and non-NATO members. Fort Moore, GA, and Fort Sill are already equipped with the leadership and expertise to pivot to such an innovative change within the IBCT organizational, materiel, and training advancement. Doctrine will undergo updates following materiel and organizational solutions, leveraging iterative learning processes from our Army's operations, training, and insights from current and past conflicts. Internal IBCT training will evolve at home stations, integrating tactical drone warfare into offensive and defensive operations at the platoon level and higher.

Conclusion

The U.S. Army's BCTs need to be modernized to conduct tactical drone warfare. Wars of the past and those ongoing today have proven the revolution in military affairs that tactical drone warfare has brought to the modern battlefield. Our adversaries and allies alike have already implemented tactical drones into their orders of battles, instituted training academies, and begun production at mass domestically. Materiel solutions already developed and tested in combat are being produced by our allies and can solve our current capability gap on the battlefield. Reorganizing and equipping the IBCT's TUAS platoon, company FISTs, and battalion mortar platoons to conduct tactical drone warfare will enable them to fight and win in the close fight.

The U.S. Army must modernize its warfighting formations to prevent BCTs from facing an asymmetric disadvantage on the battlefield. Leaders must acknowledge that winning the "deep fight" is unattainable without the capability to win the "close fight" at the BCT level. With global tensions on the rise, and our adversaries already implementing this capability, the U.S. Army must adapt to tactical drone warfare now before it is forced into change on the future battlefield.

Editor's Note: *As with all* Infantry *articles, the views expressed in this article are those of the author and do not reflect the official policy or position of the U.S. government or any element of it. Any mention of items does not constitute an official endorsement by the U.S. government or any of its subordinate departments or agencies.*

Notes

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Building a Foundation of Training Management and Discipline

CSM NEMA MOBARAKZADEH

Leaders throughout the Army have recognized that some junior and mid-grade NCOs are not enforcing basic standards and discipline. This is because senior NCOs have failed to train and hold junior NCOs accountable. As senior NCOs, training junior NCOs and maintaining good order and discipline are our responsibility. We would not tolerate our unit having substandard marksmanship; we would schedule more ranges and time for marksmanship instruction. Therefore, we should dedicate time to train NCOs to make on-the-spot corrections.

George Washington said, "Discipline is the soul of an Army. It makes small numbers formidable; procures success to the weak, and esteem to all."[1] Discipline must be trained, and NCOs must be taught to enforce standards. Morning parade, an event where NCOs inspect Soldiers (and their equipment) and lead physical training (PT), is the premier training ground for teaching NCOs to inspect and correct their Soldiers. In this regard, we can take a page from Gunnery Sergeant Tom Highway in the classic film *Heartbreak Ridge*. After taking over a ragtag crew of Marines, "Gunny" Highway quickly molded them into a cohesive fighting team. Every morning, he took accountability of his Marines. When not present, Highway uncovered personal issues that he was able to help rectify, thus building trust. He inspected each Marine, diligently ensuring all were within Marine Corps' standards, and said, "If you look like Marines, you'll start acting like Marines."[2]

Leaders must create a culture that normalizes inspections and correction. Morning parade is a terrific opportunity to showcase our profession and teach NCOs to instill discipline, make on the spot corrections, and administer remedial training. We must train our NCOs in the art of the professional confrontation and the importance of regular inspections to achieve discipline within our units. Empowering NCOs to lead during PT builds confidence to lead in other areas, including combat. PT provides a routine and low-threat opportunity to teach training management and risk management, and to encourage NCOs to read doctrine. Finally, morning parade and PT are foundational for building cohesive teams through empathetic leadership, competition, and shared hardship. They instill discipline, teach training management, and build cohesive teams while reinforcing that the NCO Corps is the backbone of the Army.

Training Standards and Discipline

Baron Von Steuben said, "The oftener the Soldiers are under the inspection of their officers the better; for which reason every morning at troop meeting they must inspect into the dress of their men; see that their clothes are whole and put on properly; their hands and faces washed clean; their hair combed; their accoutrements properly fixed, and every article about them in the greatest of order."[3] Since the founding of our Army, we have recognized the connection between looking and acting like a Soldier, and that following basic rules would collectively build a disciplined unit capable of more than the sum of its parts. Von Steuben established that morning parade is an important way to create a foundation of discipline. That commitment starts with simple compliance and military bearing.

A leader in Company E, 9th Infantry Regiment inspects his troops at a camp in Tampa, FL, circa 1898-1900. (National Archives photo)

Leaders want a formation that is committed to the Army's values and our mission. Commitment takes time in a healthy culture with leaders consistently modeling professional behavior and enforcing standards. As leaders, we often overlook the value of simple compliance; some

even write it off as an act of coercion. Few people are fully committed to the organization when they join the Army. Meanwhile, the Army regularly presents new ideas or tasks that test the wills of even the most committed Soldiers. These new ideas often take time to take root in our formations as we may only comply with them as we warm to change, usually after debating and improving the concept. After all, we do not want lemmings; we want Soldiers to think through problems, generate new ideas, and refine our techniques. But to get to commitment, you need consistent compliance, and to get consistent compliance, you must train leaders to enforce standards.

We cannot expect Soldiers or leaders to perform tasks we have not trained them to conduct, and this is true of enforcing standards. Army doctrine establishes the science of control and the art of command.[4] While regulations, policy, and general military authority clearly produce control, the difficult portion is mastering the art of professional confrontation. Learning to correct others is challenging. Doing so professionally, while the other person is defiant or dismissive, is even more difficult. It is important that NCOs sternly but politely explain the infraction and supervise the correction. If handled incorrectly, leaders worry they open themselves to an inspector general (IG) complaint, investigation, or at the very least, embarrassment. Through proper training, understanding of general military authority, and adoption of a specific methodology for making corrections, leaders can keep the emotions and friction between the corrected Soldier and the standard rather than themselves. Mastering the art of the professional confrontation takes practice. Morning parade provides a consistent training event where leaders can train the art of the professional confrontation.

Many leaders and Soldiers dislike formations, viewing them as a waste of time, but morning parade is the optimal event for training leaders to enforce standards. Author Simon Sinek would urge us to start with why.[5] To gain commitment, we must first explain the reasons and benefits for conducting morning parade. Leaders can hold morning parade immediately before PT starts or after Soldiers have returned to start the day's work. It should always start with the accountability of each Soldier. If an NCO cannot account for a Soldier, then finding him or her becomes the priority. While often a formal inspection performed from open ranks, morning parade can be as simple as junior leaders walking down the line looking over each of their Soldiers and correcting deficiencies. Confrontation is uncomfortable, but if young sergeants cannot tell their Soldiers that it is unacceptable to be unshaven, have an improper haircut, or be in the wrong uniform, they will not be able to enforce other standards. Morning formation is a low-threat environment that allows young leaders to inspect their Soldiers under the watchful eye of seasoned NCOs. This must be normalized and understood as an organizational expectation.

To inspect, you must know the standard, which forces NCOs to read regulations, local standard operating procedures (SOPs), and policies. Additionally, when NCOs find deficiencies, they learn to appropriately assign and supervise remedial training. When NCOs fall short of what is expected during morning parade, or they are overzealous in the application of remedial training, senior NCOs are there to guide them. As the NCOs are trained, so are the Soldiers. After consistent inspections and remedial training, junior Soldiers will start to police themselves. Not only do Soldiers learn the standard of professional conduct, but they also learn how to be corrected. We have all made a simple on-the-spot correction that needlessly escalated to an unprofessional or emotional outburst. This is because the Soldier is not accustomed to being corrected. Soldiers must be conditioned to meet the standard and take professional criticism. This conduct, forged during morning parade, has tactical and ethical implications as well.

Conducting routine inspections, following SOPs, and enforcing standards have direct tactical and ethical implications that impact combat readiness. Units that do not inspect and enforce standards in garrison will not conduct pre-combat checks and inspections in training or combat.

Conducting routine inspections, following SOPs, and enforcing standards have direct tactical and ethical implications that impact combat readiness. Units that do not inspect and enforce standards in garrison will not conduct pre-combat checks and inspections in training or combat. Senior NCOs who do not supervise the application of corrective training risk having counterproductive leaders who are not empowered to lead within the principles of mission command. NCOs who cannot correct their own Soldiers in the unit area will not intervene when they see other more serious offenses like sexual harassment or racially charged behavior. NCOs who cut their teeth during morning parade gain confidence in themselves and their understanding of the standard. This gives them the moral courage to use general military authority to correct Soldiers from other formations.

Training Management

PT is a regularly occurring training event that maximizes opportunities for young leaders to learn the tenets of training management. Training management is essential for readying combat forces. Empowering young NCOs to plan and lead PT will help them understand training management, gain confidence in giving orders, and embolden them to lead in other areas. Furthermore, the better they understand the training management process, the better they can assist or lead more complex training. Central to the training management process is the eight-step training model.

The eight-step training model is the foundation of all training in the Army. It takes numerous training events for NCOs to understand the nuances of each step. PT allows NCOs to do this in a way that will not waste resources or distract from training objectives. Worst case, PT goes a little long or a senior NCO must add some distance or repetitions to make up for a lackluster session. The more repetitions that NCOs get at planning PT, the better prepared they are to run other training events. Leading PT and using the eight-step training model will force NCOs to research and read doctrine. Whether it is how the Army Publishing Directorate is organized, the differences in field manuals and training circulars, or simply how to search or use the index to find needed information, referencing PT materials becomes a formative experience. Holistic health and fitness (H2F) teams are a great resource for assisting NCOs with leader certification and planning. While H2F can assist, NCOs cannot abdicate their responsibility to lead PT nor outsource planning. Scheduling time to adequately assess risk and conduct the eight steps necessary for successful training is important for teaching NCOs vital lessons.

Time management and risk assessment provide organizational calm, combat effectiveness, and are critical to unit success. Forcing NCOs to think through risk during PT in a relatively controlled environment will teach them to do it during more complex scenarios in training and combat. Properly conducting all eight steps of the training model and completing a proper risk assessment require time. Time management is best done on a schedule. Schedules completed on time, vetted by senior NCOs, and posted in unit areas provide predictability. Organizational calm gained through proper training management and predictability directly impacts Soldiers' morale and welfare. Proper execution of morning parade, along with well-prepared and challenging PT, lays a foundation for cohesive teams.

Cohesion

There are many factors that intersect to form cohesive teams. Morning parade offers an opportunity for leaders to observe and hear from their formation. Savvy NCOs understand that while Soldiers are waiting, they are talking about what is going on in their lives. Soldiers speak about the issues they are facing at home, proud parent moments, financial struggles, and other pertinent information. Non-verbal cues are equally important. NCOs should pick up on someone who smells of alcohol, looks excessively tired, or is abnormally quiet. These are opportunities for NCOs to provide "under the oak tree counseling" and, when necessary, leverage resources such as a financial counselor, an appointment with the unit chaplain, or lifestyle classes through Army Community Service. When it's positive, they can share in the Soldier's joy and reenforce their connection. Morning formation provides a regular opportunity to connect with the entire team.

PT is instrumental to building cohesive teams. Well-designed and prepared PT sessions, planned by NCOs who used the eight-step training model, create fertile ground for bringing people together. No one wants to come in early in the morning to waste time participating in a poorly conceived and executed PT session. Subpar training erodes trust in leaders. Working out regularly with your unit builds connection. It makes everyone vulnerable, as you see each other's strengths and weaknesses. This provides opportunities to encourage each other and, through discussion and counseling, work together to improve. Being together is essential

Soldiers assigned to 2nd Battalion, 503rd Parachute Infantry Regiment carry equipment across a football field during a physical training event in Vicenza, Italy, on 6 June 2023. (Photo by PFC Samantha Powers)

to the team-building process. Solders often complain that they want to work out alone. You cannot build a team if you are not together, and you forfeit the numerous benefits of morning parade, training management, and cohesion. If there was any lesson to be learned from COVID, for most units, individual PT undermines unit readiness. There are always exceptions while traveling or during special assignments, but largely, working out together is a must. Leaders should balance their PT schedules between fitness and toughness.

Soldiers attending the Basic Leader Course at the NCO Academy in Hawaii team up to flip a tire during a PT competition on 25 February 2022 at Schofield Barracks, HI. (Photo by SGT Christopher Thompson)

This balance will promote team building, combat readiness, and cohesion. Fitness directly ties to performance on the battlefield. Leaders must arrive to the objective with enough stamina to clearly think through problems and calmly deliver orders. Soldiers can be technically and tactically competent, but if they cannot move their brain around the battlefield, think critically, and execute tasks to standard, the mission will fail. Regular exercise and healthy bodies are key components to mental health. Units composed of Soldiers with strong mental health will come together faster and deal with adversity better. PT should regularly include competitions. Competition builds strong bonds and esprit de corps by pushing and toughening Soldiers, and toughness matters in combat. Shared hardship builds teams. Some PT sessions must be a gut check to build toughness and resiliency. Soldiers must occasionally endure poor weather conditions and not hide in the gym. They should participate in combatives, conduct battle-focused PT in kit, and foot march even if they're not a combat arms Soldier. Sometimes, this may come at the detriment of an Army Combat Fitness Test (ACFT) score, but it will provide intangible benefits greater than a few points lost on the exam. Fit, tough, and cohesive teams win on the battlefield and in life.

Conclusion

In summary, standards and discipline are essential for cohesive and ready combat forces. NCOs must be trained in the art of the professional confrontation. Morning parade provides opportunities for young NCOs to learn to inspect, apply remedial training, and coach their Soldiers to improve. Consistent enforcement of standards trains Soldiers to professionally accept correction and coaching. Morning parade allows senior NCOs the routine opportunity to tutor junior NCOs about regulatory standards and corrective training techniques. Morning formation is the first chance for leaders to assess the welfare of their formation and build bonds with their Soldiers through conversation. Furthermore, physical training allows formations to bond through shared hardship. Physical training sessions are opportunities for young leaders to exercise the eight-step training model, understand the risk mitigation process, and study doctrine. Well-planned and executed PT sessions contribute to healthy bodies and minds, which aides in building cohesive teams. Morning parade and PT instill discipline, teach training management, and build cohesive teams while reinforcing that the NCO Corps is the backbone of the Army.

Notes

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LNO Lessons Learned:

Tactical Liaising with One of NATO's Newest Members

1LT CHRISTIAN ARNETT

When Russia re-invaded Ukraine in 2022, it sent shock waves through Europe. Russian aggression motivated Finland to seek NATO membership after 29 years as a NATO partner, and after an 11 months-long ratification, the country became the 31st member state.[1] Two weeks following Finland's NATO accession, Task Force (TF) Mustang deployed to Niinisalo, Finland, from Camp Herkus, Lithuania, to participate in Operations Arrow 2023 and Lock 2023 during its Operation European Assure, Deter, and Reinforce rotation.

The author discusses mission details with the Blue Battle Group's deputy commander prior to the start of Operation Arrow's force-on-force exercise. (Photos courtesy of 1LT Christian Arnett)

TF Mustang, a combined arms battalion, included elements from the 1st Battalion, 8th Cavalry Regiment and A Company, 8th Brigade Engineer Battalion (BEB) from the 2nd Armored Brigade Combat Team (ABCT), 1st Cavalry Division at Fort Cavazos, TX. Operations Arrow and Lock, large battle group (BTG)-sized exercises, took place in Niinisalo and Vekaranjärvi, Finland, respectively, to test collective combined arms maneuver in a multinational setting. During Operation Arrow, two opposing Finnish BTGs commanded subordinate American companies. Our two line companies, Assault and Combat Companies, were under the tactical control (TACON) of two different battle groups commanded by senior Finnish officers. In Operation Lock, TF Mustang fought as our own entity with subordinate Finnish units — to include a recce (reconnaissance) platoon, tank platoon, mortar company, engineer company, and mechanized infantry company — serving alongside our organic line companies.[2] During both exercises, we sent liaison officer (LNO) teams to create shared understanding with our Finnish partners.

According to Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, LNOs enhance the working relationship between coalition and host-nation units through coordination, synchronization, and cooperation.[3] In his article "Enhancing Interoperability: The Foundation for Effective NATO Operations," Dr. James Derleth, a senior training advisor at the Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany, discusses the three components of interoperability: technical, procedural, and human. Technical interoperability refers to finding ways for allies to work together technologically. Procedural interoperability involves changes to doctrine and organization to create shared understanding between two nations. The last tenet, human interoperability, builds trust and operational readiness through face-to-face interaction and joint training.[4] LNOs are extremely important to multinational operations, as they create a shared understanding between the U.S. Army and its allies across all three forms of interoperability. This is especially vital when it pertains to allies like Finland, who is now able to train with other NATO nations as a fellow member. Interoperability is defined by NATO as "the ability for Allies to act together coherently, effectively and efficiently to achieve tactical, operational and strategic objectives."[5] NATO interoperability, therefore, is extremely important to the defense of its allies and partners.

Recent articles on tactical liaising discuss the importance of the LNO team to mission command through creating cohesive teams, promoting shared understanding, and providing our allies the ability to accept risk and use disciplined initiative. In 2015, CPT Kenneth O'Reilly and CPT James Devlin, observer-coach/trainers (OC/Ts) at JMRC, wrote about the importance of battalion commanders selecting and implementing LNOs as they will be tasked to articulate the commander's intent to our allied commanders and ensure they are tied into the mission-planning process.[6] The authors' observed experiences draw very close parallels to mine as an LNO to our Finnish allies.

Operation Arrow — Early LNO Challenges

TF Mustang began its experience in Finland with Operation Arrow. This exercise was strategically significant,

featuring the first U.S. battalion to train in Finland following that state's NATO accension. It consisted of force-on-force training between two BTGs, both composed of elements from different NATO allies under the command of two Finnish headquarters. TF Mustang assigned its infantry company team (Combat Company) to the Blue BTG and its tank company team (Assault Company) to the Yellow BTG. Both BTGs started on opposite ends of a long, narrow, north-south range and attacked each other for five days, switching sides halfway through the exercise.

During Operation Arrow, an NCO from TF Mustang's fire support element and I served as LNOs to the Blue BTG. We followed behind the Blue BTG's tactical command post (TCP) in a Joint Light Tactical Vehicle (JLTV). Essentially a tactical operations center (TOC) on wheels, the TCP was led by the BTG's deputy commander/operations officer. He and his team had all the elements necessary to control the battlefield from that one vehicle. Our JLTV was outfitted with two Single Channel Ground and Airborne Radio Systems (SINCGARS), but all of the battalion's tactical voice bridges (TVBs) were given to maneuver elements, preventing direct radio connection to the Finnish BTG headquarters. Therefore, one of the members of our LNO team would routinely go to the TCP vehicle to check in with the deputy commander, or he would exit his vehicle to talk to us in urgent cases. Through these face-to-face conversations, we maintained the human aspect of interoperability. Over the five days of multinational collective maneuver, we built trust.

With their battle-tracking capabilities, the Finnish TCP often had a good idea of where each subordinate unit was on the battlefield. However, they sometimes had communication issues with Combat Company due to intermittent technical challenges with the company's TVBs. The TCP quickly resolved this issue by using us, the American LNOs, as a key part of the PACE (primary, alternate, contingency, emergency) plan. We always had one radio programmed to Combat Company's frequency and the other radio switching between the company and battalion fires frequencies. Whenever one radio went down, we ensured the working radio was programmed to the company frequency. We were able to improve the technical component of the interoperability by being the Finnish command's line of communication to their U.S. subordinates.

The Finnish headquarters frequently used their American LNOs to improve communication and create shared understanding of the current operations on the battlefield. During mission planning, the Finns liked to plan quickly in order to distribute the plan in a timely manner. Due to planning that often happened on-the-go, we (LNOs) did not always get to be a part of the mission-planning process. This sometimes resulted in the utilization of U.S. infantry as a simultaneous supporting effort on the flanks instead of as a clearing effort at the front, causing Finnish armor to encounter concealed enemy anti-tank teams. When the American Infantry Soldiers were sent ahead of the tanks, they were not allotted enough time to conduct proper clearance. One of the Finnish Army's strengths is the ability to move tank formations through dense vegetation at rapid speeds. Since we were not present for the planning of those missions, we were unable to convey the time necessary for dismounted infantry to clear ground prior to the movement of Finnish tanks. Another effect of our absence from mission planning was our inability to fully understand the BTG commander's intent and assist U.S. subordinate units in its clarification. Based on these examples, procedural interoperability was not fully realized during this exercise. An important lesson learned for future LNOs attached to an allied higher headquarters: It is critical for them to be embedded in the mission-planning process to provide critical insights regarding the capabilities and limitations of supporting U.S. units.

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Operation Lock — Building on Lessons Learned

Following Operation Arrow, TF Mustang moved 200 miles east to Vekaranjärvi, Finland, for Operation Lock where it became the first U.S. unit to train east of the Kymi River in generations. For this exercise, we trained with a Finnish mechanized infantry company, scout platoon, advanced mortar system coy (company), combat support platoon, and a BTG headquarters under its TACON. For most Finnish soldiers, this was their first experience being led by Americans; they were fully integrated into a U.S. task force and operated side-by-side with American Soldiers.[7] During mission planning at the TOC, we integrated Finnish staff officers into the mission decision-making process (MDMP) and the rapid decision-making and synchronization process (RDSP). As experts in Finnish tactics, they were beneficial additions to our tactical planning. They held significant roles in battalion operations rehearsals and quickly proved that we could trust them just as they learned to trust us. During Arrow's five-day force-on-force period, the Mustangs faced a Finnish BTG-sized element with similar capabilities. I served as a battalion planner as well as LNO to the Finnish battalion headquarters, so I split my time between the tactical command post (TAC) and the TOC plans tent.

TF Mustang's TAC consisted of the task force commander (1-8 CAV's battalion commander) and S2 in one vehicle, the S3 and I in a second vehicle, the fire support officer (FSO) and his targeting NCO in a third vehicle, and the Finnish TCP as the fourth vehicle. During this operation, TF Mustang again used TVBs to communicate with our attached Finnish units, but intermittent outages forced us to at times rely on our LNO PACE plan. Therefore, I often found myself as a runner

between the S3's vehicle and the Finnish TCP, liaising with the Finnish headquarters to maintain shared understanding. I needed to communicate the TF Mustang commander's intent, collect operational updates from subordinate Finnish units, and identify and mitigate friction points with the Finnish headquarters. I focused on the human and procedural components of interoperability to assist the TF commander with his on-ground decision-making process.

While both exercises were successful in improving multinational interoperability between the two allies, Operation Lock proved to be more successful for several reasons. First, we spent more time preparing for each battle period. During Operation Arrow, both BTGs seemed to compete as to which could move onto the next objective the quickest. While speed is an important characteristic of the offense, it is still important to properly prepare for each engagement. By incorporating the Finns into our MDMP and RDSP processes, we were able to create plans that were more successful than the opposing battle group's. Even using hasty RDSP, we synchronized warfighting functions, ensured shared understanding between U.S. and Finnish forces, and "red hatted" the plan (imagining what the enemy planned to do) in preparation for the opposing force. Through the planning process, we were able to create detailed operational graphics and decision support matrices (DSMs) that could be properly distributed and studied during our rehearsals. By ensuring multinational representation at the rehearsals, we were able to practice different scenarios and apply our DSMs to build well-rehearsed contingency plans. Before each engagement began, both American and Finnish forces knew they could trust each other during difficult situations.

When liaising with the Finns as part of Operation Lock, we did a better job of anticipating friction before it occurred. During Operation Arrow, we often talked about what had already happened on the battlefield as if the focus of the discussions was battle tracking. In Operation Lock, the leaders in the Finnish headquarters and I were able to discuss future actions within the battle through shared understanding of the execution checklists (EXCHECK) and DSMs created by the battalion staff. It was during this time that we were able to learn a lot from our Finnish allies. They taught us how to use the thick terrain more to our advantage and forecast its challenges before facing them. They were also very proficient at understanding our enemy, teaching us how to better anticipate their actions. Their participation in our mission planning greatly contributed to the overall success of the mission.

Key LNO Takeaways

Overall, training with the Finnish Army was an extremely rewarding experience for both nations, especially considering Finland's recent admittance into NATO. While there is still work to be done to synchronize Finnish doctrine and standard operating procedures (SOPs) with those of NATO, it was very apparent that they are excited about what the future holds. For U.S. units training with Finnish forces in the future, it is important to emphasize to them the importance of utilizing LNOs properly and effectively.

As I look at LNOs through a broader lens, I believe we could do a better job at making them a significant part of most operational environments. FM 6-0 does a great job identifying the roles and responsibilities of a liaison officer. It also describes how having effective LNOs can benefit units. However, more discussions need to be had about how this is achieved. What training can we put potential LNOs through to ensure they are effective at the tasks required of them? What

TF Mustang conducts a combined arms rehearsal with Finnish allies prior to the start of the force-on-force portion of Operation Lock.

products and tools can we provide them with to help them properly represent the interests and SOPs of their units?

In the meantime, we can focus on best practices that LNOs can apply to make both the United States and our allies successful. If given the proper dedication and focus, LNOs can be extremely critical players in multinational operations. Here is a summary of those practices:

• **Be Vocal:** When conducting mission planning, the LNO may not be on the forefront of your allied commander's mind. It is your job as the LNO to convey your commander's intent to them. Sometimes you will have to be assertive, but you need to remain respectful. You may have information that could be important to the mission, but it will never help if you keep it to yourself. Be vocal but do not be a pest.

• **Build Trust:** As an LNO, the best way to build trust is to be present and on time. Additionally, have conversations with your allies to build positive working relationships. This will help you to trust each other and make operations more effective.

• **Be Patient:** There may sometimes be a language barrier between you and your allies. There are also many terms and acronyms utilized by the U.S. Army that are not known to them, and vice versa. You need to have the patience to work through these issues to achieve a shared understanding.

• **Understand the Commanders' Intents:** In order to be an effective LNO, you need to understand the commander's intent of both your unit's commander and the allied commander you are liaising with. You need to be able to effectively communicate your commander's intent so your allies understand the task and purpose of any adjacent or subordinate American unit. You also need to be able to effectively explain the allied commander's intent to U.S. units.

• **Understand Your Force's Capabilities and Limitations:** In addition to the commander's intent, you need to understand your force's capabilities and limitations. The allied force you are liaising with will not know your SOPs or the capabilities of your vehicles and weapons as well as you do. You need to use this information to help inform your ally's mission-planning process so that they are effectively utilizing U.S. units attached to them.

• **Mission-Planning Products and Graphics Distribution:** During RDSP and force-on-force operations, it is a good idea to create analog products as a redundancy for the distribution of graphics. Due to varying circumstances (such as quick turnarounds between battle periods, the time required to send graphics via Joint Battle Command-Platform [JBC-P], or JBC-P slant), this proved to be a good practice. Additionally, our allies did not have the option to communicate via JBC-P. Therefore, we replicated "releasable to NATO" products and graphics using large acetate sheets that we distributed to each U.S. and allied subordinate unit at the daily orders briefs.

• **PACE Plans:** Operating in the thick Finnish terrain sometimes affected communication transmissions. As an LNO, you need to plan for contingencies during these situations. Runners worked best for us. During both operations, I functioned as a runner to the Finnish TCP. Throughout Operation Arrow, I had frequent face-to-face communication with their TCP commander and transmitted orders to U.S. subordinate units via our radios. In Operation Lock, I often ran between the S3's vehicle and the Finnish TCP co-located at our TAC to reduce friction points, and I coordinated with them to communicate with our Finnish subordinate units on their radios. The Finns also had runners on dirt bikes that they would send to link up with subordinate or adjacent units as an emergency.

By focusing on the three tenets of interoperability, the use of LNOs provided TF Mustang valuable training though clear communication and shared understanding. I believe that U.S. Army doctrine could do more to highlight the connection between effective LNOs and multinational interoperability. If we can properly convey the importance of liaising to both our allies as well as our own Soldiers, then I believe we can be a more lethal force.

Notes

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[2] LTC Jay Ireland and MAJ Ryan Van Wie, "Task Organizing the Combined Arms Battalion for Success in Eastern Europe," *Military Review*, 103/6 (November-December 2023): 35-44, https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/November-December-2023/Task-Organizing/.

[3] Field Manual 6-0, *Commander and Staff Organization and Operations*, May 2022, paragraph 2-104.

[4] Dr. James Derleth, "Enhancing Interoperability: The Foundation for Effective NATO Operations," *NATO Review*, 6 June 2015, https://www.nato.int/docu/review/articles/2015/06/16/enhancing-interoperability-the-foundation-for-effective-nato-operations/index.html.

[5] "Interoperability: Connecting Forces," North Atlantic Treaty Organization, 11 April 2023, https://www.nato.int/cps/en/natohq/topics_84112.htm.

[6] CPT Kenneth O'Reilly and CPT James Devlin, "Interoperability at JMRC: Mission Command and the LNO Team," *Infantry* 104/4 (October-December 2015): 56-59, https://www.moore.army.mil/infantry/magazine/issues/2015/OCT-DEC/pdf/14)%20O'Reilly-Interoperability.pdf.

[7] 1LT Brandon Akuszewski and CPT Larry Tran, "Tanks Need Infantry to Lead the Way," *Armor* 135/4 (Fall 2023): 20-24, https://www.moore.army.mil/Armor/eARMOR/content/issues/2023/Fall/3%20Akuszewski_Tran.pdf.

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Enhancing Marksmanship Training in the Indo-Pacific Region: A Strategic Guide

1SG ALEXANDER ROYSDEN

The Indo-Pacific's strategic importance cannot be overstated as a linchpin for global security and economic vitality. Achieving marksmanship proficiency within this context is not just about enhancing individual skills but also ensuring military operational readiness and collective efficacy. This guide is designed in alignment with the strategic vision of the U.S. Army Pacific Command (USARPAC), I Corps, and Operation Pathways, focusing on bolstering joint readiness and fostering interoperability among forces deemed combat credible. The essence of this endeavor is to solidify the foundation of a force capable of upholding peace and stability in a region that is pivotal to global security dynamics.

The Imperative of Addressing Joint Marksmanship Training Challenges

Cobra Gold 2024 and similar exercises highlighted multifaceted challenges ranging from cultural sensitivities and logistical hurdles to equipment disparities and security issues. Addressing these challenges is more than just a matter of procedural adjustment. It is critical for refining forces' operational capabilities, ensuring readiness for a range of contingencies, and underpinning the broader objectives of regional stability and security cooperation. Adaptive strategies and deepened collaboration are the pathways through which these training outcomes can be significantly improved.

Strategic Approaches to Common Training Challenges

Enhancing Marksmanship Training Through Effective Planning and Goal Setting

Successful marksmanship training is rooted in setting precise objectives and engaging in meticulous planning. This ensures resources are utilized efficiently, with every session designed to advance the overarching goals of accuracy and proficiency. A clear plan with specific targets enhances the development of shooting skills and prepares Soldiers for the tactical challenges they might face in the Indo-Pacific theater.

Recent operations have underscored the need for structured marksmanship training programs focusing on specific measurable achievements. This strategic focus shifts training from basic firearm handling to a comprehensive skill set that includes improving advanced marksmanship techniques, optimizing resource usage, and elevating training quality. For units that complete the weapon zeroing process before deployment, dedicating extensive time to re-zeroing during marksmanship training may be optional. Recognizing and validating the existing proficiency in weapon zeroing can help streamline training sessions, allowing more time to be allocated toward advancing other critical marksmanship skills. This approach ensures that training time is utilized efficiently, focusing on areas that enhance operational readiness and marksmanship performance. Tailoring training to focus on essential skills required for operational readiness is paramount.

To ensure marksmanship training is impactful, a detailed understanding of the task at hand, including equipment needs and the roles of instructors on the firing range, is essential. Planning should include the designation of trainers beforehand and the delineation of responsibilities to maximize training effectiveness and efficiency. Moreover, integrating supplementary training that aligns with marksmanship goals can enhance overall skill development. Senior NCOs play a vital role in monitoring training progress on the ground, assessing its effectiveness, and making adjustments

SFC Addison Clark, an instructor with the U.S. Army Marksmanship Unit, familiarizes Royal Thai Army soldiers with the M17 pistol. (Photos courtesy of USAMU)

as necessary to maintain focus on improving marksmanship and achieving mission objectives.

Strategies for Advanced Marksmanship Training

• Define Precise Training Goals: Connect every marksmanship training objective directly with enhanced operational capabilities, ensuring a direct link between skill improvement and mission readiness.

• Allocate Resources Strategically: Distribute resources thoughtfully to address marksmanship training needs, from basic handling to advanced firing techniques.

• Focus on Advanced Skill Development: Elevate training from foundational firearm skills and progress to advanced marksmanship tasks, preparing Soldiers for various combat scenarios with enhanced precision and confidence.

Enhancing Marksmanship Training Through Trainer Expertise

The caliber of marksmanship training is directly linked to the knowledge and skills of the trainers. Building a solid leadership and instructional team is vital for teaching advanced shooting techniques and tactical expertise, raising the combat efficiency of the entire force. Cultivating a culture that values excellence and continuous learning is critical to securing a competitive advantage.

A lack of experienced trainers can markedly reduce the quality of marksmanship training. A situation where senior NCOs are required to manage basic training tasks due to a shortage of adequately trained NCOs highlights the urgent need for a systematic approach to developing trainer expertise. Investing in trainers' continuous education and skill enhancement is crucial for ensuring they can deliver practical marksmanship training that adapts to changing demands.

Establishing and maintaining comprehensive development programs for trainers is crucial. These programs aim to improve both technical skills in marksmanship and instructional abilities, ensuring that trainers are well-prepared to impart advanced knowledge and adapt their teaching methods to meet the needs of the training environment.

Dedication to the continual professional growth of training staff is essential. This involves updating their knowledge of marksmanship and instructional techniques and enhancing their ability to respond to the evolving challenges of military training. By prioritizing the development of trainers, units can sustain a high level of training excellence, ultimately improving the operational readiness and effectiveness of the force.

Key Actions for Improvement

• Create Structured Trainer Development Programs: Initiating well-defined training opportunities for instructors is necessary for refining their marksmanship and teaching skills.

• Promote Continuous Professional Growth: Encouraging and supporting trainers' continuous improvement ensures that the training remains relevant and practical, thereby maintaining superior standards of marksmanship instruction.

An instructor from the USAMU demonstrates how accuracy affects terminal ballistics and highlights the need to for immediate, lethal shots.

Optimizing Equipment and Supply Management for Marksmanship Training

In the challenging conditions of the Indo-Pacific, logistical hurdles can transform minor issues into significant obstacles, potentially halting training progress. Proactive equipment forecasting and adept supply management ensure training proceeds smoothly and remains up to date with the latest warfare and shooting techniques.

A tangible example of such a challenge is the shortage of essential items like staples, which, despite being readily available in places like the United States, can become a critical issue in remote or less accessible environments. This situation highlights the need for thorough logistical planning and effective inventory management, enabling uninterrupted training operations. Units must give equal importance to securing essential and minor supplies to guarantee ongoing operational effectiveness.

Strategies for Maintaining Supply Continuity

• Implement Advanced Inventory Systems: Adopt inventory management technologies that track supplies in real time and predict potential shortfalls, ensuring that all necessary materials are always on hand.

• Regular Supply Evaluations: Conduct frequent reviews of supply levels to promptly identify and rectify any shortages, thereby preventing any negative impact on training schedules.

• Create Contingency Supply Strategies: Develop

backup plans for supply shortages, including stockpiling essential items, to minimize the consequences of sudden supply chain disruptions.

• **Emphasize Resource Management Training:** Train personnel on the importance of resource conservation and efficient use, stressing the role of proper supply management in maintaining training readiness and operational capacity.

By focusing on these recommendations, units can improve their logistical planning and supply management, ensuring that marksmanship training and other operational activities proceed without interruption, regardless of the environmental or logistical challenges.

Tailoring Training for Environmental and Infrastructural Challenges

The Indo-Pacific region's diverse and often challenging terrain and infrastructural setups necessitate a flexible and innovative approach to marksmanship training. Customizing training environments to accommodate these varied conditions ensures that Soldiers are prepared for theoretical engagements and adept at handling real-life scenarios with proficiency. This adaptability enhances the relevance and effectiveness of marksmanship training, making it more impactful.

The unique challenges presented by limited space and specific terrain features, such as the raised berms seen on Thai training ranges, add complexity to practical marksmanship training. These scenarios underscore the need for strategic planning that accounts for environmental and infrastructural constraints, optimizing limited resources to maintain high-quality training standards.

Strategies for Effective Marksmanship Training under Variable Conditions

• **Conduct Strategic Training Schedule Planning:** Craft marksmanship training schedules with an eye toward environmental and infrastructural challenges. This planning should utilize the terrain's unique aspects to simulate real-world scenarios, thereby enhancing the training's applicability and realism.

• **Maximize Available Space:** Efficiently use the available space by adapting marksmanship drills to fit within constrained areas. This could involve creative target placements, varied firing positions, and natural and artificial barriers to mimic operational environments.

• **Implement Safety in Diverse Terrain:** Develop and enforce comprehensive safety protocols tailored to the specific challenges of the training environment. This ensures the well-being of personnel as they navigate through and adapt to the complexities of different terrain and infrastructural setups during marksmanship exercises.

By thoughtfully addressing these challenges with tailored strategies, marksmanship training can remain robust, effective, and closely aligned with operational realities. Adapting to environmental and infrastructural variables prepares Soldiers for a range of operational contexts and instills a mindset of flexibility and problem-solving crucial for modern warfare.

Enhancing Joint Operations Through Training Methodology Standardization

Participating in joint marksmanship exercises allows forces to gain practical experience with partnered forces' equipment and operational tactics. This direct engagement fosters a more profound understanding and facilitates adaptation to different methodologies and technologies.

Discrepancies in equipment and training approaches can significantly disrupt the effectiveness of joint military operations and training exercises. Establishing collaborative standardization efforts is crucial for achieving seamless interoperability among allied forces, thereby improving the collective defense posture and operational effectiveness in multinational contexts.

Differences in marksmanship equipment, such as differing firearms and sighting systems between U.S. forces and partner nations, can present obstacles to practical joint training. To overcome these challenges:

• **Pre-Training Alignment for Standardization:** It is essential to engage in discussions before training begins to understand the host nation's equipment and capabilities. These sessions should create joint understanding and unify training methodologies, creating a harmonized training environment that leverages the strengths of all forces involved.

By proactively addressing these disparities, forces can enhance interoperability, facilitate smoother joint operations, and bolster collective defense capabilities in multinational environments.

Standardization and Adaptability Initiatives

• **Develop Flexible Training Approaches:** Crafting training modules that can adapt to equipment variations is critical. Focus should be placed on transferable skills and tactics across different weapon systems and technologies, ensuring personnel are prepared for various operational contexts.

Maintaining Open Lines of Communication

Establishing channels for ongoing communication allows for swiftly addressing any equipment or methodology discrepancies. Regular feedback and debriefing sessions contribute to a culture of continuous improvement, mutual understanding, and collective problem-solving.

By focusing on these strategies, military units can effectively bridge the gap between different equipment and training methodologies, ensuring that marksmanship training in joint operations is practical and cohesive. This will ultimately strengthen allied forces' interoperability and operational capabilities.

Integrating Cultural and Linguistic Diversity into Marksmanship Training

While cultural and linguistic diversity adds richness and variety to joint military operations, it can also introduce signifi-

cant communication challenges. Addressing these barriers effectively through specialized training and using communication aids, such as smart cards with crucial terminology, is essential for facilitating effective collaboration and operational coordination during complex missions.

Enhancing Communication for Joint Marksmanship Training

The presence of language differences has been notably impactful on the efficiency of communication and training processes. To enhance mutual understanding and cooperation among multinational forces:

• **Create Smart Cards for Immediate Reference:** Providing leaders and participants with smart cards that list key marksmanship and operational terms can help bridge communication gaps. These cards are a quick reference to facilitate more apparent interactions during training and operations.

A USAMU instructor coaches a scout platoon from 1st Battalion, 17th Infantry Regiment and their partnered force's reconnaissance element on pistol marksmanship.

• **Leverage Skilled Interpreters:** Ensuring that skilled interpreters are available improves communication and deepens cross-cultural understanding, allowing for more effective teamwork among forces from different backgrounds.

By adopting these strategies, the challenges posed by cultural and linguistic differences can be turned into opportunities to strengthen the bonds between allied forces. This not only improves the effectiveness of joint marksmanship training exercises but also enhances the overall coordination and execution of multinational operations.

Conclusion

The U.S. Army Marksmanship Unit (USAMU) plays a pivotal role in enhancing marksmanship proficiency for Soldiers, trainers, and units through focused initiatives. By prioritizing comprehensive training programs and professional development opportunities, the USAMU effectively teaches essential marksmanship concepts, improving training effectiveness and mission readiness.

The USAMU is committed to establishing clear standards and procedures for marksmanship training, weapons systems, and methodologies. Tailored training programs address specific challenges identified during exercises like Operation Cobra Gold 24, with close collaboration with unit leaders to meet their needs. The USAMU offers a unique advantage in developing a refined program of instruction (POI) that aligns closely with the training unit commander's intent. Unlike other Army marksmanship schools constrained by approved POIs, the USAMU can tailor training to meet the commander's end state. By considering specific problem sets and intent, the USAMU can develop POIs that effectively address these challenges.

This flexibility is crucial when dealing with different weapons, partnered forces, and diverse environments, requiring a deep understanding of doctrine and best practices. Creative problems call for innovative solutions, and the USAMU excels in providing tailored instruction for non-traditional issues and intents. Leveraging expert trainers and subject matter experts, the USAMU delivers high-quality instruction and mentorship, ensuring units are well-prepared for successful mission accomplishment in any operational environment.

By implementing these solutions, we aim to enhance marksmanship training effectiveness, promote interoperability among allied forces, and ensure readiness in the Pacific theater. Overcoming the challenges encountered in marksmanship training, particularly in the Indo-Pacific Region, is essential for ensuring readiness and effectiveness. The USAMU enhances training outcomes and resource utilization by implementing proactive solutions such as setting clear objectives, optimizing command structures, and addressing equipment gaps. Furthermore, promoting collaboration, standardization, and cultural sensitivity training will foster greater interoperability among allied forces. Through a collective effort and a commitment to excellence, we can ensure that marksmanship training remains adaptive, effective, and aligned with strategic objectives.

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Army Rifle Marksmanship Against Moving Targets

SFC (RETIRED) JOHN C. SIMPSON

For almost as long as Soldiers have been launching projectiles at each other, the issue of moving targets has been a regular point of discussion. After reading the latest moving target doctrine in Training Circular (TC) 3-22.9, *Rifle and Carbine*, I wanted to submit a constructive critique to stimulate discussion of the subject.

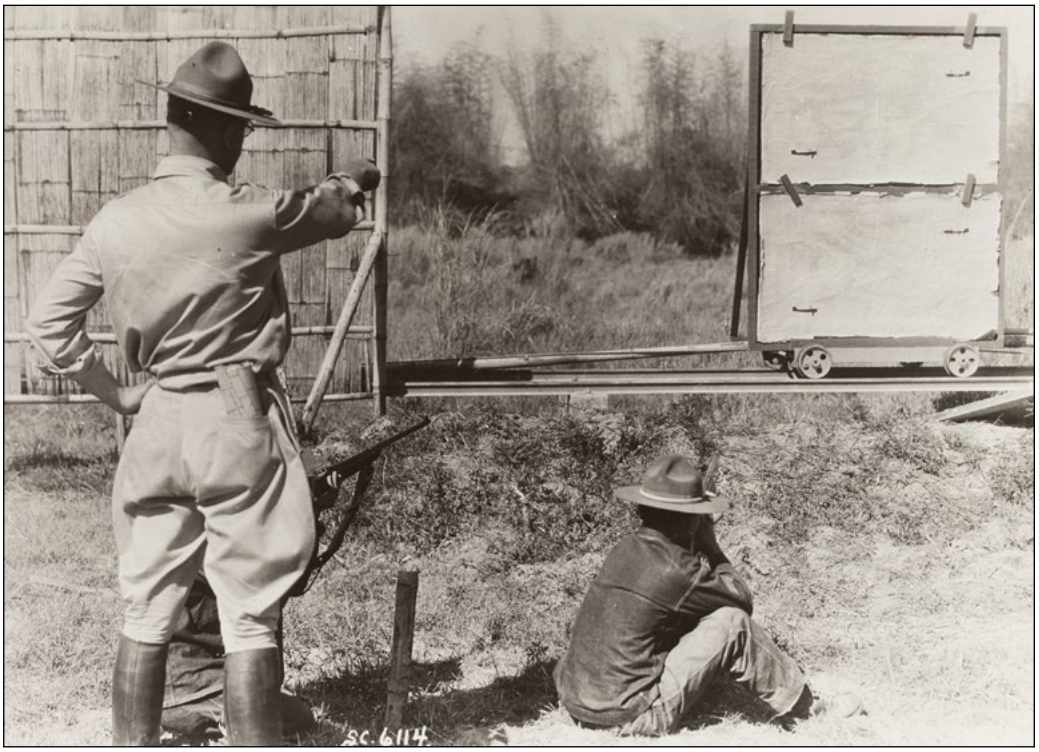
Before getting to the subject hand, it may be useful to share what I call the four characteristics of a personnel target.[1] This proves beneficial if we define our target first and then work backwards to design our training. Therefore, we should start this discussion knowing that a target can be: dynamic, non-cooperative, robust, and restricted. Looking at each of these characteristics in more detail, we can see how they impact on our ability to actually hit a real-world target.

Dynamic: This simply means that the target can change… as in change their orientation, change their threat level (by shouldering a rifle or even surrendering), or change their position (standing to kneeling to sitting, etc.). Paper targets are two-dimensional and people are three dimensional. Real people can change their shape. For example, if making a chest shot against someone in full-on stance, this may be about 19 inches across the shoulders. By facing to the left, a target can become 9-inches wide. This change may also come without warning and be performed quickly.

Non-cooperative: This can be an attempt to place cover or concealment between you and them if they know or think they know where your position is; they can move if standing still and stop suddenly if moving. They can also run, crawl, or dive to the ground. In a nutshell, they're not cooperating with your efforts to shoot them. Last and certainly not least, they can shoot at you as well.

Robust: This addresses the uncertainty of wound ballistics. Despite assurances of all kinds of wounding theories, we can't overlook the fact that people have been wounded with .50 caliber bullets and killed with .22 rimfires. And I know that shot placement is the "go to" response right now, but especially in a discussion of moving targets, it becomes problematic as we'll see later in this article. Also, the need for a rapid follow-up shot is always a possibility.

Restricted: This addresses the realities of rules of engagement, which are basically unknown until the conflict begins. Consider World War II, where an enemy soldier was fair game just by the uniform he was wearing, to more recent situations, where armed men were off limits unless they pointed a weapon in your general direction.



Service members conduct marksmanship training on a moving target at Fort William McKinley in the Philippines on 24 April 1933. (National Archives photo)

A Brief History of the Moving Target Dilemma

Although moving targets across the years have included advancing and retreating troops, I will limit this discussion mostly to engaging moving targets (or "movers") that cross laterally across our front.

Please note that this is in no way meant to be an exhaustive history but rather a "highlight reel" of how different generations of American Soldiers have recognized and addressed this

problem. Consider it a "flashbulb" look at the advances (and retreats) in the evolution of moving target training for Infantry Soldiers. At this point, it may be useful to quote military historian Timothy Harrison Place, who said, "It is, or should be, a tenet of military history that one cannot assume that what the manual said was what the soldiers did."[2]

Rather than going down the usual rabbit hole of beginning with cavemen throwing rocks, English bowmen at Agincourt, or the Minutemen with their smooth-bore muskets, I will start with the 19th century.

Late 19th Century

Manual for Rifle Practice* by General George Wingate, 1874, *Army and Navy Journal

89. In firing, at an object in motion, the instructor should explain that the best way is to aim in the usual way, and then, without dwelling an instant on the aim, move the rifle laterally in the direction and to the extent required, by simply turning on the hips, the arms and eye being kept perfectly steady. If the object be approaching, the aim should be low; if receding, high. This must be decided by the distance and the speed of the object, fired at, and is a matter of judgment as to the distance it will have passed over during the flight of the bullet.

Note: Rather than sharing any rules, the author leaves how far to lead a lateral target up to a Soldier's judgment. This is also an example of a discussion about engaging moving targets that consisted of large formations of men moving toward or away from the firer.

***Instructions in Rifle and Carbine Firing for the United States Army* by CPT Stanhope E. Blunt, 1885, prepared by Command of Brigadier-General S. V. Benét, Chief of Ordnance, U.S. Army**

Chapter III - Practice at Disappearing and Moving Targets

362. Practice at some form of moving target should be frequently conducted, as firing at fixed targets has a tendency to make men too deliberate for field firing.

Either a disappearing target, or a running target may be employed.

367. For running targets the Cushing rolling target (paragraph 420) should be employed. The track should be raised at either end, forming two inclined planes, and two marker's shelters so placed as to permit of a run of about 40 or 50 yards. When it is not practicable to construct an inclined plane, the target, by means of a rope, may be drawn across the open space between shelters.

368. The ordinary B target, the skirmish figure target (Target D), or the figure of a horse or deer, may be used. For either of the latter, the frame supporting the target should be so constructed that it can be revolved around a centre pin, so that the figure may not appear to be moving backward.

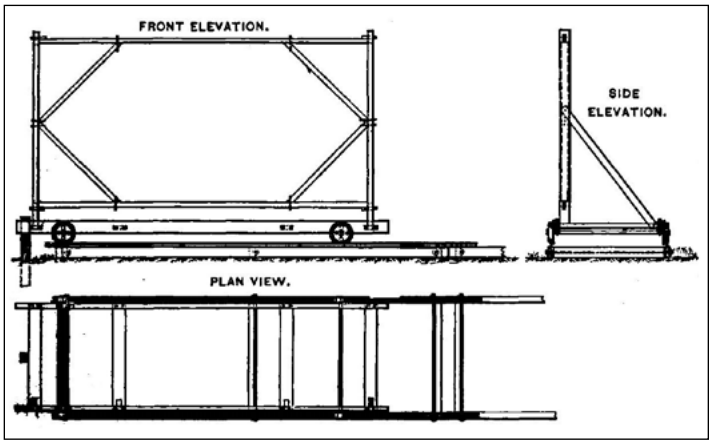


Figure 1 — The Cushing Target

371. Firing at running targets should commence at 50 yards, to be afterward increased to 100 yards.

372. In firing at a moving object, whether it be a target, or a man walking, or a horse at a gallop, the soldier must remember that the object will pass over a certain distance between the moment when the aim is completed and the rifle is discharged and the time the bullet reaches it, and that this distance must be calculated and allowed for. To accomplish this, if the object be moving across his front, the soldier must carry his aim or little in advance of it, depending on the speed at which it is moving, on the distance which it is from him, and the resulting time required for the flight of the bullet. If the object is moving from him, he must fire high, and if approaching him, low; while these different allowances can be readily calculated, their application will only produce good results when they have been actually determined by the experience of the individual soldier.

373. In firing at an object moving across the line of fire, the soldier should first aim directly at it, and that the aim may be caught quickly and clearly, he should use a full sight and aim low. He then, without dwelling on the aim, moves the rifle laterally and to the extent required, by simply turning on the hips, the arms and eye being kept steady and the shot fired the instant the aim is judged to be correct.

Note: It's interesting to find the comment in the above text that although leads can be calculated, the Soldier's judgment — when developed through live-fire practice — gives the best results. This publication also provides specific guidance on courses of fire and targets to be used in training.

Early 20th Century

Given all the current interest in using robots to provide three-dimensional moving targets to create downrange scenarios, we should also look across the Atlantic to the British Army's Aldershot Training Area in 1901 and a field fire exercise developed in response to the Second Boer War (11 October 1899 - 31 May 1902).[3] The targets and scenarios for this exercise were based on situations that confronted

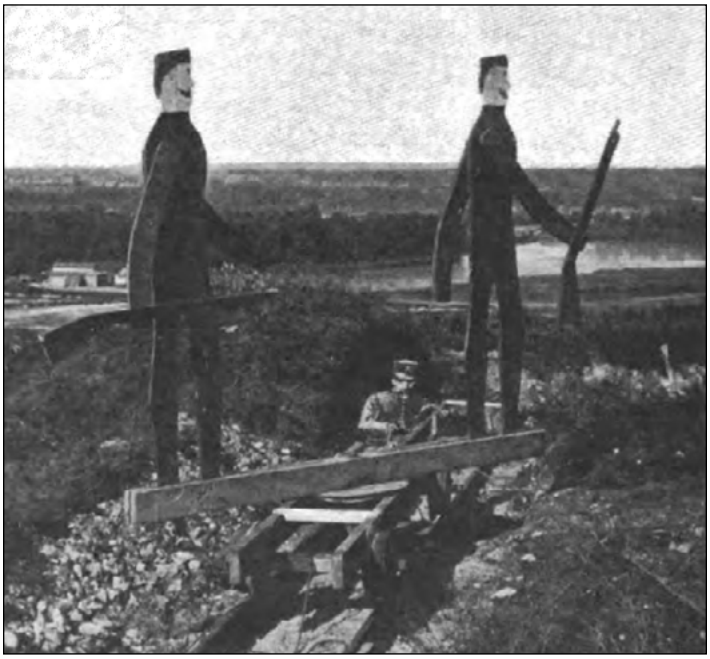


Figure 2 — The "Running Men" Moving Target

British soldiers while serving in South Africa against the guerrilla forces known as Boer Commandos.

An article in *Strand Magazine* by Albert H. Broadwell about this training featured photos of the moving targets the British Army crafted; these included the "Running Men" (two men skylining themselves), a Boer attack against an armored train, and a Boer signaler who had to be engaged, all culminating in the objective of capturing a Boer inn with an armed, moving target "landlord" that comes out carrying a rifle then executes an about face and heads back to the inn unless hit (see Figure 2).[4]

Some few years later, back in the States….

***Small Arms Firing Manual*, 1913, War Department**

219. Fire at Moving Targets

[…] In firing at a target moving across the line of fire it is desirable, on account of the confusion caused thereby, to hit the head of the column. It is necessary therefore to hold to the front a distance sufficient to allow for the time of flight and the rate of march. This will be accomplished by the observance of the following rough rules:

Against infantry it is sufficient to hold against the head of the marching column.

In the case of mounted troops at a trot, hold to the front 1 yard for every 100 yards of range; and at a gallop, 2 yards to every 100 yards of range.

Note: The emphasis here was still on engaging masses of enemy troops while on the march, and a formula for figuring leads against Soldiers on horseback was mentioned. This manual includes a table of leads for engaging troops and mounted cavalry (see Figure 3) as well as mentions training rifleman on Target K (see Figure 4).

In the same manual, Target K is described:

Target K - Sled target. The disappearing target beam (target I) is lashed lengthwise to two sleds. A rope from 200 to 300 yards long is used to pull this target and an escort wagon and team has been found to be the best motive power. The rope can be run through a snatch block and the team concealed by inequalities of the ground.

If no cover can be found for hiding the sled before it starts, it can be easily masked with brush, grass, etc., which will fall when the targets start.[5]

Mid to Late 20th Century

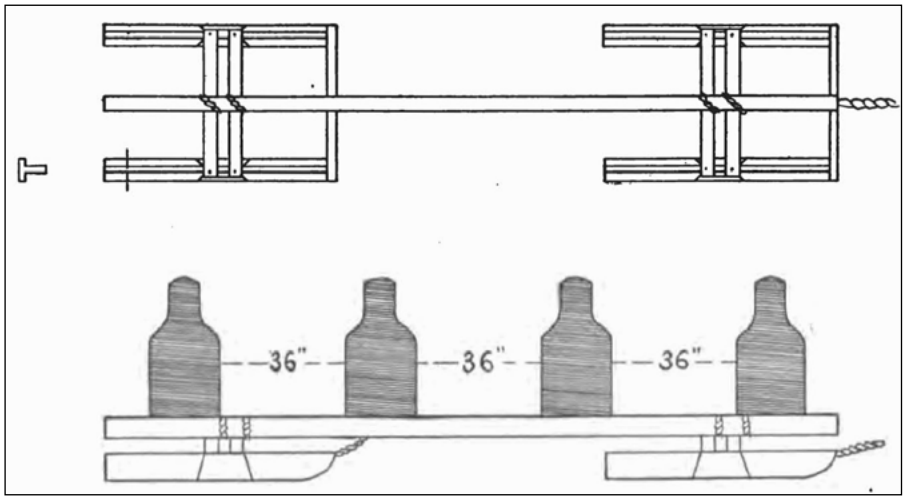
Field Manual (FM) 23-10, *U. S. Rifle, Caliber .30, M1903*, War Department, 2 January 1940

48. Scope of Training. Rifle units will be trained to fire at moving targets, such as tanks, armored vehicles, trucks, and personnel at appropriate ranges. Rifle fire may be employed to repulse or harass unarmored

Figure 3 — Table of Leads

Distance (yards).	Man walking.		Man double timing.		Horse walking.		Horse trotting.		Horse running.	
	Ft.	*In.*	*Ft.*	*In.*	*Ft.*	*In.*	*Ft.*	*In.*	*Ft.*	*In.*
100	Front edge.		.....	6	Front edge of body.		Front of body..		Front edge of body.	
200	.....	8	1	8	Front edge of body.		Front of body..		1	4
300	1	5	3	.....	Front of body..		1	6	3	10
400	2	2	4	5	Front of body..		3	4	6	6
500	3	1	5	11	1	.....	5	4	9	6
600	4	.....	7	7	2	.....	7	7	12	10

Figure 4 — Target K



vehicles and motorized troops. Rifle units will be trained to meet a tank attack by taking cover, standing their ground, and delivering the maximum possible aimed fire with armor-piercing or ball ammunition at the enemy tanks and hostile foot troops which may accompany them. To this end they must be trained in the technique of such fire.

Section III - Moving Personnel

53. Technique – a. Sight to be used. Under field conditions, moving personnel presents a fleeting target, and one more difficult to hit than a moving vehicle. This fact makes the use of the peep sight desirable for greater accuracy. However, the use of battle sight may be necessary when targets appear suddenly, allowing no time for sight adjustment. It is therefore desirable that the individual rifleman be trained in the employment of both sights in this type of firing.

b. Method of aiming. An elaborate system of calculating leads is neither necessary nor desirable. The following general rule forms the basis for estimating the proper leads.

When firing at a man walking across or at right angles to the line of fire, the points of aiming at the various ranges are as follows:

(1) At 100 yards, aim at forward half of body.
(2) At 200 yards, aim at forward edge of body.
(3) At 300 yards, lead him one-half the width of his body.
(4) At 400 yards, lead him the width of his body.

Proficiency in this type of firing depends largely upon the amount of time devoted to it by the individual in the practice of aiming, squeezing the trigger, and leading with appropriate speed.

54. Place in Training. As in the case of practice in firing at moving vehicles, instruction in this type of firing should follow instruction in known-distance firing and should immediately precede the training of the squad in technique of fire (musketry) when practicable.

Note: When examining this manual in detail, it states that moving targets are to be fabricated locally. Also note that it asserts that moving target training "should" follow a known distance range or individual rifleman training. The manual further advises that the training should immediately precede what was called technique of fire training, which focused on collective firing of rifle squads and platoons. By being wedged into the period after qualification badges were issued and before field firing started, moving target training could literally fall through the cracks of instruction. Also consider that unlike known distance marksmanship and unknown distance field fire, there were no courses of fire or grading standards for moving target training.

FM 23-5, *U.S. Rifle Caliber .30, M1*, Department of the Army, 2 October 1951

208. Method of Aiming

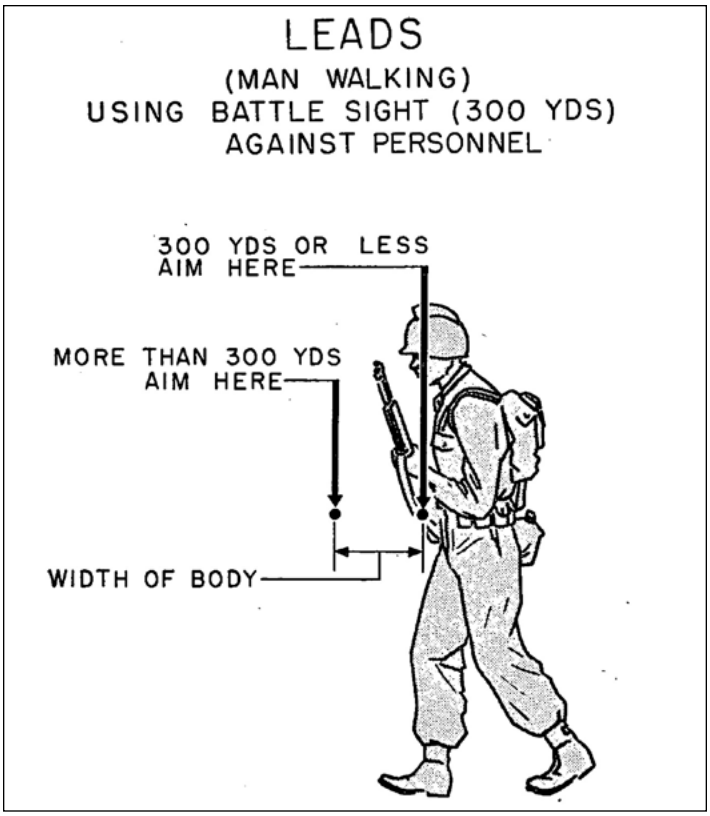


Figure 5 — Leads

b. Leads. To get the proper lead for firing at a man walking across your line of fire, aim the rifle as shown in figure 103. If the man is running, double the lead. Accuracy in this type of firing depends largely on the amount of time you devote to the practice of leading the target, aiming, squeezing the trigger, following through, and the correct battle sight setting. Use the following aiming points as a basis for obtaining the proper leads:

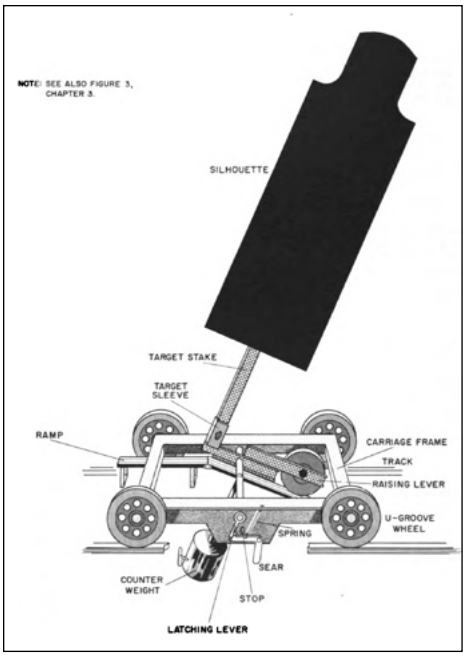
(1) At ranges less than 300 yards, aim at the forward edge of the body.

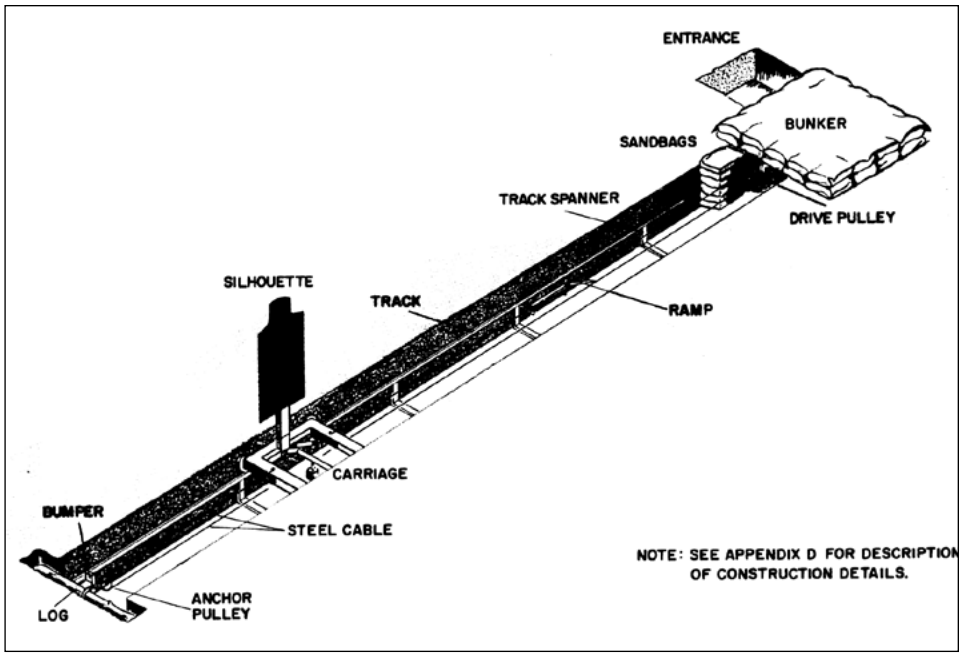
(2.) At ranges of 300 yards or more, lead your target by the width of the body. [See Figure 5]

Note: Despite what was written in doctrine, the Army had no requirements to engage moving targets as part of live-fire training. Also note the change from the pre-war 1940 lead rules in 100-yard increments out to 400 yards, which was likely due to marksmanship training mostly taking place on known distance ranges. Six years after the end of WWII, the lead rules had been vastly simplified, even if they probably weren't being trained on.

***Trainfire I: A New Course in Basic Rifle Marksmanship* by Howard H. McFann, John A. Hammes, and John E. Taylor; published by the George Washington University Human Resources Research Office, October 1955**

Although much maligned and misunderstood (particularly by those claiming we're still using it for basic rifle marksmanship), Trainfire underwent a great deal of research, experimentation, and testing prior to its adoption by the Army.





Figures 6 and 7 — Proposed (But Not Adopted) Moving Targets for Trainfire

Originally, "[l]aterally moving surprise silhouette" targets were "considered essential for individual marksmanship instruction." To this end, there were originally two periods of range practice against pop-up moving targets:

Period 15. Firing Practice on Silhouetted Moving Targets (4 hours, 8 rounds) — Dry and live firing from supported, foxhole position upon laterally moving pop-up targets at 200 yards with targets silhouetted against a white background to increase visibility and to make spotting of misses possible.

Period 16. Firing Practice on Non-Silhouetted Moving Targets (4 hours; 16 rounds) — Dry and live firing from supported, foxhole position upon laterally moving pop-up targets at 200 yards with targets not silhouetted against a white background.

However, by the time FM 23-71, R*ifle Marksmanship Course, Trainfire I,* was published in September 1957, the only moving targets encountered by trainees were the down-range role players during the 16 hours of target detection training. Given the notorious budget cuts in the U.S. Army at that time, I suppose Army leadership considered themselves lucky they were able to afford stationary pop-up target ranges. (Note: Some designs of pop-up moving targets that complemented the pop-up stationary targets from Trainfire are still in use today.)

U.S. Army Technical Note 1-67, *Small Arms Use in Vietnam: M14 Rifle and .45 Caliber Pistol*, Human Engineering Laboratories, Aberdeen Proving Ground, MD, January 1967

The following question was part of a survey of personnel who had experienced combat in Vietnam:[6]

24. When you see an enemy soldier is he usually:

Running Standing Hidden Prone

3 percent of respondents said 'standing' while 44 percent said 'running.'

And yet, there was still no requirement to qualify on moving targets at that point in time.

Field Circular (FC) 23-11, *Unit Rifle Marksmanship Training Guide*, U.S. Army Infantry School, 1 August 1984, and FM 23-9, *M16A1 and M16A2 Rifle Marksmanship*, Department of the Army, 3 July 1989

After decades of problems with Army marksmanship doctrine, the Army Research Institute was tasked with conducting new research and experimentation to correct some fundamental flaws in training. One topic addressed was engaging moving targets, with the results being described in FC 23-11 and authorized as doctrine in the 1989 edition of FM 23-9 (replacing an interim change to the 1974 edition).

It is doctrinely (sic) unsound to move laterally in front of an enemy position. Therefore, you would not expect to engage many combat targets moving at 90 degrees from the firer's position. Combat targets can be expected to be moving at any angle, with some moving directly at the firer. Also, in the case of close-in targets, or in the case of targets moving at a small angle (5 to 40 degrees) even the perfect application of the complicated lead rules would result in many target misses.

In view of the above, a single lead rule has been developed for field testing. This single rule, place the trailing edge of the front sight post at target center, will allow the teaching of one sight rule for all laterally moving targets at all ranges moving at all angles, moving at any speed, and with no decrease in hit probability over the previous sight rules. This sight/target relationship is shown in Figure

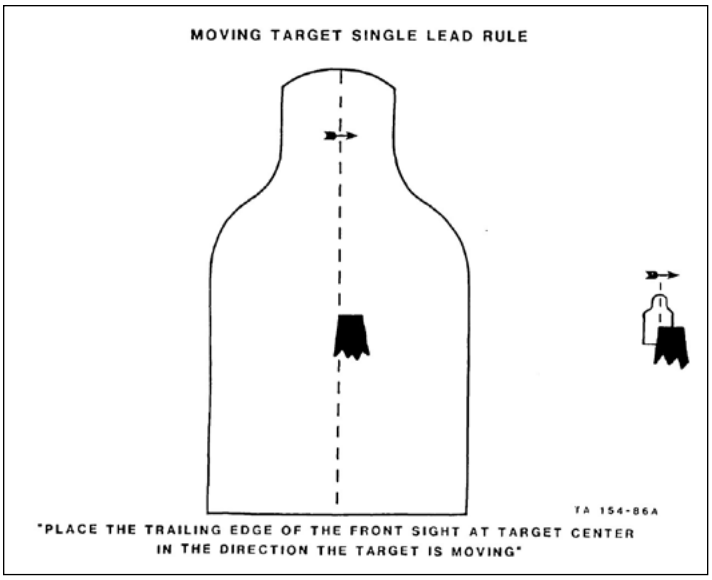


Figure 8 — Moving Target Single Lead Rule

17-2. This one rule causes lead to automatically increase as the range to the target increases.

Note: Even though a well-thought-out technique, the manual makes the mistake of illustrating it using a full-on E type silhouette target. The technique will still work against a reduced width silhouette representing the profile of an enemy. The main takeaway is that the Soldier doesn't have to be constantly drilled in correctly estimating target distance, speed, AND angle in order to use this technique.

Of course, this method would have to be updated and tested for using a red dot sight as found on current weapons. Also of interest in the 1984 manual, Chapter 34 identifies and discusses problems when attempting moving target training with the Multiple Integrated Laser Engagement System (MILES):

MILES is a tactical shooting device — it is not a marksmanship device.

The use of MILES devices can make some contribution to a unit's marksmanship program; however, care must be taken that negative training does not occur.

Using MILES to practice the engagement of moving targets may be very misleading. Particularly since this may be the only moving target training some soldiers have had. The laser is not affected by range, gravity, or wind and is much faster than a bullet, making the engagement of moving targets vastly different for the two systems. To illustrate, we will use a man-size target at 450 meters, running 10 mph, with a 10 mph crosswind. When the laser is aimed at this target, it will hit where it is aimed. (The target actually moves a distance which would fit 15 times into the thickness of this page while the laser is traveling to the target.) If a rifle barrel is lined up on the same target and fired, during the bullet flight time the target will have moved 10 feet, the wind will have blown the bullet 3 feet off course, and the bullet will have dropped 5 feet from the boreline — certainly a significant difference.

So, although the manual diplomatically says that use of MILES "may be very misleading," I'm prepared to say that it provides negative reinforcement and rewards behavior that would guarantee a miss in combat while punishing behavior (like leading the target) that would likely result in a hit.

21st Century

TC 3-22.9, *Rifle and Carbine*, Department of the Army, 20 November 2019

And now we come to the reason why I say that, in my opinion, moving target doctrine for rifle marksmanship has taken a step backwards with the publication of this TC.

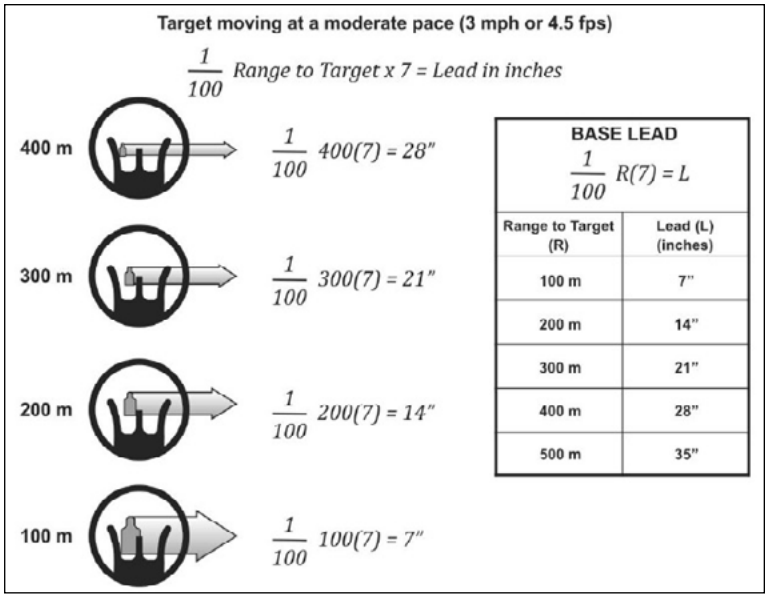
The Single Lead Rule is now replaced with a mathematical and ballistics-based theory grounded on the assumption that the individual Soldier fighting on a battlefield will know:

- The distance to a dynamic and non-cooperative target;
- The speed it's moving at;
- The angle it's moving at; and
- The time of flight of the bullet over the assumed distance.

Instead of "Private, align the trailing edge of the front sight post with the center mass of the target and squeeze while tracking to keep that sight picture," we're treated to a complex equation as seen in Figure 9.

While it is possible for every rifleman to train on those skills necessary to accurately estimate distance, speed, and angle, what is the chance they will know them to the degree that they'll be available six months from now at 0400 while taking incoming fire? How likely is it that leaders will have the time and resources to get their troops to that level of proficiency and maintain it?

Figure 9 — Deliberate Lead Formula Example



Here's a little visual test for readers; I'll limit it to estimating a target's angle. In the first photo at right, is he at 15 degrees to you? Maybe 45? In the example on the far right, is he at 90 degrees for a full lead or 70 degrees for 94 percent of that?

I'll end the suspense. In the photo at left, he's at 30 degrees (everyone usually guesses 45 degrees), and on the right, he's at 60 degrees. You see, if you don't change the lead based off of target angle, and your estimations of speed and distance are off, then you're likely to miss.

Figures 10 and 11 — Target Angle Estimation Examples

And this matters because, as we see in the 1967 survey, engaging moving targets isn't forbidden knowledge or an advanced skill — it's a part of Basic Rifle Marksmanship as first stated back in 1955 by the developers of Trainfire. This is a skill that needs to be trained, practiced, and tested. And the method used needs to be simple and relevant to the real world — not the known distance range.

Notes

[1] John Simpson, *Foundations of Sniper Marksmanship* (Seattle: Blue360 Media, 2022). This section is a modification of the text found in my book.

[2] Timothy Harrison Place, *Military Training in the British Army, 1940-1944: From Dunkirk to D-Day* (London: Frank Cass Publishers, 2000), 17.

[3] Rudyard Kipling's 1890 poem "Gunga Din" mentions "Aldershot" to contrast the difference between conducting a training exercise in England and performing in combat.

[4] "The New Musketry Practice at Aldershot" by Albert H. Broadwell, *Strand Magazine* 22/132 (December 1901).

[5] War Department, *Small Arms Firing Manual*, 28 February 1913, paragraph 259.

[6] The 83 respondents were assigned throughout various Marine divisions: the 1st Marine Division (9), 3rd Marine Division (52), 5th Marine Division (8), 7th Marine Division (8), 9th Marine Division (2), 26th Marine Division (8) and (1) Not specified.

SFC (Retired) John C. Simpson served as a weapons sergeant with the 10th Special Forces Group (SFG) (Airborne), Fort Devens, MA; a sniper instructor at the U.S. Army JFK Special Warfare School; sniper and company master sniper in Charlie Company, 1st Battalion, 10th SFG in Bad Tölz, Germany; chief instructor at the 10th SFG (A) Special Operations Target Interdiction Committee at Fort Devens. He is the author of six books; the last three are: *The Sniper's Notebook* (2010), *Foundations of Sniper Marksmanship* (2022), and *Foundations of Patrol Rifle Marksmanship* (2023). SFC Simpson owns the Simpsonian Institute, a historical research and analysis company, and continues to provide small arms and sniper training to police and military. He can be reached at the-institute@live.com.

Special thanks to 2LT Joseph Galli for assisting with target angle estimation examples.

Using Sustainment Tables for Supply Team Certification

MAJ MIKHAIL JACKSON

Sustainment requires simultaneous and continuous synchronization at all echelons of command. The sustainment warfighting function can be both complex and complicated when not handled appropriately. Sustainment warfighting requires a holistic and balanced viewpoint at all echelons for a unit to be successful. Looking at sustainment throughout the years, specifically property accountability, there are multiple challenges and a lack of synchronization at the company supply level. Company supply rooms must have trained supply personnel who stay nested with each other on day-to-day responsibilities to be successful. Supply teams must understand and share a balance of roles and responsibilities. To better set conditions for success, units need to invest time in developing company supply teams with the appropriate training and certifications/qualifications. Sustainment team certification would establish a common language and understanding of standards, allowing commanders to understand the risk they are assuming in their supply rooms.

Supply Team Certification

A company supply team typically consists of a company commander, supply sergeant, supply clerk, and executive officer/supply officer. Given that the Army is commander centric and that the Command Supply Discipline Program (CSDP) is the commander's program, commanders must stay involved with daily supply transactions to enforce appropriate supply measures. Company commanders and their small team of Soldiers can only be fully functional if all Soldiers get the appropriate training and know their roles and responsibilities.

Considering that the workload of a supply team can sometimes be overwhelming, each supply representative must be diligently and consistently involved with daily supply contributions. A supply team certification model similar to an Integrated Weapons Training Strategy (IWTS) certification concept could be extremely beneficial to company supply teams. IWTS tables build relationships, increase maneuver understanding of how to provide sound guidance, and raise understanding of the capabilities and limitations of maneuver unit systems. Training Circular 3-20.0, *IWST*, states, "Fundamental Soldier and military occupational specialty [MOS] specific skills serve as the foundation of IWTS and must not be overlooked. Soldiers, crews, teams, squads, platoons, companies, and battalions achieve the highest level of proficiency when building upon mastery of those foundational skills." A similar supply team certification concept would help synchronize needed training for supply teams and provide a shared experience for Soldiers to be better involved as sustainment leaders.

Though some might think the notion of supply team certification is bit unconventional, it is not too far-fetched to lean towards a process of table certification for supply teams, especially given the fact that supply teams will have more supply transactions in future modernization efforts, like StoreFront, changing the way sustainment does business. Supply team certification would further prepare supply teams for success by giving them the experience they would need for future supply transactions. So, what would a supply team certification table look like? My proposed concept incorporates all the essential elements of supply. Supply team members would need to understand the basic knowledge of sustainment within their unit to be successful. This would include knowledge, training, and understanding in cyclic inventories, change of command inventories, lateral transfers, Total Equipment Management Strategy (TEMS), and maintenance operations. I recommend a two-week

Figure 1 — Proposed Sustainment Tables I through VI

*Commanders must complete installation company commander/first sergeant course prior to sustainment table certification.

Sustainment Tables (ST) I through VI	
Table	**Description**
ST I	Property book officer/battalion S4 team in-brief (1 hour) and Global Combat Support System-Army (GCSS-A) Supply Management Course (40 hours)
ST II	Army Records Information Management System (ARIMS) filing system (2 hours) Unit-level publications (2 hours) electronic Financial Liability Investigations of Property Loss (eFLIPL) (2.5 hours) Test, measurement, and diagnostic equipment (TMDE) (2 hours)
ST III	Organizational clothing and individual equipment (OCIE) and initial inventories (2 hours) GCSS-A change of command inventory class (2 hours)
ST IV	Modified table of organization and equpment (MTOE) class (1 hour) GCSS-A bill of materials (BOM)/PB01/documenting and ordering component shortages (2 hours)
ST V	GCSS-A Class IX management and Command Maintenance Discipline Program (CMDP) Success Course (24 hours)
ST VI	GCSS-A Hand-Held Terminal (2 hours)

(81.5 hours) certification block consisting of the supply course sustainment tables seen in Figure 1 to train and certify supply teams.

Supply Team Certification Training and Resourcing

Supply team certification is not a bridge too far, given the fact the Army had a similar proficiency program concept in the late 1970s called the Skill Qualification Test (SQT). It might not be too hard to even fathom a similar MOS proficiency testing concept extending to all the other MOSs across the Army as well. Professional military education (PME) is not something that should be taken lightly, especially if we intend on having leaders lead effectively at the speed of war. Though resourcing may have hurt previous program concepts, resourcing for supply certification training would come from the battalions to the companies with assistance from Command Maintenance Evaluation and Training (COMET) team representatives. COMET team reps would conduct the training, with battalion S4s performing the final certification after training is complete. Hands-on testing consisting of supply reports, financial liability investigations of property loss (FLIPLs), Army Records Information Management System (ARIMS), and normal supply transactions could be used for certification test out. A more internalized resource concept might prove to be a move in the right direction.

Soldiers in the 7th Infantry Division's Headquarters and Support Company supply room complete GCSS-A supply actions. (Photo by CPT Tai Nguyen)

Final Thoughts and Considerations

By focusing on synchronization, we can change the cultural misunderstandings at the company supply level. Synchronization at all echelons is critical when understanding required training. I recommend that company supply teams receive training immediately upon arriving at their unit and then immediately complete certification. If Soldiers fail certification, they retrain, and if they fail again, the argument should be made that those Soldiers need to reclass or be flagged. Also, given the frequency of personnel changes, supply teams need recertification annually. The consistency of required training on a routine basis ensures the supply synchronization needed for unit sustainment success. Furthermore, it's time to ask the hard question: If Soldiers cannot demonstrate proficiency in their MOS, especially with something as extremely technical as sustainment, then maybe Soldiers need more self-development or the Army needs a stronger stance on PME certifications.

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Training the Fundamentals in Basic Combat Training

LTC BRIAN FORESTER
CPT NIKITA HOOKS

"Soldiers need to shoot, move, communicate, and be experts in their craft."

— GEN Randy George
Army Chief of Staff

We are an Army in motion. Accelerating technological change, strategic competition with peer adversaries, and continued global demands for Army forces serve as the backdrop of an institutional transformation geared toward readiness for large-scale combat operations. But while the character of war is changing rapidly, it remains a fundamentally human endeavor.[1] Basic individual skill proficiency is foundational to Army readiness, and this proficiency begins in Basic Combat Training (BCT).

Trainees are tested on protecting themselves from chemical and biological contamination using their protective masks. (Photos courtesy of authors)

As leaders within the 3rd Battalion, 39th Infantry Regiment (BCT), we ensure basic individual skill proficiency by emphasizing the preparation of our drill sergeants and structuring the training to maximize learning. Our simple-but-focused approach has yielded consistently above average results as measured by end-of-cycle testing (EOCT), which occurs during the final phase of BCT to certify trainees' proficiency in skill level 1 tasks. EOCT consists of 15 tasks taken directly from Soldier Training Publication (STP) 21-1-SMCT (*Soldier's Manual of Common Task*) and assessed over four stations focusing on tactical movement and camouflage, maintenance and operation of an M4A1 Carbine, combat medical care and evacuation, and land navigation and communication. On test day, cadre external to the battalion grade trainee execution of each task on a GO or NO-GO basis. Trainees have two opportunities to receive a GO on each task. For those who do not meet that standard, we administer a battalion-level test following the final field training exercise. Re-testing continues until the standard is met, and we have yet to encounter a trainee who does not ultimately meet the standard prior to graduation.

Preparation of Drill Sergeants

Our effort to ensure individual skill proficiency begins with the preparation of our drill sergeants. In addition to their institutional certification through the U.S. Army Drill Sergeant Academy, our drill sergeants progress through a two-week brigade-administered certification program prior to arriving at the battalion. This course of study certifies their preparedness to serve as drill sergeants in the 165th Infantry Brigade. With this foundation established, we implement two primary practices designed to sustain drill sergeant proficiency.

The first is simply that we require drill sergeants to conduct EOCT themselves on a semi-annual basis. Not only does this practice refresh their expertise on the tested tasks, but it also clearly communicates command emphasis. We first instituted this battalion-level practice roughly a year ago when EOCT scores across the battalion were subpar. Immediately, the battalion's EOCT performance improved and has continued to improve. The message was received, and we thus continue the practice. Second, companies recertify drill sergeants' readiness to teach EOCT tasks during cycle resets. The company first sergeants oversee this process, and the battalion command sergeant major spot-checks to ensure it is done to standard. The result of these efforts at both battalion and company level is drill sergeants who are

A drill sergeant with 3rd Battalion, 39th Infantry Regiment demonstrates to trainees how to maintain and employ an M4 series Carbine.

prepared to effectively teach individual skill proficiency and succeed on EOCT.

Structure Training to Maximize Learning

We deliberately structure our training for EOCT to maximize learning. While companies maintain the flexibility to train for EOCT at specific times and places of their choosing, several principles are common to all and underlie the battalion's overall approach. First, we adopt a training approach that emphasizes retrieval practice. Retrieval is simply pushing trainees to recall how to conduct a task from memory, which is what they will have to do on test day. Cognitive psychologists recognize that retrieval — especially done repeatedly in spaced out sessions — is a highly effective tool for learning.[2] We achieve this with EOCT preparation by using practice testing as a learning tool. Progress is often slow at first, but repeated retrieval practice ultimately leads to better preparedness for EOCT.

The second principle emphasized across the battalion is mixing EOCT training with other training. This is a teaching technique scholars refer to as interleaving.[3] Mixing up practice embeds what is learned more deeply into the brain. In the context of BCT, concurrent training while at marksmanship ranges or other training events is a great way to interleave EOCT practice with other skills practice. Like the principle of retrieval, the use of interleaving will make progress feel initially slow, but it will be more effective for long-term learning than massed practice.

By exposing trainees to EOCT testing conditions early and often, we give them the opportunity to become more confident in their ability to succeed on test day. The result is a better prepared trainee and, ultimately, a better Soldier for the operational force.

The final principle underpinning our EOCT approach is to train under testing conditions. We replicate testing conditions during training. This builds trainee confidence in their ability to succeed on test day. Exposing trainees to testing conditions early and often reduces uncertainty and grants a degree of control over their performance in that environment. The result is an increase in what psychologists refer to as self-efficacy, which is an individual's belief in their capacity to succeed at a given task.[4] High self-efficacy has long been associated with enhanced performance across multiple contexts, including workplace environments, educational settings, and athletic endeavors.[5] By exposing trainees to EOCT testing conditions early and often, we give them the opportunity to become more confident in their ability to succeed on test day. The result is a better prepared trainee and, ultimately, a better Soldier for the operational force.

Preparing drill sergeants and structuring training to maximize learning are the primary ingredients for producing BCT graduates with the individual skill proficiency necessary for large-scale combat operations. This formula has yielded positive results in our battalion's performance on EOCT. Ours is a simple approach to a vital mission here at the Army's flagship initial entry training center. We aim to make American Soldiers who are disciplined, fit, and have the basic skills needed to survive on the battlefield of 2030. Our Army and nation demand it.

Notes

[1] Field Manual 3-0, *Operations*, October 2022.

[2] Peter C. Brown, Henry L. Roediger III, and Mark A. McDaniel, *Make It Stick: The Science of Successful Learning* (Cambridge, MA: Harvard University Press, 2014), Chapter 2.

[3] Ibid, Chapter 3.

[4] Albert Bandura, "Self-efficacy: Toward a Unifying Theory of Behavioral Change," *Psychological Review* 84/2 (1977): 191-215.

[5] Alexander D. Stajkovic and Fred Luthans, "Self-Efficacy and Work-Related Performance: A Meta-Analysis," *Psychological Bulletin* 124/2 (1998): 240-261.

LTC Brian Forester currently commands 3rd Battalion, 39th Infantry Regiment at Fort Jackson, SC. A career Infantry officer, he has served in a variety of assignments in both operating and generating force units.

CPT Nikita Hooks currently command C Company, 3-39 IN. A logistics officer, she most recently served with the 3rd Infantry Division at Fort Stewart, GA.

OPERATION OVERLORD:
Proving the Viability of the Army's Operating Concept

MSG DAVID R. CHADBURN

On 6 June 1944, the Allied forces embarked on one of the greatest military feats in history. Operation Overlord, the code name for the Allied invasion of Normandy, France, was revolutionary in its scale, complexity, and integration of multinational air, land, and naval capabilities.[1] The lessons learned from this operation are evident in the U.S. Army's present-day warfighting doctrine. In October 2022, the U.S. Army updated its operating concept, transitioning from unified land operations to multidomain operations (MDO).[2] While the Army's MDO concept aims to ensure success against peer adversaries on current and future battlefields, it has received its share of vitriol from critics emphasizing its highly conceptual nature. In a 2020 article, LTC Amos Fox argued that MDO doctrine fails to adequately describe its concept and application of dominance.[3] In addition, MAJ Jesse L. Skates identified that critics often argue that MDO pertains primarily to echelons above division and fails to define its application for the bulk of the Army's fighting formations.[4] Regardless of these criticisms, the MDO principle of unified action, its tenets, and its imperatives enabled Operation Overlord's success as a joint, multinational, multidomain operation, proving the viability of the Army's MDO concept to achieving victory on future battlefields.

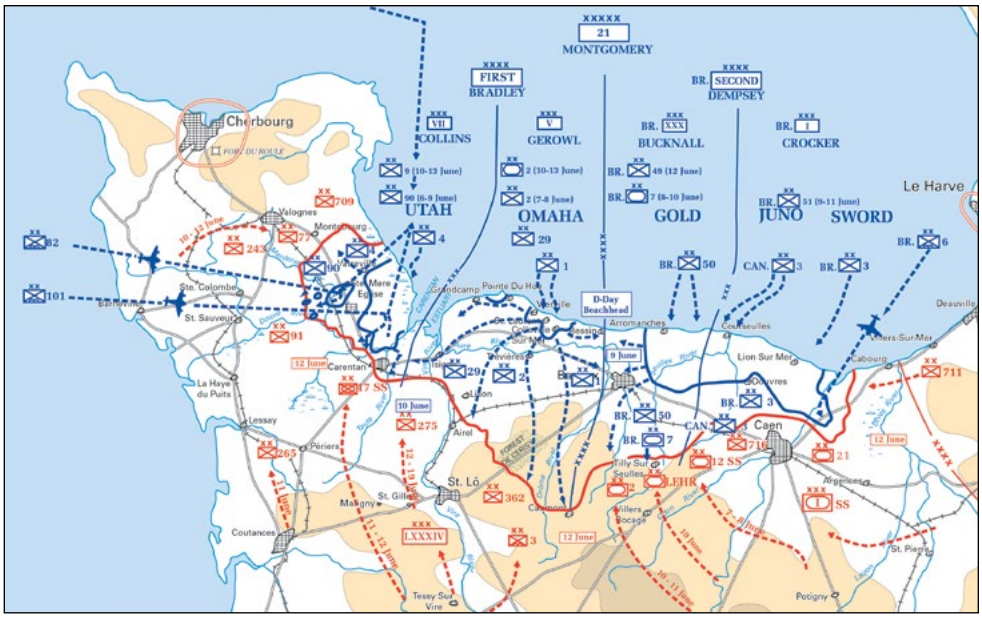
Unified Action

Unified action is foundational to success in MDO and involves synchronizing and integrating the activities of the collective force toward common objectives.[5] Operation Overlord consisted of a conglomerate of forces operating under the command of the Supreme Allied Commander, GEN Dwight Eisenhower.[6] Through his staff and subordinate commanders, GEN Eisenhower coordinated the activities of nine army divisions, and more than 5,000 ships and 13,000 aircraft in support of the largest amphibious assault in history.[7] While unified action enabled success, Operation Overlord also highlighted the role of joint and multinational operations in winning the multidomain fight.

Joint Operations

The U.S. Army could not have achieved success during Operation Overlord without the support of its sister services. The MDO concept acknowledges that joint operations, consisting of two or more services, provide a relative advantage by exploiting capabilities across multiple domains.[8] For example, during Operation Overlord, an extensive air offensive that severely degraded the German Air Force and Army's logistical capabilities preceded the troop landings on the beaches of Normandy.[9] Furthermore, Allied air forces enabled the insertion of three airborne divisions to secure the flanks of the beach landing sites, preventing German reinforcement and counterattacks.[10] Finally, the beach landings required naval

Map — Normandy, 1944 — The Invasion and Operations, 6-12 June 1944
(Courtesy of U.S. Military Academy History Department)



support to secure maritime lines of communication and to transport land forces across the English Channel.[11] In addition to unified action of the joint force, Operation Overlord required the combined efforts of the Allies' multinational force to achieve success.

Navy landing ships unload reinforcements, heavy weapons, and additional supplies on Omaha Beach in Normandy, France, in June 1944. (National Archives photo)

Multinational Operations

Similarly, to the concept of joint operations, Operation Overlord would not have been successful if executed unilaterally. The MDO concept identifies that while multinational operations may present challenges due to cultural, language, and procedural differences, they also provide additional capabilities, strength, and international legitimacy.[12] The Allied air power supporting Operation Overlord utilized the U.S. Eighth, Ninth, and 15th Air Forces; the British Air Force's Bomber Command, and the Canadian Second Air Force to establish air superiority and degrade the German military's capabilities.[13] The Allied maritime force consisted of vessels from six different nations (Great Britain, United States, France, Holland, Norway, and Poland), whose combined efforts provided the capabilities necessary to securely transport the massive land force across the English Channel and onto Normandy's beaches.[14] Finally, the Allied land component for Operation Overlord consisted of five American divisions (the 4th, 1st, and 29th Infantry Divisions along with the 82nd and 101st Airborne Divisions), three British divisions (the 3rd and 50th Infantry Divisions along with the 6th Airborne Division), and the Canadian 3rd Infantry Division.[15] Although no single nation's military had the capabilities and strength necessary for success, the combined might of the multinational Allied force did. Moreover, the employment of the Allied force, congruent with the tenets of MDO, enabled mission success.

Tenets of MDO

According to Field Manual 3-0, *Operations*, the tenets of MDO describe critical elements that leaders must incorporate into operational planning and execution; these are agility, convergence, endurance, and depth. These tenets create opportunities for the friendly force to capitalize on and improve the likelihood of success. During Operation Overlord, the Allies' superior agility, along with their achievement of convergence, greatly influenced mission accomplishment.

Agility

Agility is essential to victory in rapidly evolving battlefields. Agility refers to the ability to shift forces, operations, and activities quicker than the opposition; it allows the friendly force to capitalize on opportunities, conditions, and advantages to improve the likelihood of success.[16] During Operation Overlord, the U.S. 4th Infantry Division exploited conditions to quickly overwhelm the defending German forces and secure the beachhead on Utah Beach, while Soldiers from the 101st Airborne Division had parachuted in during the previous period of darkness and caused mass confusion among the German defenders.[17] The 101st secured the Allies' western flank as well as disrupted and dislodged enemy forces, creating favorable conditions for the 4th Infantry Division to capitalize on.[18] In addition to agility, convergence also influenced the Allies' success.

Convergence

The tenet of convergence is fundamental to the Army's MDO concept. Convergence occurs when capabilities across multiple domains create desired effects, providing windows of opportunity for the friendly force to utilize.[19] Operation Overlord's success was dependent on the convergence of effects across the air, land, and maritime domains. The Allied air campaign established air superiority, degraded enemy logistical capabilities, inserted airborne forces, collected intelligence, and provided air-to-ground attacks.[20] On land, the airborne divisions inserted behind enemy lines, disrupted enemy defenses, and destroyed artillery systems in support of the assault force.[21] In the maritime domain, the Allied naval forces eliminated enemy maritime threats; transported personnel, equipment, and supplies; provided long-range supporting fires; and provided critical logistical support to sustain operations.[22] The Allies' ability to achieve convergence facilitated the liberation of France and Germany's subsequent defeat. Although the MDO tenets created conditions for success, its imperatives were equally important to victory.

Imperatives of MDO

The imperatives of MDO describe the critical actions that the friendly force must take to ensure operational success; these are based upon conditions within the operational

environment and significant threat capabilities.[23] The Army's operational concept includes nine different imperatives to successful operations. The Allies' adherence to the MDO imperatives to "make initial contact with the smallest element possible" and "impose multiple dilemmas on the enemy" created the conditions necessary for success during Operation Overlord.[24]

Make Initial Contact with the Smallest Element Possible

Leaders preserve combat power by making enemy contact with the smallest element. This imperative enables commanders to develop and assess the situation along with the composition and disposition of the enemy force. Developing this understanding then enables employment of the friendly force in its most advantageous manner.[25] During Operation Overlord, the Allies' employment of airborne forces shaped conditions for the main body's success. For example, 1LT Richard Winters and 12 other paratroopers from the 101st Airborne Division destroyed four enemy 105mm guns and more than 50 enemy personnel manning the German defensive position overlooking Utah Beach; this enabled the 4th Infantry Division to quickly secure the Utah beachhead.[26] Likewise, the Allies' ability to create dilemmas for the enemy enabled them to exploit advantages.

Impose Multiple Dilemmas on the Enemy

Imposing dilemmas on the enemy creates advantageous opportunities for the friendly force. Dilemmas disrupt the enemy's decision-making processes, forcing them to prioritize resources against competing requirements.[27] The Allies utilized a robust deception plan in support of operations across multiple domains to create dilemmas for the German forces. Deception operations led the Germans to believe that the Allies' intended landing location was further north and east than the Normandy beaches.[28] The Allies' deception operation was so effective that even as landings were occurring at Normandy, the German High Command remained convinced that a greater invasion would still be attacking to the northeast at Pas de Calais.[29] This dilemma resulted in the failure of the German Army to commit its reserve Panzer divisions to Normandy in time to stop the Allies from securing their objectives and their subsequent breakout eastward.[30] The Allies' successful imposition of dilemmas on the Germans created exploitable opportunities that opened a western front in Europe and heralded the fall of Nazi Germany.

Conclusion

Although untested in the contemporary operational environment, Operation Overlord provides a historical example that supports the Army's shift in operating concept. The operation's overwhelming success as a joint, multinational, multidomain operation proves the viability of the Army's MDO concept to achieving victory on future battlefields. The MDO principle of unified action is essential to synchronizing and integrating the efforts and capabilities of the joint and multinational force. Joint operations provide a relative advantage for the friendly force by enabling the exploitation of capabilities across multiple domains, and multinational operations provide the capabilities, resources, and international legitimacy required to defeat peer adversaries.[31] The tenets of MDO, such as agility and convergence, improve the likelihood of success by creating opportunities for the friendly force to exploit. Finally, the MDO imperatives outline critical actions that ensure operational success.[32] Ultimately, the Allies' success on the beaches of Normandy provides a blueprint for victory in MDO against peer adversaries.

Notes

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[2] Field Manual (FM) 3-0, *Operations*, October 2022, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN36290-FM_3-0-000-WEB-2.pdf.

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[9] Murray, "D-Day: Operation Overlord."

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[28] Bryon Greenwald, "Why Normandy Still Matters: Seventy-Five Years On, Operation Overlord Inspires, Instructs, and Invites Us to Be Better Joint Warfighters," *Joint Force Quarterly* 95 (18 November 2019): 58-69, https://ndupress.ndu.edu/Media/News/News-Article-View/Article/2018929/why-normandy-still-matters-seventy-five-years-on-operation-overlord-inspires-in/.

[29] Murray, "D-Day: Operation Overlord."

[30] Ibid.

[31] FM 3-0.

[32] Ibid.

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Applied History — Tips for Training Troops

LT COL M.W. WHITCHURCH, BRITISH ARMY

"Fools learn from experience. I prefer to learn from the experience of others."

– Otto Von Bismarck

This short article is a reaction to MAJ Shameek De Lancy's important case for the study of military history that appeared in the Winter 2023-2024 issue of *Infantry*.[1] We know the better troops train the less they bleed in war. But how do we learn from military history and use it to train for war? Here are some proven tips for ways leaders can incorporate the study of military history into unit training. They have served me well and continue to be of use.

Tip 1 — Use directed readings with discussion.

Infantry in Battle is an excellent resource. This book, which is available online from Army University Press, is composed of a collection of highly instructive examples of infantry fighting from several armies during World War 1.[2] It is concise, backed with good maps and superb analysis.

How to use: Select one case and have Soldiers read it; when complete, they can then answer designated questions which will then be discussed during an organized discussion — the more participation, the better.

An example: Go to Chapter 17, "Fire of Machine Guns." Invite Soldiers to study examples 1 and 3 along with the conclusion. Give them 40 minutes to read and discuss in small groups, tackling these simple questions:

1. Identify one good lesson from these examples.
2. What were the reasons for the attacker's success in this battle?

When the 40 minutes are up, bring the small groups together for discussion. Ask the small groups to each offer their answers. Decide how to develop the discussion based on what lessons you want Soldiers to take away.

Points to watch: Organize your class into small groups of three or four Soldiers. See that all have a chance to speak. Embed the maps into Powerpoint slides and require the groups to reference them as they provide their answers. (Use laser pointers!) Also watch the time as it often goes too quickly. You could ask Soldiers to read the examples before your class; however, there may be challenges with this as some will not complete the reading ahead of time. It's best to allot 25 minutes to complete the reading, 15 minutes for small group discussion, and then 20 minutes for discussion with the entire group.

Tip 2 — Utilize online video-sharing platforms such as YouTube.

In many ways this tip is similar to the first. The idea is for the class to watch a clip from a movie and discuss. As with the previous tip, after watching the clip, Soldiers should be organized into small groups to prepare answers to designated questions.

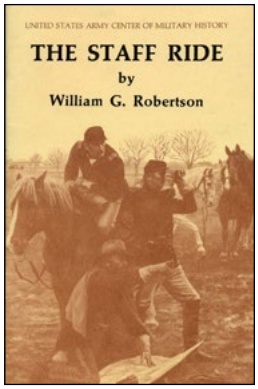
How to use: Introduce the lesson and goals, explain the questions, allow small groups to identify their answers, and then confirm during a class discussion.

An example: Watch Colonel Joshua Chamberlain's speech from the 1993 movie *Gettysburg* where he persuades Soldiers from another battalion to fight with his regiment; a clip can easily be found on YouTube.[3] Questions for this selection could include:

1. Why was Colonel Chamberlain successful? Give examples.
2. What do you see from this leader?

Points to watch: For instructors, it is a good idea to watch this movie from start to finish. When the 20th Maine Regiment comes into the scene, watch how Colonel Chamberlain brings back order and restores morale. This movie is full of good teaching points.

Tip 3 — Examine the terrain on staff rides.



Some readers may already know the value of conducting staff rides, and William G. Robertson's pamphlet, *The Staff Ride*, is an excellent resource.[4] This method of training, however, is only as good as the skill of the instructor. Here are some points to consider:

• Does the ground of the former battlefield tell a story? If you have selected the location with care, it will. Far too often, units will assemble at a site, undergo a lecture that could have been done in a classroom, and then discuss operations but not

Leaders with the U.S. Army Southern European Task Force, Africa, conduct a staff ride at the Military Memorial of Monte Grappa in Italy. (Photo by SSG Abanda Solomon)

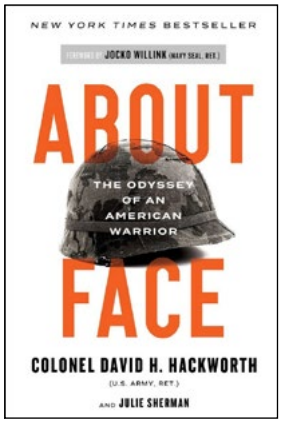
use the ground! You may rightly ask why you are there if the ground is not used.

• Equally, the use of binoculars is rare — yet it can help develop the eye for terrain. Instructors should survey the terrain in preparation for the event. For example, if visiting Manassas National Battlefield Park, the site of the First Battle of Bull Run in 1861, examine the reverse slope where General Stonewall Jackson's troops waited for the attackers. No wonder his brigade was successful!

• After describing the terrain and situation, invite Soldiers to offer their insights. Antietam National Battlefield would provide much discussion. Equally, at Fredericksburg Battlefield, the field of fire by the defending artillery at the southern flank distinctly shows why the attackers failed — clearly less so with Little Round Top at Gettysburg in 1863.

Tip 4 — The case for sound: Use audiobook resources.

When staff colleges and the like issue reading lists, it is unrealistic to expect all will read every book. Part of the problem is not enough time. This is where audiobook resources come in. So, when walking the dog or driving home, try an audio book. This is a clever way to learn.



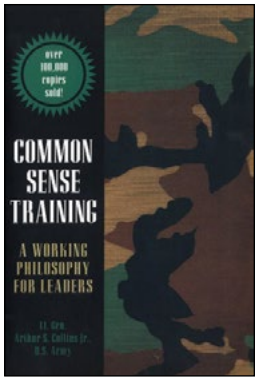
How to use: Provide Soldiers with instructions on how to download a certain book and have them listen to a selected chapter and then answer questions as part of a discussion.

An example: One suggested book is COL (Retired) David Hackworth's *About Face: The Odyssey of an American Warrior*. His recollections as a battalion commander in Vietnam are very enlightening. Frankly, the book is brilliant. I recommend listening to Chapter 22, "Issues and Answers." Only 22 minutes long, it is thought-provoking and gives sobering insights. Then, ask participants to identify two lessons for the Army today as well as a personal lesson. Just watch their reactions. Listen to Hackworth's point about Hamburger Hill or the dangers of careerists in war. This is a must for any army.

Tip 5 — Conduct common-sense training.

In 1981, our U.S. exchange officer sent me to stay with a U.S. engineer battalion for two weeks in Germany. At the time, the book *Common Sense Training* by LTG Arthur S. Collins Jr. had just been republished.[5] This book covers the history of training from 1950-1978. It is the thinking leader's guide to successful training; LTG Collins was certainly gifted.

For example: Using the approach from Tip 1, have the class read Chapter 2, "Common Excuses for Inadequate Training." A suggested question to discuss: How do we tackle these excuses and make our training better? On page 111, LTG Collins describes how the German Army used training films. I have used this tip with great success.



Training Is Everything…

Look to any successful army and the way they trained is often one of the biggest reasons for their success. Following MAJ De Lancey's article, I wanted to share these applied history tips and hope they help you as they have helped me.

Notes

[1] MAJ Shameek De Lancey, "The Importance of Studying Military History," *Infantry* 112/4 (Winter 2023-2024): 48-50.

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[5] LTG (Retired) Arthur S. Collins Jr., *Common Sense Training: A Working Philosophy for Leaders* (Novato, CA: Presidio Press, 1978).

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Mission Command Through the Eyes of Wanat

SFC KRISTIN D. ROGERS

Mission command regarding how we fight and win wars has always been a function and philosophy essential for success in conflicts. The defining principles of mission command have changed over time from the 1800s' Prussian doctrine, and they continue to be modernized through lessons learned. Still, it wasn't until GEN Martin E. Dempsey, the 18th Chairman of the Joint Chiefs of Staff, published the Mission Command White Paper in 2012 that three fundamental principles involving the execution of mission command were established with the intent to be immediately implemented across the force.[1] The release of Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, in May 2012 further expanded upon these, identifying six principles of mission command. The updated 2019 version now includes seven.

It is common knowledge that the Battle of Wanat, which occurred on 13 July 2008, is one of the most scrutinized and studied within the Army and its institutional learning environments due to the events that occurred and the decisions which led up to them. Ripples from this battle may have even inspired the modern-day principles of mission command. These seven principles — *competence, mutual trust, shared understanding, commander's intent, mission orders, disciplined initiative, and risk acceptance* — can be better understood by analyzing the Battle of Wanat through the lens of the Army's vision of modern mission command.

All seven principles of mission command are important to technically and tactically achieving an objective, but the basic principle to accomplish it is *competence*. ADP 6-0 states that education provided as part of institutional and unit exercises utilizing repetitive, realistic, and challenging training aids in the development of teamwork, trust among the organization, and a mutual understanding of expectations from commanders to the lowest level of personnel, which reinforce the unity of effort to develop the *competence* required for mission success.[2]

There is no doubt that the Soldiers of Chosen Company, 2nd Battalion, 503rd Parachute Infantry Regiment, were prepared to implement their skills competently throughout their 15-month deployment and during the Battle of Wanat. At their combat outpost (COP), some factors helped Chosen Soldiers successfully hold their position and prevent further loss of life when the insurgent attacks ensued. The days leading up to the firefight were crucial in their defense against the insurgents as they overcame multiple hindrances to construct a perimeter using concertina wire obstacles, sandbags, and HESCO barriers while lacking proper equipment and supplies, including drinking water, to continue to work in the over 100-degree temperatures. Utilizing their knowledge from training, their experience from fighting 48 engagements with the enemy, a strategically engineered COP design, and their direct leadership's common sense to ensure their Soldiers' overall well-being, the Soldiers were still able to create an impenetrable main perimeter and provide cover and concealment for key positions within the COP.[3] The platoon leader and platoon sergeant ensured mounted weapon system locations had the maximum amount of munitions on hand, and their Soldiers were in a ready position before daybreak every morning. An analysis of the battle confirmed that joint efforts, bravery, and *disciplined initiative* by taking on roles or conducting operational needs prudent to survival or command amongst the paratroopers, engineers, Marines, and Afghan soldiers present were the essential ingredients to the successful defense of the COP.[4] Even though dealing with the loss of life, injuries, and strategic issues with personnel placement, they could defend their position until reinforcements arrived.

Key tasks were required to meet the *commander's intent*, and upon receipt of the mission, the task force commander

Pictured is the northern fighting position of Observation Post Topside at Vehicle Patrol Base Kahler in July 2008. (U.S. Army photo)

View of Wanat combat outpost looking east from mortar position on 9 July 2008. (Photo from* Wanat: Combat Action in Afghanistan, 2008, *Combat Studies Institute Press)

communicated conditions needed to complete *mission orders*. These tasks included separation of the anti-Afghanistan forces from their influence on the locals, which would allow Americans to build relationships with Afghan leaders, and stabilization of the area through coordinated efforts using lethal and nonlethal operations, which included reconstruction projects and engagements with the local populace to ensure healthy and continued mutual efforts.[5] Outside of the COP, relations with the locals were strained and lacked *mutual trust* and *shared understanding*. The Afghans closely watched the Soldiers' activities as they attempted to fortify their area of operations, and local leaders would not entertain a meeting with the platoon leader. American forces were not invited to meetings, and women and children were nowhere to be found in the vicinity.[6] These suspicious behaviors were reported, though not taken seriously. All personnel recognized a *risk acceptance* on the COP as the behaviors signaled a threat of attack, and their position in the valley left them vulnerable.

Though Chosen Soldiers trusted in their organic unit, there were many instances where trust was questionable both inside and outside the force. *Mutual trust* is essential to successful mission command, and *shared understanding* is supported and derived by the trust through effective communication at all levels.[7] Chosen Company shared hardships and dangers, and the level of trust among the Soldiers was admirable. Regarding the higher echelons of command, they trusted in the capabilities of Chosen Company to accomplish the *commander's intent* of "gaining and maintaining the support of the Afghan population" due to the unit's past successes in contact scenarios and the significant amount of personnel assigned compared to other locations scattered throughout Afghanistan.[9] However, erosion of trust in the higher command team from Chosen Company increased as basic needs like water were not met when initially relocating to the COP. Higher headquarters was supposed to provide intelligence, surveillance, and reconnaissance (ISR) assets to monitor the region while Chosen Company established its presence for the first three days of arrival. As priorities shifted for the company's battalion and brigade headquarters, each of those three days went without the full monitoring of the Waygal Valley, and it is unknown whether the *risk acceptance* of not reassigning ISR assets would have detected the presence of enemy forces before the deadly engagement.

In conclusion, the seven principles of mission command are found when analyzing the Battle of Wanat through the Army's modern understanding of the principles. The *competence* of the Chosen Company Soldiers and attached personnel is considered the most impactful reason they were successfully able to hold their position with proficiency and *disciplined initiative*, resulting in no loss of continuity through a single point of failure. It can be strongly surmised that this is why many survived the attack while waiting for reinforcements. They held a *shared understanding* of their *commander's intent* and attempted to follow *mission orders* in an environment where adversity and *risk acceptance* resided in almost every aspect of establishing the COP. Chosen Company struggled with gaining the trust of the Afghan nationals and with the ability to trust their higher echelons of command. However, they never wavered on the *mutual trust* they had between each other and their direct lines of leadership. The Battle of Wanat's lessons learned through the lens of the principles of mission command have only made the U.S. Army more prepared for the future.

Notes

[1] COL (Retired) James D. Sharpe Jr. and LTC Thomas E. Creviston, "Understanding Mission Command," *Army Sustainment* (July-September 2013): 11.

[2] Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces*, July 2019, 1-7, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN34403-ADP_6-0-000-WEB-3.pdf.

[3] U.S. Army Combat Studies Institute (CSI) Staff, *Wanat: Combat Action in Afghanistan, 2008* (Fort Leavenworth, KS: CSI Press, 2010), 197.

[4] Ibid, 198.

[5] Ibid, 8.

[6] Ibid, 211.

[7] ADP 6-0, 1-9.

[8] CSI Staff, *Wanat: Combat Action in Afghanistan*, 35.

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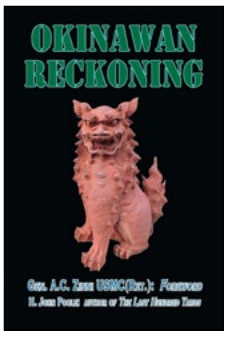
Book Reviews

Okinawan Reckoning



By H. John Poole

Emerald Isle, NC: Posterity Press, 2022

Reviewed by LTC (Retired) Jesse McIntyre III

The fight to take Okinawa was the last great battle of World War II. The 82-day battle, which occurred from 1 April to 22 June 1945, involved more than half a million American and Japanese troops, resulting in over 150,000 estimated Japanese and American casualties. H. John Poole — retired Marine, renowned small unit tactics instructor, and author of *Peleliu Progress*, *The Iwo Alamo*, and *Super Squad: The Now Missing Component* — tells the story of the deadliest battle of the Pacific War in *Okinawan Reckoning*. He goes beyond the traditional description of campaign battle in providing an unprecedented analysis of the nearly three-month battle from a small unit perspective and its timely relevance for today.

Poole begins with introducing readers to concepts such as second-generation and third-generation warfare, retreat combat, and the differences between Western and Eastern views of war. He argues Japanese forces utilized third -generation mobile warfare, flexible defense, and tactical withdraw in wearing down American forces on the island. Japanese forces negated our fires and armor by using rear slope positions and connecting fortified fighting positions. Layers of hidden fortified positions, spider holes, interlocking fires, preregistered kill zones — along with the ability to counterattack behind American lines — made Okinawa a nightmare for our forces. It is no surprise that American forces experienced more than 33,000 non-battle casualties.

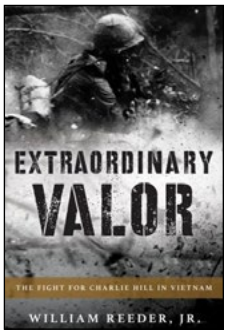
Poole counters a perception of many that Okinawa was purely a tactical battle of attrition. His research unveils that Japanese strategy for Okinawa was strategic in nature. The war in Europe had ended so there was a desire of many Americans to return to a peacetime America. Japan's goal was to prolong the war long enough to gain a more desired agreement.

Poole states the Battle for Okinawa quickly evolved into a small unit fight as Marines and Soldiers quickly learned that small groups of men were required to eliminate Japanese positions one by one using a variety of tactics. Poole's research indicates grenades, knee mortars, and flamethrowers became the weapons of choice on Okinawa. In the end, Army and Marine Infantrymen quickly learned how to identify and neutralize Japanese positions in securing the island.

Poole also warns that any future conflict will find us against an adversary utilizing the third or fourth generations of warfare. We must make the transition from our current second generation of warfare and be prepared to fight these next generations. Poole informs us that it will not be easy because of our overreliance on technology and desire for a "corporate approach" to combat.

The strength of *Okinawan Reckoning* is Poole's ability to capture the detail and brutality of the battle from commanders and Infantryman alike on both sides. Present-day small unit combat leaders will find Chapter 22, "New Role for the Tiny Infantry Element," especially interesting and relevant in preparing for future conflict. *Okinawan Reckoning* contains many grainy graphics that may require readers to use outside sources to gain an understanding of battle lines and geographical locations. However, this book remains a must for any combat leader's reading list and would make an excellent addition to the library of any historian or student with an interest on the subject.

Extraordinary Valor: The Fight for Charlie Hill in Vietnam



By William Reeder Jr.

Lanham, MD: The Rowman & Littlefield Publishing Group, 2022

Reviewed by LTC (Retired) Rick Baillergeon

In the spring of 1972, the United States' involvement in the Vietnam War had significantly curtailed. Assistance primarily consisted of air support and advisors serving with South Vietnamese units. Seeking to exploit the diminished role of the United States, the North Vietnamese launched their largest offensive of the war. Known as the Easter Offensive (Nguyen Hue Campaign), it began on 30 March and involved more than 130,000 North Vietnamese regulars conducting a three-pronged invasion of South Vietnam.

As intelligence began to pick up significant enemy movement, South Vietnamese forces began to occupy defensive positions to repel any enemy attacks. In anticipation that Kontum City in the Central Highlands would be a key enemy objective, the South Vietnamese tasked its 11th Airborne Battalion to meet that threat. In the beginning of April 1972, soldiers from the 11th began to occupy defensive positions northwest of Kontum City. Specifically, they began preparing a defense along "Charlie Hill," one of a series of positions

along "Rocket Ridge" outside of the city. Serving as an advisor for the 11th Airborne Battalion was Special Forces MAJ John Duffy. William Reeder's superb volume *Extraordinary Valor* details the fight for Charlie Hill and the incredible heroism of the 11th Airborne Battalion and MAJ Duffy (who earned the Medal of Honor for his actions) in this gallant effort.

There is no one more fitting or equipped to tell this story than Reeder for several reasons. As a Cobra helicopter pilot who supported the ground forces on Charlie Hill, he is clearly familiar with the battle. For his exceptional service during the Vietnam War, Reeder was awarded a Silver Star, two Distinguished Flying Crosses, and three Purple Hearts. Additionally, he was a prisoner of war (POW) in Vietnam for nearly a year. Finally, Reeder is a superb author whose first volume, *Through the Valley,* detailed his POW experience and was highly acclaimed by both readers and critics. In total, to use an old cliché, he has clearly walked the walk and can talk the talk.

For those not familiar with the Battle of Charlie Hill, let me provide a brief overview. On 2 April 1972, the South Vietnamese Army's 11th Airborne Battalion began defensive preparations on Charlie Hill to repel any enemy attacks into Kontum City. The following day, a North Vietnamese Army regiment began its attack. For almost two weeks, the 11th — greatly undermanned and outgunned — was encircled and at the brink of being overrun. Yet, the unit held ground, inflicting well over 1,000 casualties and greatly contributing to a North Vietnamese invasion withdrawal. The cost for the 11th Airborne Battalion was incredibly high. When it finally escaped from Charlie Hill, there were only 36 members of the 471-man battalion left. The rest were killed, captured, or missing in action. It is an incredible story.

In telling the above account, I believe Reeder achieves four main purposes. The first is he draws much-needed attention to a battle that has been greatly overlooked over the decades. Based on when and where the battle took place, it has received minimal treatment by historians. It is hoped that this volume, coupled with the presentation of the Medal of Honor to MAJ Duffy on 5 July 2022, will expose the gallantry of the 11th Airborne Battalion and MAJ Duffy to a far greater audience.

The second purpose he achieves is to highlight the professionalism and competency of the South Vietnamese Army. The Battle of Charlie Hill is a testament to the mental and physical fortitude of the soldiers of the South Vietnamese Army. Throughout the volume, Reeder highlights the performance of these soldiers and the tactical proficiency of their leaders.

Extraordinary Valor is also a volume which perfectly highlights the human dimension of warfare. In particular, Reeder is able to superbly depict the bond that forms between soldiers during battle. In the case of Charlie Hill, he focuses on the bond between MAJ Duffy and the 11th Airborne's senior leadership, specifically the battalion executive officer (who later assumed command when the battalion commander was killed), Major Lê Văn Mễ. The relationship they forged on Charlie Hill continues today. In fact, Mễ was front and center when Duffy was presented his Medal of Honor.

Finally, this volume pays tribute to MAJ Duffy's heroism. There is no question that readers of *Extraordinary Valor* will completely understand why Duffy was awarded the Medal of Honor for his actions on Charlie Hill. The author details his heroic actions throughout the fight. During the battle, he was wounded twice but continued to do everything he could to save the lives of 11th Airborne Battalion soldiers. This included calling in air strikes, spotting for artillery, providing tactical advice to the battalion's leadership, coordinating rescue and aid transportation, and perhaps, most importantly, circulating the battlefield and offering hope and boasting morale. MAJ Duffy's actions were truly remarkable, and Reeder aptly articulates those in *Extraordinary Valor*.

In a book as superb as this, it is a challenge to single out its many strengths in this review. However, I believe there are three which step to the forefront and greatly contribute to the success of the volume. The first is the outstanding readability of the book. Reeder achieves this through his ability to depict the emotions of the battlefield and to concisely detail the key actions of the battle. Reeder's decision to reconstruct dialogue during the fight adds considerably to readability and portraying the human dimension.

I found the second key strength to be the "extras" Reeder added to the volume to promote understanding and again depict the human dimension of fight. These include an excellent photo section with most of the selections taken from personal collections, a group of maps and sketches displaying the big picture and Charlie Hill itself, and a highly beneficial glossary. Most interesting is the epilogue, which updates readers on what became of the key figures of Charlie Hill.

The final strength I would like to address, and one that relates to the previous two, is the incredible amount of research Reeder conducted for this book. Reeder addresses his sources in his "Author's Notes" section when he states, "It is a true story based on investigation into original source documents and a myriad of other reference materials, as well as my own experience flying a Cobra attack helicopter in support of the 11th Airborne Battalion on the final day of the fight. The research also entailed many hours of interviews with participants, extending over a period of years."

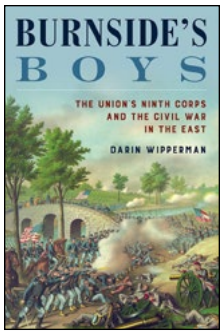
In summary, Reeder has once again crafted a superb book tied to the Vietnam War. It is a book which is superbly written, incredibly researched, and powerful in scope and message. This is a volume which achieves many things including bringing to light a forgotten battle, advocating the performance of the South Vietnamese Army, highlighting the human dimension of war, and paying tribute to the soldiers of the 11th Airborne Battalion and to MAJ John Duffy. I have no question readers will find *Extraordinary Valor* to be an extraordinary book.

Burnside's Boys: The Union's Ninth Corps and the Civil War in the East

By Darin Wipperman

Essex, CT: Stackpole Books, 2023

Reviewed by LTC (Retired) Jesse McIntyre III



Darin Wipperman — journalist, lecturer, and author of *First for the Union: Life and Death in a Civil War Army Corps from Antietam to Gettysburg* — continues his remarkable study of Civil War military history in *Burnside's Boys: The Union's Ninth Corps and Civil War in the East*. In a remarkably well-researched volume, Wipperman draws on a range of primary source material — personal accounts, Confederate and Union records, and military correspondence — in providing an unprecedented view of the Ninth Corps' role during the Civil War.

Wipperman introduces us to the Ninth Corps' key leaders and regiments during the Carolina Expedition. He masterfully uses Soldiers' letters and unit correspondence in painting a picture of units and personnel. Wipperman provides readers realistic descriptions of Civil War campaigning and bivouacking as well as the horrors of combat. Readers will feel the fatigue of conducting endless marches, fording streams, and bivouacking without cover in the pouring rain and relentless heat, all while experiencing the pangs of hunger and thirst in worn-out uniforms and shoes.

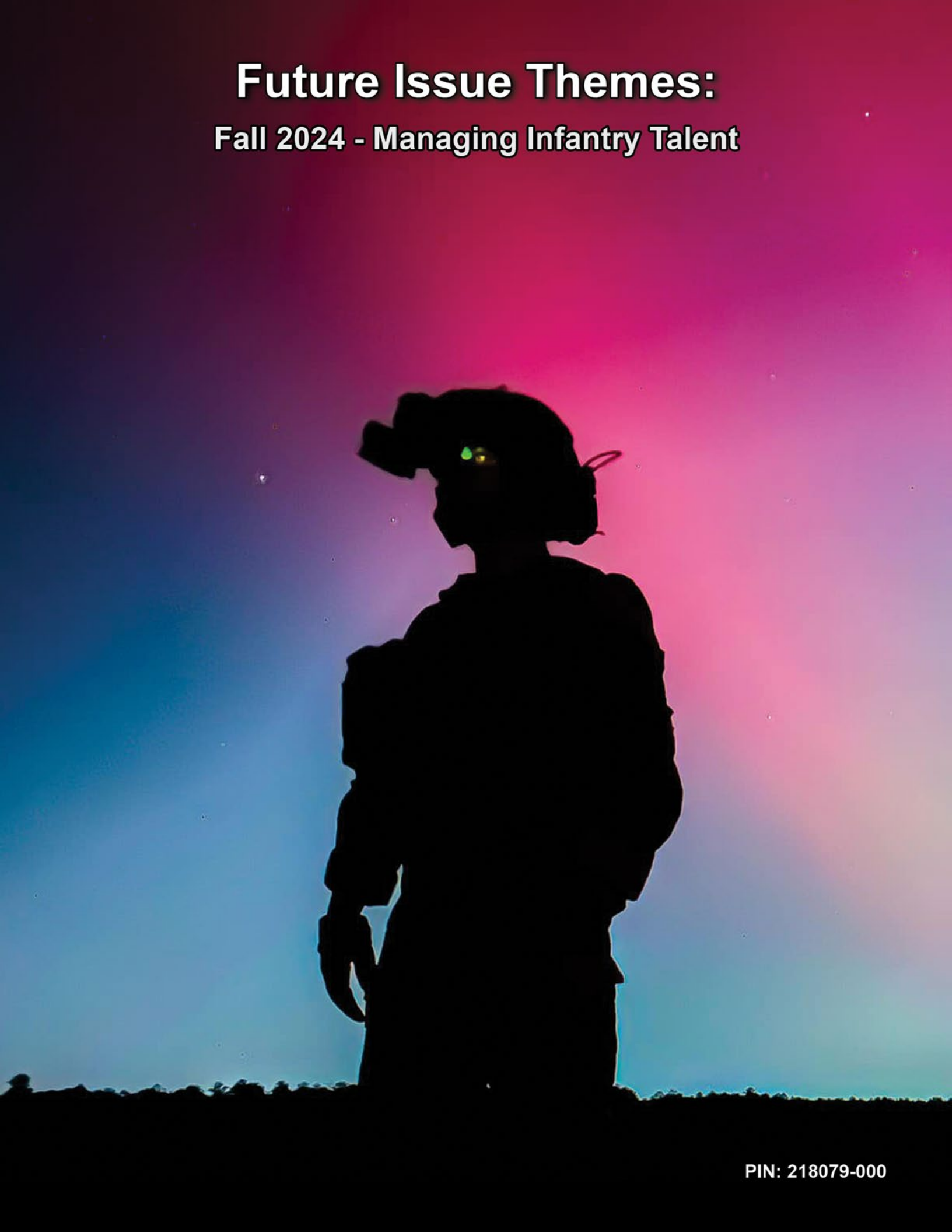
Burnside's Boys goes beyond describing the Ninth Corps' role in the Civil War, however; it is a case study on leadership. General George McClellan's focus on gaining glory for himself at the sacrifice of winning decisively on the battlefield makes him the central villain in the story. His inability to convey clear and concise orders to subordinates, indecisiveness, and vanity may have been more detrimental to the Army of the Potomac than the Army of Northern Virginia. Wipperman reminds us that there was enough blame to go around as subordinate commanders were often slow or failed in executing orders, while others simply failed in gaining an understanding of what was to be accomplished. As a result, Ninth Corps units went into headlong assaults against fortified Confederate Army positions in uncoordinated attacks. The Union Army missed several opportunities in defeating General Lee while experiencing horrific loses in the process.

Wipperman argues McClellan's biggest failure was a missed opportunity at Antietam to defeat Lee's Army of Northern Virginia. McClellan had received a copy of Lee's Special-Order Number 191 that laid out the Army of Northern Virginia's plan for the Maryland Campaign. Overestimating the size of Lee's Army and fearing a Confederate counterattack, McClellan failed to seize the initiative in attacking Lee's army or reinforcing success during the battle. His final mistake was allowing Lee and the Army of Northern Virginia to withdraw unmolested back to Virginia.

The strength of *Burnside's Boys: The Union's Ninth Corps and the Civil War in the East* is Wipperman's extensive research, perspectives of the common soldier, and a writing style that conveys the privation and experiences of campaigning during the Civil War. Readers may find the few maps depicting unit movements a challenge at times; this is especially true for Ninth Corps major engagements. This work provides a comprehensive examination of the Ninth Corps' role in the Civil War, and I recommend it to any historian or reader with an interest on the subject.

Future Issue Themes:

Fall 2024 - Managing Infantry Talent



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