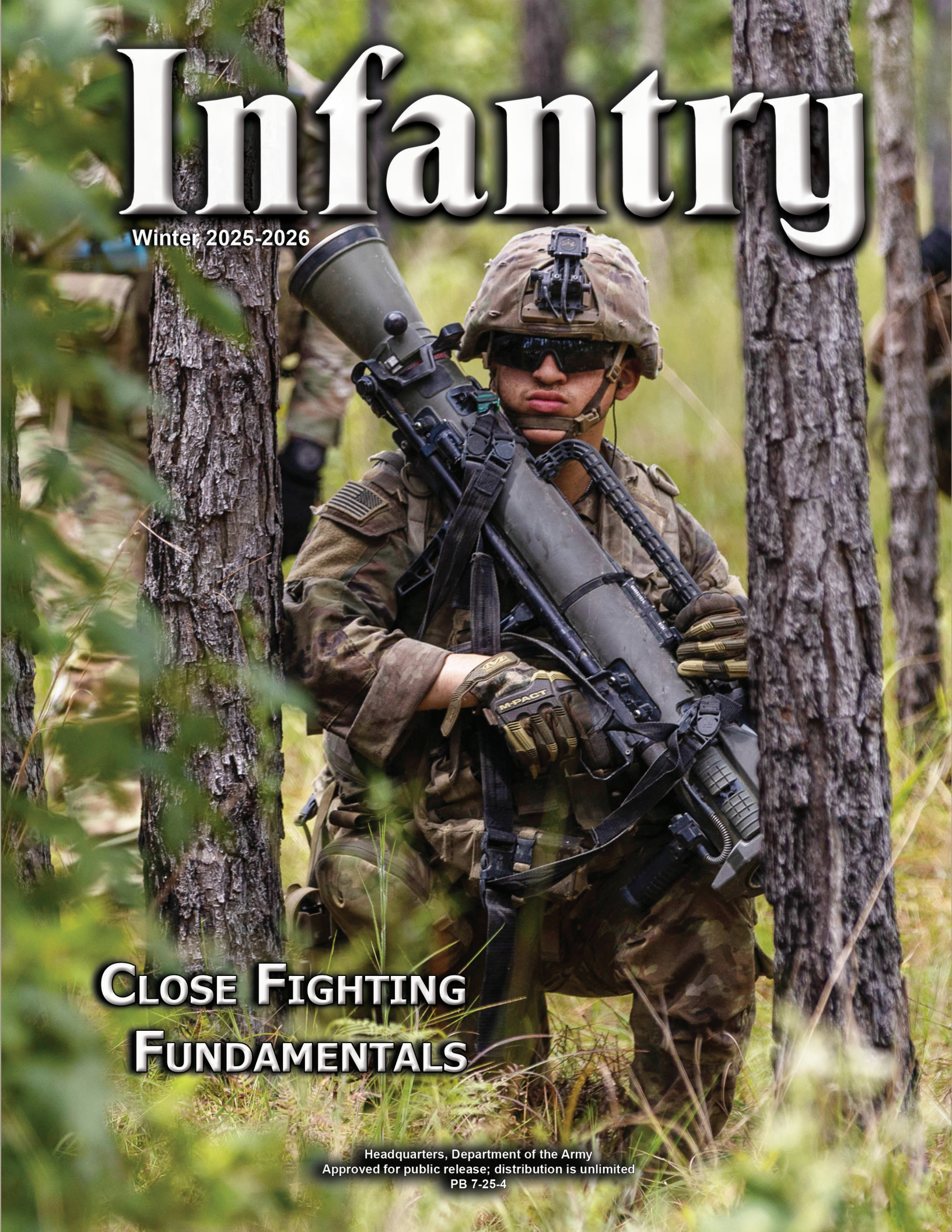

Infantry

Winter 2025-2026

Close Fighting Fundamentals

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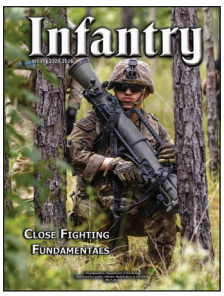

FRONT COVER:
A Soldier assigned to 2nd Battalion, 14th Infantry Regiment, 2nd Brigade Combat Team, 10th Mountain Division, conducts training at the Joint Readiness Training Center at Fort Polk, LA, on 15 August 2025. (Photo by SPC Alyssa Norton)

BACK COVER:
Soldiers in the 2nd Brigade Combat Team, 10th Mountain Division fire a 60mm mortar during the unit's Joint Readiness Training Center rotation at Fort Polk on 15 August 2025. (Photo by SPC Mariah Aguilar)

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.

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Commandant's Note

BG PHILLIP J. KINIERY

As 2025 draws to a close, we continue to reflect on our proud heritage as we press forward in transforming into a more lethal, agile, and capable fighting force. The Infantry's story is one of constant adaptation — a legacy of grit, sacrifice, and innovation that spans from the trenches of past wars to the evolving multidomain battlefield of today. This year reminded us that transformation is not merely about modernization of equipment or technology, but about the continuous sharpening of the Soldier's mind, body, and spirit to meet the demands of future conflict.

In September, I had the distinct honor of presenting GEN (Retired) Vincent K. Brooks, CSM (Retired) Gerald "Gerry" Klein, and Mr. E. Paul Voorhees with the Doughboy Award for their lifelong contributions to the U.S. Army Infantry. The award, presented annually on behalf of all Infantrymen past and present, recognizes exceptional leaders who embody the highest standards of service and dedication. These individuals represent the essence of what it means to be Infantry — selfless service, humility, and an unyielding commitment to mission accomplishment. Their example reminds us that while technology and doctrine evolve, the character and leadership of the Infantry Soldier remain the foundation of our strength.

Presented during the week of the Maneuver Warfighter Conference, this year's Doughboy Award ceremony carried forward that same spirit of excellence into an event that explored the Army's most pressing challenges — how to deliver capabilities at speed and scale, maintain readiness, and harness emerging technologies to ensure dominance on future battlefields. The conference also underscored the importance of realistic training that reflect the complexities of contemporary battlefields, ensuring our Soldiers are ready to close with and destroy the enemy anytime, anywhere, under any conditions.

The articles in this edition of *Infantry* run the gamut of these topics, ranging from discussions on training considerations and doctrine proposals to recommendations on avoiding data overload and balancing integration and synchronization in planning.

The first article of the issue is one I find particularly valuable. In "Close Fighting Fundamentals: Tactical-Level Training Considerations to Prepare for Uncertain Future Battlefields," LTG Gregory K. Anderson, the commanding general of the XVIII Airborne Corps, shares supplemental training guidance to help leaders envision what types of close-combat skills Soldiers will need to be able to fight and win future wars. "Knowing what you want your formation to be able to do is the first step to getting your training methodology correct," he succinctly notes. While also incorporating additional context focusing on large-scale combat operations, his subsequent considerations are based on his experiences in Iraq and Afghanistan and mostly learned from NCOs who were experts in the fundamentals of warfighting. Our Army must continue to cultivate robust teams and leaders who can think critically, demonstrate mastery of fundamental skills, and excel in night operations to prepare for the uncertainties and diverse challenges we will face on future battlefields.

Another article I'd like to highlight is "Ivy Raider 'Moneyball for Gunnery,'" which is Part 2 of a series that leaders in the 1st Stryker Brigade Combat Team, 4th Infantry Division wrote about their efforts to leverage data analytics to identify factors that could help improve crew performance during Stryker gunnery. The first part, which ran in last Winter's edition of *Infantry*, was recently recognized by the Chief of Staff of the Army as one of his articles of the year. Part 2 analyzes the importance of platform-trained master gunners, Stryker embedded trainers, and gunner selection on Table VI qualification. I applaud the authors' innovative approach, which aims to increase crew lethality while also saving time and resources.

And finally, I want to extend my heartfelt thanks to CSM Jason Dein for his unwavering dedication and exemplary service as he retires after more than 28 years of distinguished service to the Army and our Infantry. I also warmly welcome CSM Christopher K. Donaldson, who joins the Infantry School team after serving as the senior enlisted advisor for the Joint Multinational Readiness Center in Germany.

As we move into 2026, our focus remains steadfast: to develop leaders of character, to field formations that can fight and win in any domain, and to preserve the proud heritage of the Infantry for generations to come. We owe it to those who came before us, to those we lead today, and to those who will one day wear the blue cord.

I am the Infantry! Follow me!

Close Fighting Fundamentals:

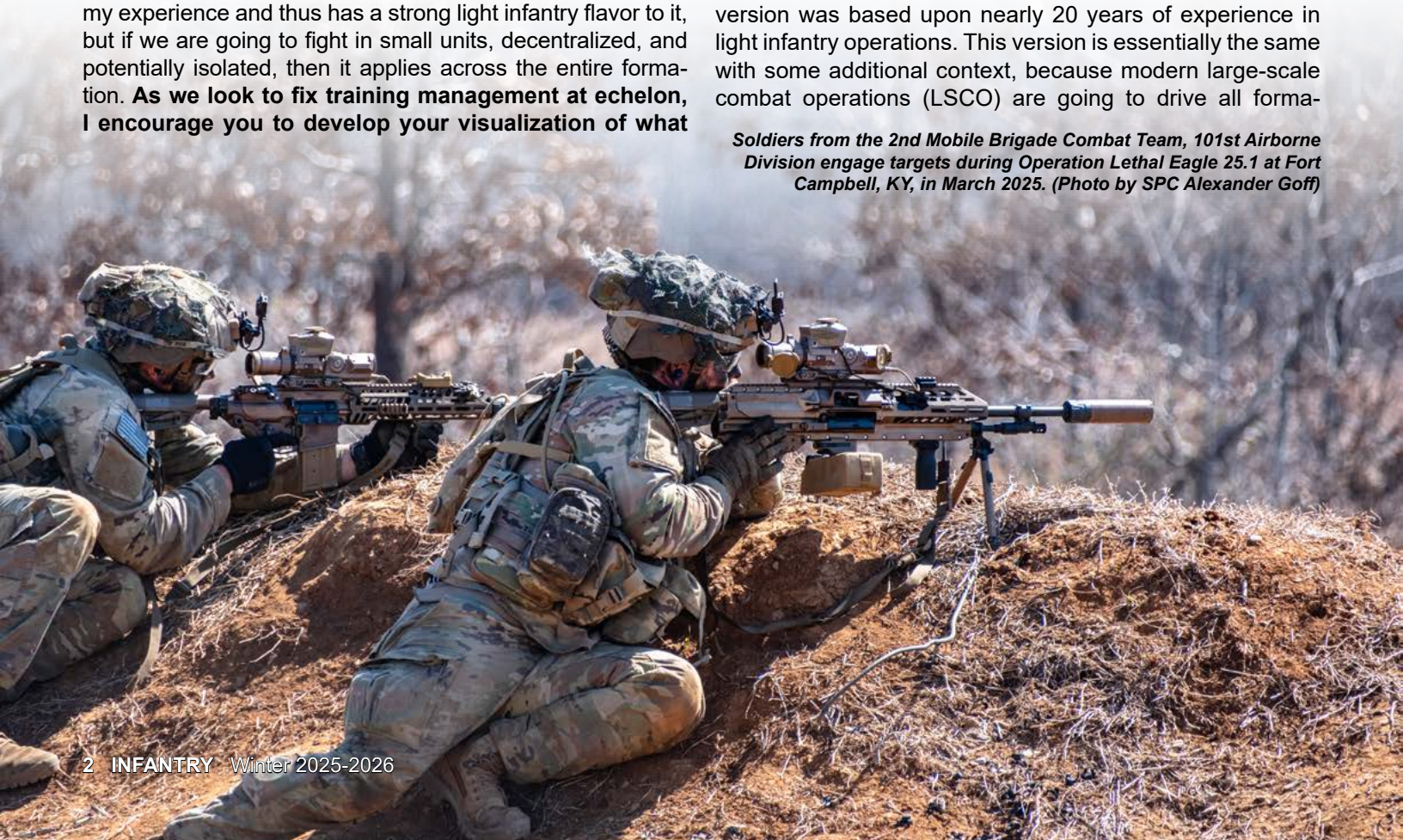
Tactical-Level Training Considerations to Prepare for Uncertain Future Battlefields

LTG GREGORY K. ANDERSON

Editor's Note: *This article was adapted from LTG Anderson's Command Note #7 — Enduring Training Guidance Supplemental. Although it was written for XVIII Airborne Corps Soldiers, LTG Anderson provides valuable insights that can benefit all Infantry leaders as they plan and execute training.*

The XVIII Airborne Corps will be called to fight, with little advance warning, to a conflict and an enemy for which we do not yet know. Presently, we do not have the clarity, precision, or detail in war plans and contingency plans to know specifically what tasks to train for or what conditions to train against. **As such, our Corps needs to possess strong teams, leaders that can think, a mastery of basic skills, and excellence in night fighting to hedge against the uncertainty and full spectrum of what we could (and will) be called to execute.** This article is meant to help you visualize the types of skills we need to develop at the tactical level as part of the hedge against uncertainty. **THIS IS NOT TRAINING GUIDANCE FOR FIRE TEAMS, SQUADS, and PLATOONS.** It is based on my experience and thus has a strong light infantry flavor to it, but if we are going to fight in small units, decentralized, and potentially isolated, then it applies across the entire formation. **As we look to fix training management at echelon, I encourage you to develop your visualization of what you want your formation to train towards.** Be it artillery tables, forward arming and refueling point (FARP) operations at night, expeditionary logistics, military police (MP) security missions, chemical decontamination, or unmanned breaching operations, commanders must be able to visualize and then describe the training end state to subordinates for them to have a shared reference point as they plan and execute training. After you read this supplemental, ask yourself if it helped you visualize what our training outcomes should look like to be ready for combat. This is "my" description of what I want our formations who might engage in close fighting to be able to achieve, be it infantry, engineers, logistics convoys, or while defending a perimeter in the Corps rear area. **Again, this is not guidance; it is a supplemental reference for your consideration as you set out to train your units for uncertainty.**

I first wrote this as a battalion commander in March of 2011 as 2nd Battalion, 87th Infantry Regiment set off to fight the Taliban along the Arghandab River Valley in the Zhari District of Kandahar Province, Afghanistan. The original version was based upon nearly 20 years of experience in light infantry operations. This version is essentially the same with some additional context, because modern large-scale combat operations (LSCO) are going to drive all forma-



Soldiers from the 2nd Mobile Brigade Combat Team, 101st Airborne Division engage targets during Operation Lethal Eagle 25.1 at Fort Campbell, KY, in March 2025. (Photo by SPC Alexander Goff)

tions to be able to fight at close range in complex terrain. **Knowing what you want your formation to be able to do is the first step to getting your training methodology correct.** Much of what I outline here, comes directly from the team leaders, squad leaders, platoon sergeants, and first sergeants that taught me over the years as well as my own experiences in Iraq and Afghanistan. **None of this is original thought on my part; 99 percent of it was taught to me by NCOs. NCOs that were, without question, WARFIGHTING EXPERTS.** The fundamentals of close combat and direct fire contact do not change even if some of our tools do.

Light infantry is best suited to fight in the complex and restrictive terrain of mountains, urban areas, forests, jungles, and terrain that restricts ground mobility and line of sight, presents numerous obstacles, and prohibits long-range engagements (300 meters and beyond). **Our formations must be trained to fight at close ranges (0-300 meters).** We must be able to react, engage, control fires, and move more quickly and more effectively than our enemy within these 300 meters. It will be violent, stressful, and nerve wracking. Training will help mitigate this. Focus our live-fire training and situational training exercises (STXs) to develop mastery at short-range direct fire engagements. Our task is to become better at it than anyone we might face. We have a lot of work to do to get there. I wrote this note for the fighting we knew we would face in the labyrinth of walls, canals, grapefields, huts, and orchards of Zhari. But these procedures are applicable to any enemy we could face along the spectrum of combat, and the fundamentals apply to any formation, not only infantry.

Our weapons, night-vision goggles (NVGs), communications, ISR (intelligence, surveillance, and reconnaissance), optics, lasers, and small unmanned aerial systems (UAS) give us advantages in close-range direct engagements, but they DO NOT replace the need for fundamental fighting skills. Technology serves to enhance our capabilities as we execute FUNDAMENTALS better and faster than the enemy. Don't think for a minute that technical improvements will ever replace the need for a strong foundation in drills at the team and squad levels. **I expect NCOs and company-grade officers to drive this development within their training plans regardless of branch, unit, or mission.** Up-close direct fire engagements and fighting is a historical strength of the American Warrior. For much of our history, the ambush (learned from Native Americans) was the decisive engagement fought by small units, decentralized, and led by young leaders. The ambush is still a perfectly valid task and is great for training these fundamentals. Use our robust simulations capabilities to drill these procedures, and weekly battle drills after physical training (PT) start to build reflexive "muscle memory" and confidence without the need to go to the field. Drill, drill, drill, but do every drill to the highest standard. Remember, practice does not make perfect. Perfect practice makes perfect.

A Paratrooper assigned to 2nd Battalion, 505th Parachute Infantry Regiment, 3rd Brigade Combat Team, 82nd Airborne Division, launches an RQ-28A quadcopter drone during Panther Avalanche at Fort Bragg, NC, on 27 July 2024. (Photo by PFC Jayreliz Batista Prado)

Close Combat Direct Fire Contact Fundamentals:

• The enemy will array himself to maximize his protection using terrain, vegetation, and natural and man-made features. The enemy has carefully thought through how to protect himself from you before he decides to engage. Use of buildings, canals, berms, walls, dead space, bunkers, evasion routes, and mines are all part of his calculus before he picks the point of engagement. Think through this as you go through mission planning, rehearsals, fires planning, employment, and route and formation selection. Find the enemy with UAS or other sensors and reconnaissance and **work smartly to prevent him from getting off the first shot at you.**

• The enemy will be VERY hard to see. You will detect him by the smoke coming off the barrel of his weapon, muzzle flash, dust, sound, or lateral movement. Listening is a great way to zero in on the enemy. When possible, use hand-and-arm signals to point out the enemy. **Yelling the distance and direction up and down the formation usually only helps the enemy pinpoint your entire formation.** Consider using hand-and-arm signals.

• Discard the "pop-up" target marksmanship mentality that our training creates. Create appropriate habits for firing into likely or suspected enemy positions based upon enemy signatures and what the terrain presents.

• During the engagement everyone will be under stress caused by fatigue, fear, and confusion. This reaction is

natural. NCOs and officers, your example under stress will be mimicked by your Soldiers. Be patient, collect yourself, get down low, and think. Show them the proper example of dealing with this stress and your Soldiers will rally around it. Practice this in training!

• Direct fire contact is often initiated without commands from a squad or platoon leader. Team leaders immediately take charge. Establish a base of fire and the rest of the squad and platoon will fall into line with the base team and build fire superiority from that point on. Rehearse this action until everyone can do it in their sleep. **Speed matters** in react to contact. You are in a race with the enemy to build fire superiority.

• Expect and rehearse enemy contact from a **flank or from the rear** of the formation, not only the front.

• Remember to rehearse fire control and distribution. There will be times to mass the fire of a squad or a platoon against a point target, and then rapidly distribute the fires across a wider canal line or a trail. You must do both quickly and with minimal commands (rehearse this until you can do it cold). Don't forget to use high explosives (HE) to hit the dead space as you distribute fires across the breadth and **DEPTH** of an engagement. **The ability to mass fires faster than the enemy can break the enemy's spirit, while sporadic, ineffective fires will only embolden him.** Fire commands and fighting in wedges get us to where we want to be.

• **Night combat gives the attacker a psychological advantage by magnifying the defender's doubts and fear of the unknown. Train to minimize the difference between day and night tactics, techniques, and procedures (TTPs). Maintain formations and dispersion and fire control measures at night.** We must be just as effective at night as we are in the day. NVGs and lasers give us an advantage; learn to use lasers to employ fires and control distribution. The enemy will have NVGs, but if you can move and control fires under NVGs faster than the enemy, you have the advantage.

• In complex and restrictive terrain, fires alone will not be decisive. When fires cannot eliminate the enemy, we must use fire and movement. **Train our leaders to understand the difference between fire and movement and fire and maneuver.** It is an important distinction.

o **Fire and movement** is nothing more than moving forward (or backwards if breaking contact) — towards the enemy — while maintaining suppressive fire to prevent the enemy from returning fire on you. Fire and movement is done at the fire team through platoon level. Sometimes moving forward is the best option, if you suspect the enemy has mines or secondary ambushes protecting his flanks. Don't blindly default to flank attacks; think and see the fight.

o **Fire and maneuver** is the blending of fire and movement across a broader area to gain a position of advantage relative to the enemy (like an assailable flank or a breach). Fire and maneuver can only occur after the proper conditions have been set: The element that makes first contact must gain fire superiority BEFORE we consider maneuvering against the enemy position.

React to Contact

Return fire immediately — usually within the first three seconds. **Don't wait for the enemy to stand up and show himself before you engage him because he won't.** This is why it is so important to train our Soldiers to engage known, likely, and suspected enemy locations, or we will not be able to gain fire superiority and the initiative. All you need is a general direction of the enemy and to maintain constant awareness of the other fire team member's fire by fighting in true wedges. **Fire team leaders — your personal actions are critical in the react-to-contact drill.** If you are in a correct wedge with the team leader at the apex, your Soldiers will fire at what they see you firing at without the need for a command or the need to turn eyes and heads away from shooting the enemy... lead the way!

A 101st Airborne Division Soldier engages during a combined arms live-fire exercise at Fort Campbell. (Photo by SGT Jewell Fatula)

Fire Superiority

The only way to close with and destroy the enemy is to prevent him from returning effective fire. Most of the time, we will not be able to identify all the enemy positions

until we are on top of them, especially at night. Consider conducting fire and movement until we find his positions or can identify an enemy vulnerability. Use direct and indirect fires to fix the enemy in place. Once you reach this point, consider shifting to fire and maneuver to exploit his weakness BEFORE he can react. The volume of fire should be such that the enemy cannot move or return effective fire. **Remember to use combat patience and develop the fight as the enemy reveals his positions and then either mass OR distribute fires accordingly.** Fire at the enemy from multiple angles and directions... no linear pitched firefights. Being shot at is stressful; being shot at from multiple directions is terrifying and confusing. Break his will.

Soldiers in 2nd Battalion, 14th Infantry Regiment, 2nd Brigade Combat Team, 10th Mountain Division, run through the breach point during training at the Joint Readiness Training Center at Fort Polk, LA, on 15 August 2025. (Photo by SPC Mariah Aguilar)

Do not waste huge amounts of small arms ammo firing into structures or buildings (sadly, we do this all the time in training) because it's the only target we can see; you won't get any effects against the enemy and you will only reveal yourself to him. It doesn't take long in a firefight for the enemy to figure out how to get out of the way of our fires. The intent of our suppressive fires includes keeping him from moving away. Most of the killing will be done with HE weapons — 40mm, AT-4, hand grenades, and mortars. You may be familiar with the adage "fix him with ball and kill him with HE."

Don't "predetermine" the effectiveness of our fires based on noise or volume; rather, place yourself in a position to see and feel the effectiveness of our fires BEFORE we engage in maneuver.

Assault

We will seldom, if ever, know the full enemy disposition until we move right up on them. This is why our react-to-contact battle drill FOLLOWED by fire and movement is so important. **Speed relative to the enemy matters, integrity of team and squad formations matters, and rates of fire matter in close in direct fire engagements.** The chances of actually seeing enemy "targets" are remote; we can expect to fire and move on sounds, muzzle flashes, and puffs of smoke only. We won't know for sure what we are engaging until we overrun his position.

We often train squads and fire teams to "take out" a two-man observation post (OP), but there will never be only two men in a lone position that is not supported by fires of other enemy elements. Don't try to turn this "training procedure" into a tactic. **Don't fight fairly... fight your entire element, not merely the lead team or squad.** Massing the fires of a squad or even a platoon on a two- or three-man position is a good idea, because there are more enemy coming...

Assault ALL THE WAY THROUGH the objective to the next piece of defendable terrain. This means using fire and movement all the way across until there is no more resistance. You can be sure the enemy has forces beyond what we can see with our naked eyes (front, flanks, and rear). Get small UAS systems up immediately and start looking for them as you secure and transition to defending the objective.

Successful assaults depend upon a high volume of accurate fire against known, likely, and suspected enemy positions AND violence of action. In training we often make the mistake that the closer we get to the objective, the LESS we fire — largely because of "targetry" limitations. **In close-in engagements, you must do the opposite. The closer we get, the more we must fire... again the idea is to break his will as you enter to within hand grenade range or closer.**

Individual Movement Techniques

You know the three basic techniques — low crawl, high crawl, and rush. In training, we normally use rushes, but once enemy rounds start flying back at us, the most common techniques will be low and high crawling (so train this way). It is easier to fight and command and control using rushes, but the enemy will seldom let us do it. Leaders will have to learn to "lead" from their bellies.

Never move on the enemy unless you can keep him from shooting back at you. We typically do this poorly because we are impatient and move too fast. Take your time.

Support by Fire (SBF)

Our rate of fire must be such that it prevents the enemy from moving or returning effective fire, but never fire so much that you run out of ammo. If you are in danger of this happening, you are either firing too much or the support element is too small to do the job. Rates of fire change as events occur; there is an initial high volume to gain fire superiority. Next, the rate slows to conserve ammo while the assault element moves into position; then there is an increase in the volume of fire when the assault element closes in on the enemy. And finally, there is a lift **OR** a shift to targets of opportunity as the assault element takes the fight.

Team leaders lead by their personal example. Lay elements into position using wedges (including crew-served weapons) with team leaders positioned forward so everyone behind them can see what they are doing. When you fight in a linear formation, team leaders and Soldiers often turn their heads (away from the enemy) to look to see what others are doing. AVOID THIS. Keep your focus on the enemy and trust your formation and peripheral vision to see what your teammates and team leader are doing to your left and right. This simple TTP also cuts down on the need for voice commands (which are almost impossible to hear once the shooting starts).

The support-by-fire element is responsible for ensuring that we do not mask fires. The assault element may have to move where it will mask the support's fires — they may not have a choice based on the enemy disposition. When this occurs, the SBF element must either shift fires OR move to a new location to support the assault and prevent masking. If an element can no longer shoot because the assault element is in their line of fire, they must move to a place where they can fire. **Remember... fire on the enemy from multiple angles and directions.**

Linear Terrain Features and Open Areas

Irrigation canals, tree lines, walls, trenches, pastures, courtyards, and intersections are dangerous places. This is where the enemy will inflict casualties on us. Overwatch elements, small unit movements, smoke employment, grenades, and setting in mortars to respond immediately are all means to set conditions to reduce risk to the force. When you come upon these terrain features BE PATIENT. Set the team and the overwatch and the fires scheme BEFORE you make a move. Patience and fire superiority matter. **Do not move unsupported!**

Pre-Combat Checks and Rehearsals

Asking a Soldier if he is "good to go" because he is "experienced" is wrong. **Everyone needs to be checked — period**. Always check weapons; function checks of weapons are a leader duty. Rehearse key tasks and battle drills. This is part of mission preparation and CANNOT be overlooked.

High Explosives

The psychological effects of these weapons are devastating. Nothing will break the enemy faster than effective employment of HE — this includes everything in our arsenal: 40mm, AT-4, MK-19, Carl Gustafs, grenades, and **especially mortars.** Carefully planned use of HE is critical to fixing the enemy and allows the formation to conserve ball ammo for the close fight. HE is what busts open his prepared positions, and HE is what kills the enemy inside of them.

When you fight in a linear formation, team leaders and Soldiers often turn their heads (away from the enemy) to look to see what others are doing. AVOID THIS. Keep your focus on the enemy and trust your formation and peripheral vision to see what your teammates and team leader are doing to your left and right.

Master Weapons and Crew Drill

The most common cause of weapons malfunctions is improper immediate action. We must drill immediate and remedial action until we can do it without conscious thought. Magazine/belt changes must be second nature and executed without conscious thought.

Consolidation and Reorganization

These are two DISTINCT actions that must be treated that way. Consolidation is security and preparation for the enemy counterattack or counter action. Consolidation happens after EVERY engagement, offensive or defensive, no matter how quickly we are trying to move off an objective. Consolidation includes ensuring:

- Everyone has a good fighting position with cover and concealment
- Everyone has designated fields of fire
- M320s are emplaced to cover dead space and support the machine guns
- All sectors interlock, flanks are tied in
- High-speed avenues of approach are covered with appropriate weapons
- Indirect fire plans are set and/or adjusted as necessary
- Fresh magazines/drums/belts are loaded and ammo is redistributed

Every Soldier and leader has to do these things immediately after the last resistance is eliminated and BEFORE reorganization begins.

Reorganization is POW and search, casualty treatment and evacuation, finding lost equipment, and conducting re-supply. Some tasks should occur simultaneously. The enemy will counterattack or at a minimum use drones, mortars, rockets, or artillery against your position. You must move smartly and efficiently to get all of this done, but exercise patience; be deliberate about it.

Communications

Treat comms like it is life or death. Don't ever give up on it — there is always a way to communicate. When not in contact, speak quietly and keep the volume low. When in contact, talk in a normal tone. Screaming into the handset to overcome battlefield noise only distorts your voice, makes you unreadable, and gives your Soldiers the impression that you have lost control.

Radios are NOT an effective way to control squads and fire teams during fire and movement. Team leaders use their positioning, personal example, and hand-and-arm signals — voice commands require team leaders to stop firing...

Leader Locations

Commanders and platoon leaders must be capable of controlling every element in their unit (support, assault, and security) AND communicate with higher adjacent units and external fire support assets.

Control your formation but do not get pinned down. Once pinned down, you are no longer able to help your formation. If the platoon is stopped or needs help, the platoon leader must be able to talk to the commander and his fire support assets. A platoon leader cannot do these things while low crawling behind the lead fire team.

If you lose your comms to higher and fire support, you may have lost the fight. When this happens, you are nothing more than another rifleman in control of the 5-meter radius around you. Control your formation; this includes lifting or shifting direct and indirect fires, fighting in support of the company, and advising the next higher commander of enemy strengths and weaknesses. Accurate reporting and awareness enables us to trap and then swarm the enemy from different directions with UAS and fires.

Mortars

A mortar is the only indirect fire weapon that can be counted on in the close fight. Effective use of these weapons can be the difference between winning and losing. Anywhere you can use a machine gun, you can use a 60mm mortar. Plan to use it in direct lay, direct alignment, and handheld — both direct and indirect. Our 81mm and 120mm mortars will be able to destroy many things that our 60mm can only suppress. Rehearse massing the fires of two to three mortar systems against emerging threats.

Defense

Some form of defense follows EVERY offensive operation. The defense relies on leaders to make it happen. **Never defend anything — no matter how long you plan on staying — from the objective; MOVE to the next piece of defensible terrain and establish a position there.** The enemy is going to hit the objective you just seized with drones, fires, and a counterattack that he has probably planned and rehearsed. The enemy has a history of baiting us into positions of vulnerability and then capitalizing on us once we let our guard down.

Maintenance

In combat, maintenance requires constant attention. Focus on the systems that allow us to move, shoot, and communicate and place priority on our killing systems. Teach your Soldiers to oil their weapons as soon as they stop firing. If you wait until the weapon cools, it is too late — carbon will stick to and harden on the moving parts. Oiling must be part of consolidation and reorganization. Your first thought after you realize you are still alive should be to oil your weapon.

LTG Gregory "Greg" K. Anderson currently serves as the commanding general and senior mission commander of the XVIII Airborne Corps and Fort Bragg, NC. LTG Anderson previously served in a host of command and leader positions from platoon leader to division commander, including assignments in the 7th Infantry Division, 1st Armored Division, 75th Ranger Regiment, United States Special Operations Command, 173rd Infantry Brigade Combat Team (Airborne), United States Central Command, United States Africa Command, and 10th Mountain Division (Light). He is a native of San Jose, CA, and commissioned as an Infantry officer upon graduation from the U.S. Military Academy in 1991. He holds two master's degrees: a Master of Science from the Naval Postgraduate School in Monterey, CA, and a Master of Arts from the United States Army War College in Carlisle Barracks, PA. LTG Anderson has deployed 17 times including operational experience in Haiti, Panama, Bosnia, the Baltic States, Afghanistan, Iraq, and Eastern Europe. Previous command positions include 2nd Battalion, 87th Infantry Regiment, 10th Mountain Division (Light); 2nd Battalion, 75th Ranger Regiment; 173rd IBCT (Airborne), and the 10th Mountain Division (Light). LTG Anderson has more than seven years of joint assignments, including a deployment as the director for Joint Interagency Task Force West in Iraq.

Soldiers with the 2nd Brigade Combat Team, 10th Mountain Division fire a 60mm mortar at Fort Polk on 15 August 2025. (Photo by SPC Mariah Aguilar)

Soldiers in the 1st Stryker Brigade Combat Team, 4th Infantry Division conduct a platoon live fire following gunnery qualification. (Photo by 1LT J. Caleb Sauls)

Ivy Raider 'Moneyball for Gunnery'

Part 2: The Science of Crew Lethality

LTC JON BATE
CPT MITCH BROWN
1LT BEN LOPEZ
SSG NICHOLAS LAMMERT

This article is a continuation of the 1st Stryker Brigade Combat Team (SBCT), 4th Infantry Division's "Moneyball for Gunnery" project, which began in 2024 and was highlighted in the Winter 2024-2025 issue of Infantry.[1] The project leveraged data analytics to generate insights to identify "undervalued players" that can increase crew lethality while conserving time and resources.[2] In this iteration, we analyzed data from the Ivy Raider Brigade's February 2025 Stryker mounted machine gunnery (MMG) to identify factors that were tied to first-time Table VI qualification (Q1) and improved Table VI scores.

Some of our key findings included:

• Crews in companies with two platform-trained master gunners (MGs) were 26 percentage points more likely to achieve a Q1 than crews in companies with zero platform-trained MGs. From zero, each additional platform-trained MG in a company correlated with a 13-percentage point increase in the probability that crews in their company would achieve a Q1.

• Crews that used Stryker embedded trainers before gunnery correlated with a 20-percentage point greater probability of achieving a Q1 and a 7-percent higher Table VI score.

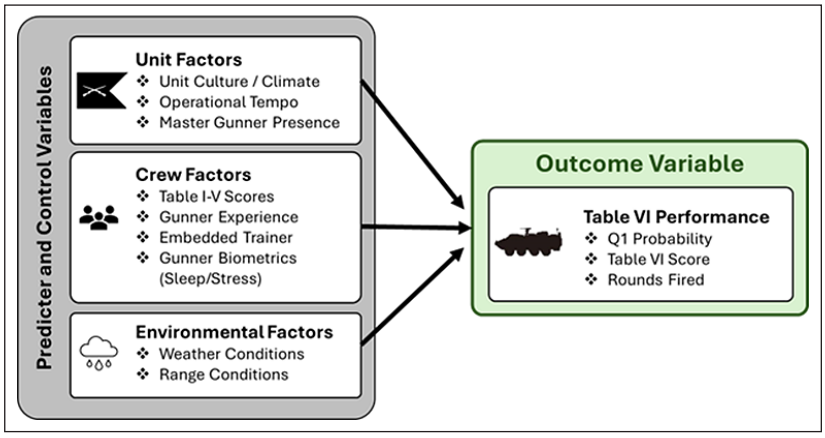
• Gunner selection is critical, as self-reported gunner "buy-in" strongly positively correlated with a crew's Q1 probability.

Theoretical Framework

We began with a theoretical framework that displayed logical connections between independent (predictor) variables, control, and dependent (outcome) variables (see Figure 1).

This framework categorized predictor variables into three categories: unit, crew, and environmental factors. After collecting predictor variable data in a consistent, structured

Figure 1 — Gunnery Analytics Framework



format, we applied statistical methods to test for quantitative relationships with the outcome variable. This study focused specifically on how unit and crew factors influenced Table VI performance.

Data

Based on our 2024 Moneyball for Gunnery project, the 4th Infantry Division revised its gunnery standard operating procedures (SOPs) to expand MMG data collection requirements during 2025 gunnery. However, we were unable to collect all variables due to imperfect SOP implementation and the limitation of a primarily manual data entry system. Our dataset included 164 crews in the brigade's three Stryker infantry battalions, and we limited analysis to high-quality variables that at least two battalions collected to standard. Additionally, while MMG normally consists of six tables, we deliberately omitted Table IV from our gun line due to range constraints, which is permissible in the Army's Integrated Weapons Training Strategy (IWTS).[3]

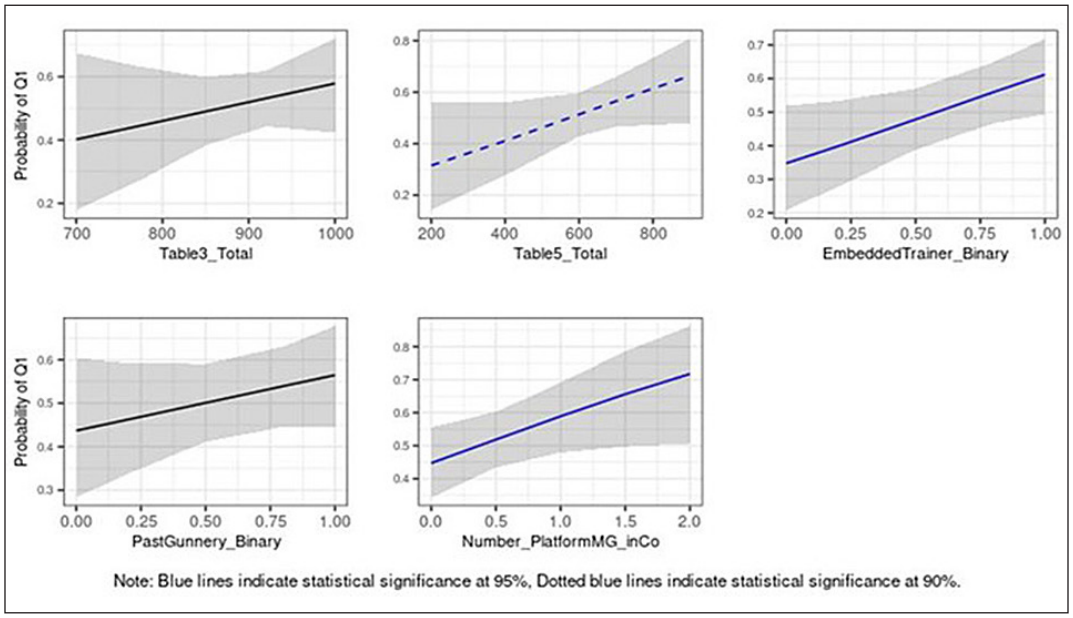


Figure 2 — Predictors of Crew Q1 Probability (Logistic Regression Model)

	Dependent variable:			
	Table6_Binary			
	(1)	(2)	(3)	(4)
Table3_Total			0.00238 (0.00273)	
Table5_Total			0.00207. (0.00120)	
Table3_Day				0.00532 (0.00365)
Table3_Night				0.00153 (0.00445)
Table5_Day				0.00276 (0.00198)
Table5_Night				0.00072 (0.00181)
EmbeddedTrainer_Binary	1.06375* (0.45788)	1.00314* (0.46821)	1.08374* (0.48898)	1.01584* (0.48722)
PastGunnery_Binary		0.36366 (0.45361)	0.51286 (0.47028)	0.47754 (0.47661)
Number_PlatformMG_inCo	0.67740* (0.26765)	0.70259** (0.27032)	0.57137* (0.28277)	0.56256* (0.28317)
WeaponMK19		-0.27482 (0.34449)	-0.14010 (0.35542)	-0.10863 (0.35968)
Battalion2-23	1.63348*** (0.48512)	1.62789*** (0.49000)	1.51507** (0.50264)	1.49776** (0.50997)
Battalion4-9	-0.44111 (0.42248)	-0.59428 (0.46867)	-0.81765. (0.49597)	-0.81827 (0.50562)
Constant	-1.36043** (0.46128)	-1.38398** (0.52091)	-4.80991. (2.65490)	-6.00553* (2.80358)
Observations	165	165	164	164
Log Likelihood	-100.11330	-99.48824	-96.66864	-96.23052
Akaike Inf. Crit.	210.22660	212.97650	211.33730	214.46100

Table 1 — Logistic Regression Results

In the previous study, we found that Table III scores provided statistically significant predictors of first-time Q1 success. Each additional point a crew earned on Table III correlated to an approximately 1-percentage point increase. However, in February 2025, 1st SBCT began requiring crews to earn a minimum Table III score of 800 in order to progress to the next table. As a result, this variable no longer showed predictive value. The minimum score reduced variability across crews, limiting our ability to distinguish performance and weakening its statistical significance.

Modeling Q1 Probability

We first used logistic regressions to estimate Q1 probability. A logistic regression is a type of data model that predicts the probability of a binary outcome (0 or 1) based on various factors, assigning weights to each factor to indicate their influence. The function is used to predict whether an outcome belongs to one of two groups (for example, yes or no, true or false, Q1 or Q2). If the probability was greater than 50 percent, our model predicts a Q1. If it is less than 50 percent, it predicts a Q2. During this MMG iteration, a randomly selected crew had just over a 50-percent chance of achieving a Q1 on Table VI, given that 84 out of 164 crews achieved a Q1.

Five predictor variables in the model demonstrate positive relationships with crew Q1 probability. Use of the Stryker embedded trainer and the number of platform-certified master gunners in a company are statistically significant at conventional levels (95 percent). While the Table V total score is positively correlated at 90 percent, it is not statistically significant, and we take the result as suggestive evidence. Figure 2 illustrates the output of the regression model. Solid blue lines denote statistical significance of 95 percent, dashed blue lines denote statistical significance of 90 percent, and black lines indicate non-statistically significant variables.

Table 1 demonstrates that the correlations are robust to the inclusion and omission of several variables. This is important, as robust variables indicate statistical significance. The slightly lower Akaike Information Criteria (AIC) score — a statistical measure used to compare the accuracy of different models — for Model 3 indicates that the model

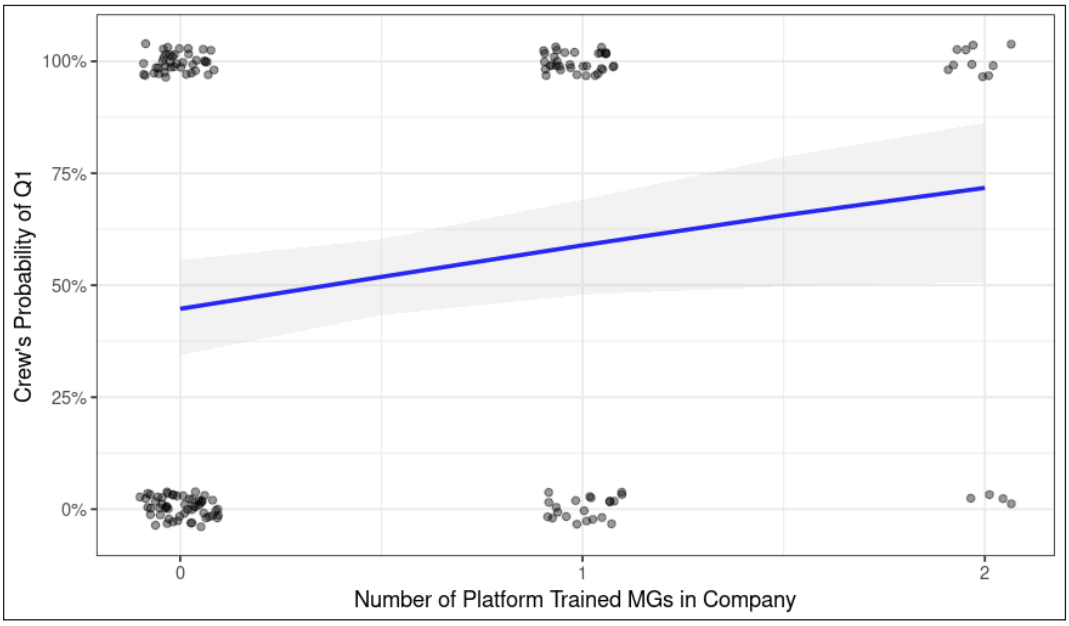


Figure 3 — Relationship Between Platform MGs per Company and Crew Q1 Probability

fits better using total Table III and V scores, in comparison to Model 4 which uses day and night scores.

Master Gunner Impact on Q1 Probability

Figure 3 illustrates that a crew's likelihood of achieving a Q1 increases as the number of platform-trained MGs in their company increases. Crews in companies with two platform-trained MGs were 26 percentage points more likely to achieve a Q1 than crews in companies with none. Going from zero to one platform-trained MG is associated with almost 12 additional percentage points in the probability of Q1, and adding a second resulted in an additional 14-percent increase in probability of Q1.

This result suggests that while introducing this capability is beneficial, maximizing its impact might require ensuring that companies have at least two personnel trained in this capacity, as the second trained MG could bring a greater proportional gain to the overall operational success. This result underscores the importance of MGs in building crew lethality.

Stryker Embedded Trainer Impact on Q1 Probability

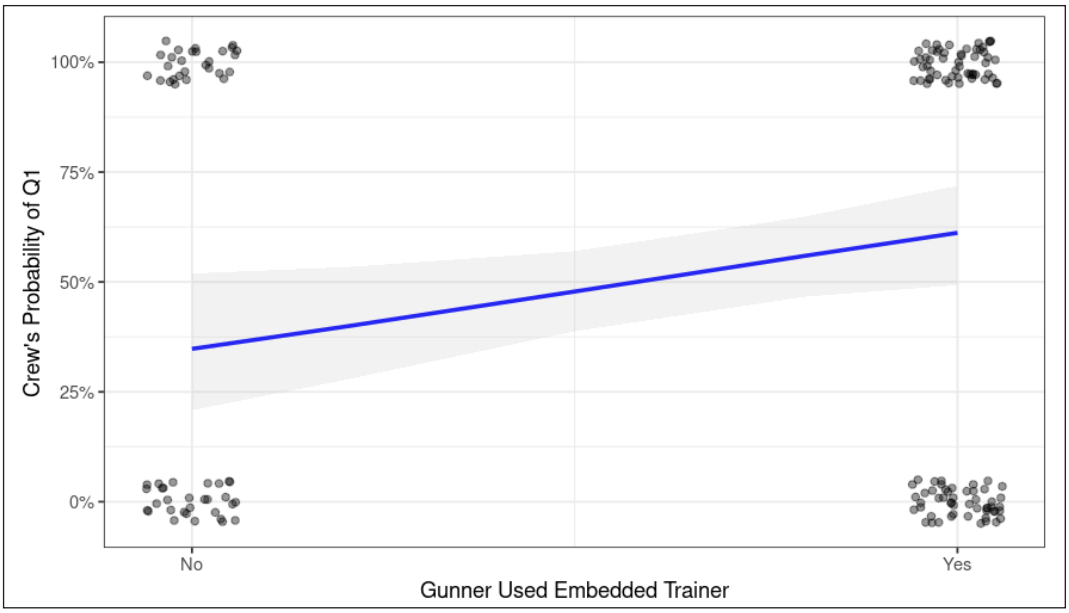
Next, we analyzed the use of the Stryker embedded trainer — an integrated simulation system that enables gunners to rehearse engagements. We collected this data from crews that self-reported meeting embedded trainer requirements prior to gunnery. Figure 4 illustrates the substantial positive correlation between Stryker embedded trainer use and Q1 probability. It highlights two critical factors in qualification success: practice and preparation. Crews that reported regularly using the embedded trainer prior to gunnery had a 20-percentage point greater chance of achieving a Q1, increasing from approximately 25 to 45 percent. These findings reinforce the importance of ensuring crews spend extended time on embedded trainers — and simulated training in general — prior to qualification on Table VI.

Gunner Pride Impact on Q1 Probability

We next collected a "Gunner Pride" score for two battalions (110 crews) via digital survey prior to MMG execution. We posed the question "Are you proud to be a gunner?" measured on a 0 to 10 Likert scale to measure gunner motivation or "buy-in," which we hypothesized would impact their effort level throughout gunnery. Incorporating that variable into the previous model indicated that gunner buy-in is the most important predictor in those two battalions. Table 2 demonstrates that "Gunner Pride" score is robust across the four different models, indicative of statistical significance.

Figure 5 demonstrates a clear positive correlation with predicted probability of Q1, painting a compelling picture of

Figure 4 — Relationship Between Embedded Trainer Use and Crew Q1 Probability



the importance of gunner buy-in. A Gunner Pride score of 0 shows only a 7 percent Q1 success rate, while a score of 10 shows 59 percent. The average score for 110 crews equaled 6.48, which corresponded to a 35-percent chance of Q1.

Furthermore, a one standard deviation increase in gunner pride (approximately two points) correlates with a 15-percentage point rise in Q1 qualification probability, reaching 50 percent. Conversely, a one standard deviation decrease is associated with a significantly lower 22-percent chance of Q1. These results indicate the importance of personnel management and selecting proud, motivated gunners in achieving qualification success.

Insights into Higher Table VI Scores

Lastly, we investigated factors that correlated with higher Table VI scores among the crews that achieved a Q1. We excluded non-first-time qualifications, as they were capped at a Table VI score of 700. Figure 6 illustrates a right-skewed distribution, resulting from less frequent higher scores.

Since the data was not normally distributed (bell curve shaped), we could not apply the commonly used ordinary least squares (OLS) regression. Therefore, we applied a generalized linear model (GLM) — a model in which the response variable follows a skewed distribution — that can appropriately model this data.[4] Table 3 shows the results when running a GLM, or gamma regression.

The regression results indicated that embedded trainer use and past gunnery experience were the strongest predictors of Table VI score. Model 2 was the strongest model, as indicated by the lowest AIC value. This model suggested a possible

	Dependent variable:			
	Table6_Binary			
	(1)	(2)	(3)	(4)
Table3_Total		0.00523. (0.00306)	0.00435 (0.00326)	
Table5_Total		0.00098 (0.00139)	0.00048 (0.00153)	
Table3_Day				0.00990* (0.00458)
Table3_Night				0.00095 (0.00559)
Table5_Day				0.00156 (0.00259)
Table5_Night				-0.00016 (0.00214)
EmbeddedTrainer_Binary			1.03913 (0.67247)	0.97932 (0.68332)
PastGunnery_Binary			0.42516 (0.65830)	0.46376 (0.67765)
Number_PlatformMG_inCo			0.46899 (0.35707)	0.39656 (0.36472)
Gunner_Proud	0.28837** (0.10371)	0.30414** (0.11426)	0.29554* (0.11785)	0.35080** (0.12478)
WeaponMK19		0.03162 (0.41466)	0.01496 (0.42781)	0.10956 (0.44617)
Battalion4-9		0.08708 (0.44290)	-0.41125 (0.57455)	-0.54179 (0.60144)
Constant	-2.26916** (0.72243)	-7.71458* (3.13081)	-7.71518* (3.39716)	-10.09451** (3.70022)
Observations	110	110	110	110
Log Likelihood	-70.08605	-68.26832	-65.03399	-63.20293
Akaike Inf. Crit.	144.17210	148.53660	148.06800	148.40590
Note:				Signif. codes: .p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table 2 — Logistic Regression Results with "Gunner Pride" Score

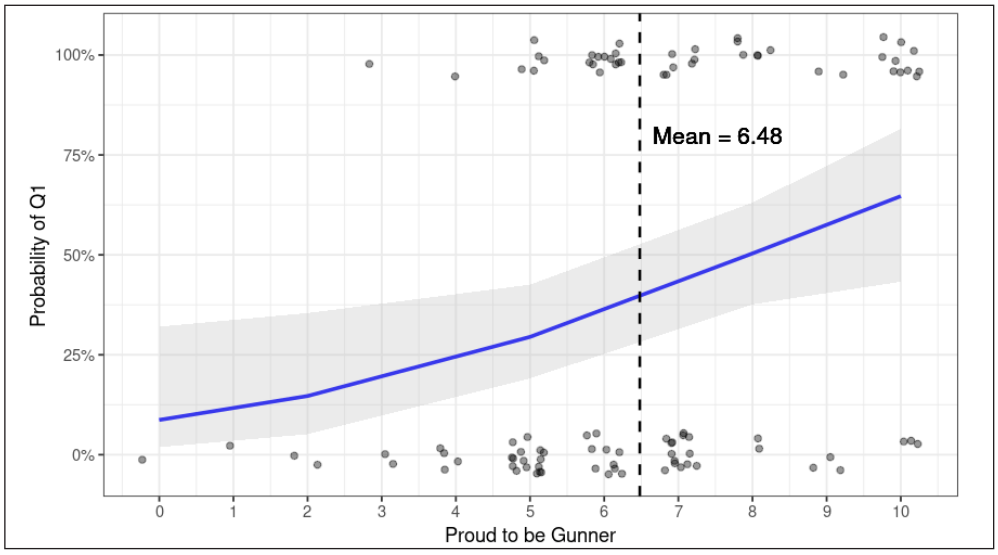


Figure 5 — Relationship Between Gunner Pride Score and Crew Q1 Probability

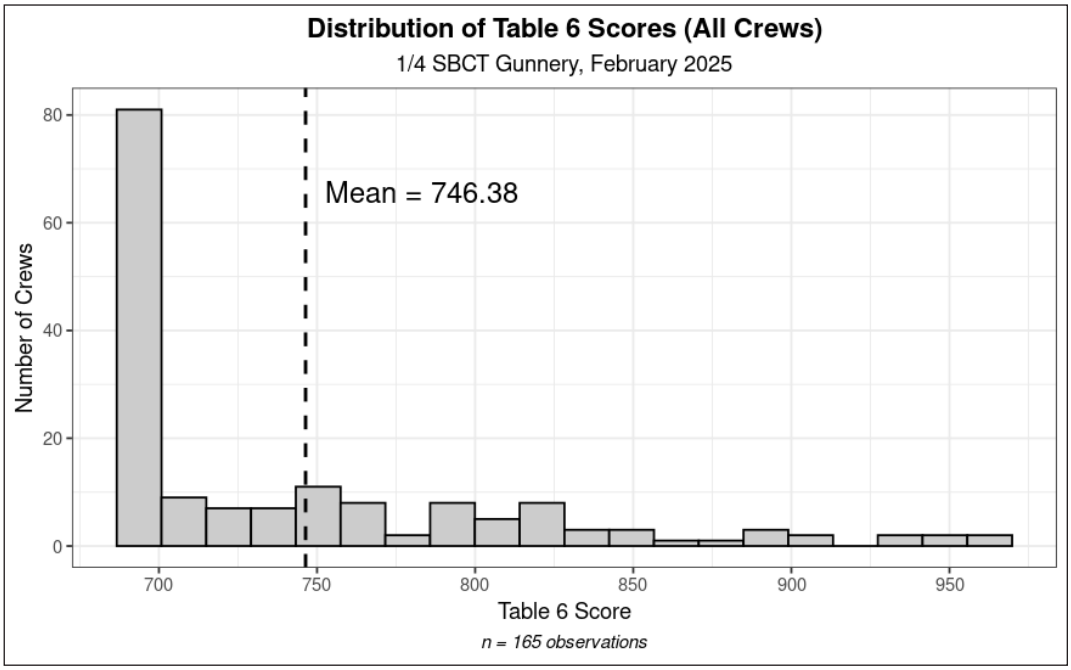


Figure 6 — Q1 Crew Table VI Score Distributions

	Dependent variable:			
	Table6_Total			
	(1)	(2)	(3)	(4)
Table3_Day	0.00009 (0.00020)	0.00005 (0.00019)		
Table3_Night	0.00030 (0.00022)	0.00035 (0.00022)		
Table5_Day	0.00020. (0.00010)	0.00019. (0.00010)		
Table5_Night	0.00003 (0.00010)	0.00001 (0.00010)		
Table3_Total			0.00012 (0.00014)	0.00011 (0.00014)
Table5_Total			0.00009 (0.00006)	0.00008 (0.00006)
EmbeddedTrainer_Binary	0.03108 (0.02264)	0.07242* (0.03203)	0.03150 (0.02291)	0.06781* (0.03189)
PastGunnery_Binary	0.03379 (0.02135)	0.07615* (0.03146)	0.03580. (0.02140)	0.07350* (0.03141)
Number_PlatformMG_inCo	-0.00265 (0.01357)	-0.00374 (0.01336)	-0.00174 (0.01385)	-0.00279 (0.01369)
Battalion2-23	0.02943 (0.02372)	0.03886 (0.02399)	0.02657 (0.02360)	0.03389 (0.02379)
Battalion4-9	-0.05629* (0.02738)	-0.03643 (0.02913)	-0.06258* (0.02701)	-0.04658 (0.02847)
EmbeddedTrainer_Binary:PastGunnery_Binary		-0.07893. (0.04376)		-0.07028 (0.04340)
Constant	6.38906*** (0.14483)	6.37999*** (0.14251)	6.46803*** (0.13493)	6.46029*** (0.13327)
Observations	84	84	84	84
Log Likelihood	-462.92010	-461.03370	-464.88340	-463.40260
Akaike Inf. Crit.	945.84020	944.06740	945.76690	944.80520
Note:				Signif. codes: .p<0.10, *p<0.1; **p<0.05; ***p<0.0

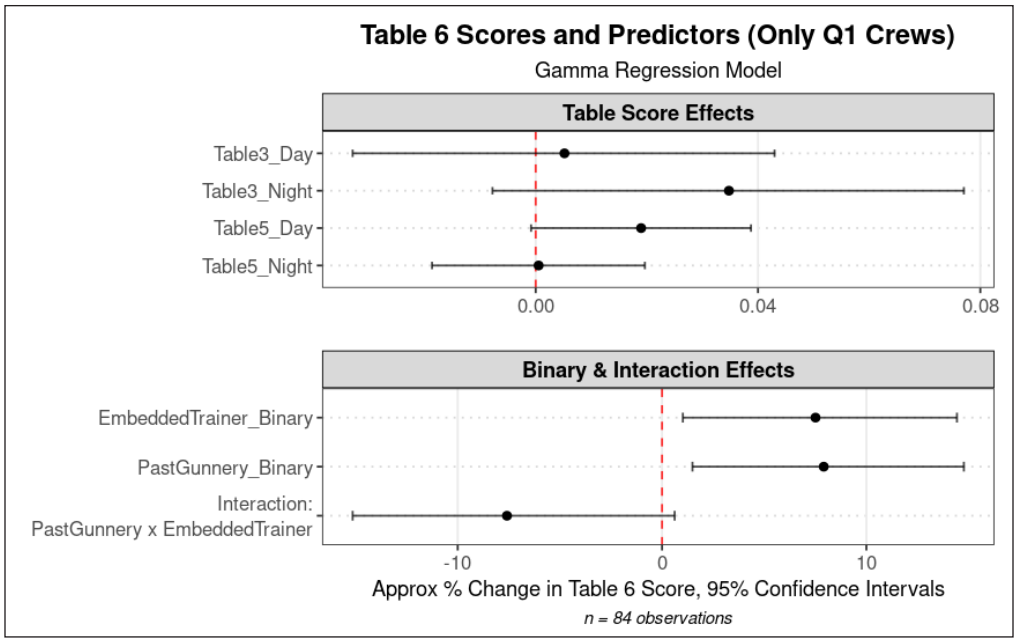
Table 3 — Gamma Regression Results

positive relationship (at 90- percent significance) between Table V day scores and Table VI scores. Figure 7 further illustrates these relationships.

As shown in that figure, Tables III and V (both day and night iterations) had a negligible impact on Table VI scores, increasing qualification scores by fractions of a percent. However, both embedded trainer use and past gunnery experience correlated with approximately 7-percent higher scores on Table VI. These findings were consistent with our OLS regression results, with the exception of past gunnery experience becoming a possible predictor variable.

Interestingly, the interaction between past gunnery experience and embedded trainer use is negative and similar in magnitude to each individual coefficient. While only significant at 90 percent (which is not conventionally statistically significant), this provides suggestive evidence that embedded trainer use provides greatest value to new gunners. In other words, embedded trainer use is a substitute for past gunnery experience.

Figure 7 — Gamma Regression Coefficient Plot



Future Research

There are several ways this study could be improved:

1) Enter gunnery with a deliberate data collection plan and then ensure data collectors are trained to standard on how to collect MMG data. Utilize tablets instead of whiteboards for data tracking and standardize this process across each battalion/brigade.

2) Additionally, expand data collection to measure additional variables that are likely correlated with crew performance. For instance, Soldier discipline, crew cohesion, maintenance culture, and MG involvement. The inclusion of more variables only increases our ability to accurately predict a crew's likelihood of qualifying.

Our investigation into what factors contribute to gunnery success progresses with "Moneyball for Gunnery, Part 3," where we will investigate the impact of biometric data, including sleep and stress, on MMG performance. Given the extended and intensive nature of gunnery, which can significantly affect a Soldier's well-being, this iteration will employ Oura rings to measure various biometric measures. We hypothesize these factors have a critical role in a crew's ability to qualify.

Recommendations

1. Create two modified table of organization and equipment (MTOE) billets for Stryker MGs for every rifle company. Invest in master gunner training and empower MGs during MMG.

Educate company and battalion commanders and S-3s about the MG roles as "lethality advisors" when developing training plans to achieve mission essential task list (METL) and lethality objectives.

2. Incorporate Stryker embedded trainers and Virtual Battlespace 3 (VBS3) into unit gunnery preparation. 1st SBCT plans to mandate a minimum standard of three qualifications with a score over 900 before progressing to MMG qualification in the summer of 2026.

3. Invest in crew selection. If gunners are not proud to serve in the role, they will not put forth the effort necessary to excel. Deliberately manage talent among sergeants in infantry companies to balance assignments between vehicle commanders and dismounted team leaders, ensuring neither role is overvalued or undervalued.

4. Enter gunnery with a deliberate data collection plan and establish legacy unit files for gunnery data. Digitize and standardize data to ensure variables are collected in a consistent manner across units. Expand the data collection to measure additional variables that are likely correlated with crew performance, such as Soldier discipline, crew cohesion, maintenance culture, MG involvement, etc.

5. Join our team and expand the study through collaboration. The Ivy Raider Brigade encourages other units conducting Stryker gunnery to replicate or contribute to this analysis. Units interested in participating or sharing data are welcome to reach out for coordination. Broadening the dataset will help validate trends observed in this article and shape future recommendations across the force.

Notes

[1] LTC Jonathan D. Bate, 1LT Ethan Barangan, 1LT Nicholas Calhoon and SSG Jacob Seitz, "A Data-Centric Approach to Increasing Crew Lethality: Proposing 'Moneyball for Gunnery,'" *Infantry*, Winter 2024-2025, https://www.army.mil/article/282409/a_data_centric_approach_to_increasing_crew_lethality_proposing_moneyball_for_gunnery.

[2] Lauren C. Williams, "'Moneyball' for gun crews: Surprising data have Army division reshaping its gunnery training," *Defense One*, 1 September 2024, https://www.defenseone.com/defense-systems/2024/09/moneyball-gun-crews-surprising-data-have-army-division-reshaping-its-gunnery-training/399227/.

[3] Training Circular 3-20.0, *Integrated Weapons Training Strategy*, June 2019, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN17507-TC_3-20.0-000-WEB-2.pdf.

[4] Penn State Eberly College of Science, Analysis of Discrete Data, Chapter 6.1 - Introduction to GLMs, April 2025, https://online.stat.psu.edu/stat504/lesson/6/6.1.

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Building a Lethal Stryker Infantry Battalion in Korea

LTC BRANDON WOHLSCHLEGEL

It has been almost 75 years since the first North Korean People's Army crossed the 38th parallel, beginning a war that still has not formally ended. U.S. forces still remain on the Korean Peninsula today to deter against future North Korea aggression, develop interoperability with the Republic of Korea Army (ROK-A), and foster shared understanding with our ally. The U.S. Army has permanent stationed units throughout the Korean Peninsula; however, it also hosts units conducting nine-month rotations to increase combat power in the Korean theater of operations (KTO). To benefit the larger Stryker community, U.S. Army, and ROK-A partnership, this article highlights the lessons learned during preparation and execution of 1st Battalion, 12th Infantry Regiment's rotation at the Korean Combat Training Center (KCTC). Throughout the KTO, there is no better location to build readiness and lethal units preparing for large-scale combat operations (LSCO) than at KCTC.

The 1-12 IN "Red Warriors" from the 2nd Stryker Brigade Combat Team, 4th Infantry Division served as the Korea Rotational Force 13 (KRF-13) for nine months from June 2023 to February 2024. 1-12 IN is a Stryker battalion with three Stryker companies, a headquarters and headquarters company (HHC) with organic scout and mortars, and a forward support company (FSC). During KRF-13, 1-12 IN augmented the ROK-A's 3rd Brigade, 7th Infantry Division during its culminating training event at KCTC in December 2023 (Rotation 23-11 – 7-12 December 2023). The six-day exercise mirrored a U.S. combat training center (CTC) rotation but with a greater combined forces aspect, which more accurately simulated LSCO on the Korean Peninsula.

KCTC stands alone as the premier CTC that replicates the fight closest to what American Soldiers experienced during the Korean War. The training center is tucked into the mountainous terrain in the northeast corner of South Korea, located near where the Battle of Heartbreak Ridge occurred in 1951. The world-class KCTC opposing force (OPFOR) not only replicates the North Korean Army's techniques, tactics, and equipment but also speaks the North Korean dialect during the fight. Moreover, KCTC's challenging terrain and climate make it an excellent location to train Stryker formations preparing for U.S. Indo-Pacific Command (INDOPACOM) operations.

If the terrain and extremely professional OPFOR were not enough to provide a very difficult fight, the winter weather added another layer of complexity and hardship for 1-12 IN. Freezing rain, mud, and snow made it a challenge for both Strykers and dismounted infantry alike. Soldiers' trust in their

Leaders from the U.S. Army's 1st Battalion, 12th Infantry Regiment and Republic of Korea Army's 3rd Brigade, 7th Infantry Division conduct a combined arms rehearsal prior to Korea Combat Training Center Rotation 23-11. (Photo courtesy of author)

A Stryker crew from 1-12 IN conducts operations during KCTC 23-11. (U.S. Army photo)

winter equipment and clothing became paramount to their success. Units conducting operations in mountainous areas must start at the Soldier level to build confidence and grit to operate in the harsh environment.

Preparation

A disciplined approach to planning and preparation for any military operation is not only prudent but expected of leaders in any military organization. Multinational operations add to the challenge of ensuring that planning and preparation is synched across a combined force as 1-12 IN experienced during the months leading up to the KCTC rotation. Early integration with the ROK-A brigade, commander-to-commander dialogue, the final coordination meeting, and understanding the differences between Korean versus U.S. Multiple Integrated Laser Engagement System (MILES) equipment will go a long way to ensuring the success of the overall training.

Early Integration

As the culminating training event for the ROK-A brigade, their planning and preparation begins far before what U.S. units typically experience when participating in a U.S.-based CTC rotation. Future participating U.S. units must coordinate and integrate as early as possible with the executing ROK-A brigade. Planners must be provided from both the KRF brigade and battalion level as early as possible in the deployment to understand the planning timeline and parameters of the KCTC rotation. The executing ROK-A brigade arrives to reception, staging, onward movement, and integration (RSOI) at KCTC with the tactical plan, communications exercise, rehearsals, and area recons already complete. With assistance from Eighth Army and the 2nd Infantry Division, the participating KRF battalion can better deconflict their training calendar prior to arriving to assume the KRF mission to ensure a similar level of understanding and that training gates are met.

ROK-US Commanders' Dialogue

ROK-A brigade commander to U.S. battalion commander dialogue on the tactical plan is vital. The initial ROK-A brigade tactical plan for the rotation was drafted 60 days out and then used during the initial in-person dialogue with the U.S. battalion commander. This dialogue is instrumental in the ROK-A brigade's understanding of the capabilities and composition of a U.S. Stryker battalion and key higher-level U.S. enablers. With this information given in a timely manner, the ROK-A brigade can continue to refine its tactical plan, giving the Stryker infantry battalion tasks in line with its mission and capabilities. This requires the participating Stryker battalion to provide a capabilities brief to the ROK-A counterparts early and often, if needed. Through understanding each counterpart's capabilities, the respective unit can integrate fires and effects to enable a successful rotation.

Final Coordination Meeting

The ROK-A brigade's final coordination meeting at KCTC (approximately two weeks out from the beginning of the rotation) is the most crucial pre-rotation training event for participating U.S. units to attend. This weeklong conference goes over the entire rotation from start to finish and serves as the final checks and balances for all participating units. It is recommended that the KRF battalion commander with staff attend this event. All the details from arrival, RSOI, tactical assembly areas, battle positions, avenues of attack to objectives are discussed during this conference. If the KRF battalion misses other train-up opportunities prior to the final coordination meeting, this event is critical to help synchronize their efforts prior to the rotation.

ROK Army MILES

The Korean MILES equivalent is easier to use and more intuitive than U.S. MILES gear. Not only is every Soldier's movement tracked from start to finish, but every bullet shot from any MILES-equipped weapon is logged. If MILES "rules the battlefield" at U.S. CTCs, then it is true to a much higher degree at KCTC. Kills will not be adjudicated by ROK-A observer controllers (OCs) unless the MILES records it. Korean and like U.S. weapons have the appropriate MILES, but the following key U.S. weapon systems do not have Korean MILES: M2 .50 Caliber Machine Gun, Javelins, 81mm mortars, and 120mm mortars. If equivalent MILES gear can be procured, this will help more accurately replicate the combat power of a Stryker formation and increase the supporting unit's lethality during the exercise. For example, during KCTC, 1-12 IN fired 1,362 rounds of 120mm mortars, of which only six rounds were adjudicated due to a lack of MILES. Last, with the lack of replicated Javelin and Common Remotely Operated Weapon Station-

Soldiers in 1-12 IN receive a class on the Korean Multiple Integrated Laser System equivalent.

Javelin (CROW-J) capabilities, a Stryker battalion's ability to destroy enemy armored vehicles becomes limited to Korean MILES-equipped Panzerfausts. Thus, U.S. Soldiers must be properly trained and ready to use the Panzerfausts prior to the beginning of the exercise. For a real-world mission, the application of dismounted anti-tank weapons (AT4s and Carl Gustafs) will be crucial to the success of the infantry along the limited number of main and alternate supply routes accessible due to Korea's topography.

Overall, the approach and attention to detail from the ROK-A rotational unit during planning and preparation should be mirrored by the supporting KRF battalion. Every attempt at integration prior to the exercise should be prioritized when humanly possible. The early link-up and synchronization will pay huge dividends during the KCTC fight.

Execution

The execution of KCTC 23-11 included two battle periods: a three-day defensive phase and a three-day offensive phase. Throughout each phase, the OPFOR was relentless from start to finish, replicating North Korean tactics from the individual level all the way up to battalion level. All nine 1-12 IN maneuver platoons experienced significant combat action, having to fight as a platoon tied into a larger company, battalion, and brigade fight. Of all the lessons learned from a KCTC rotation, there are four critical areas to highlight to increase shared understanding across the force: multinational interoperability, engagement area development (EA DEV), rear area security, and the advantages of Stryker formations in Korea.

Multinational Interoperability

Multinational interoperability begins with having the right liaison cells at the right locations, up and down the chain of command. The ROK-A and U.S. liaison officers (LNOs) directly impact mission command through the human aspect of interoperability during the rotation, bridging procedural and technological interoperability gaps. LNO cells played a major role in the effectiveness of all three dimensions of interoperability.

Both the ROK-A brigade and KRF battalion must agree upon a deliberate plan for LNO support. Bridging the language, tactical, and cultural barriers between U.S. and ROK-A forces is critical not only to promoting combined interoperability but also to winning the fight. During 1-12 IN's KCTC rotation, the ROK-A brigade provided a two-man LNO package with communication systems to the 1-12 IN battalion main command post (MCP), and in turn, 1-12 IN provided a LNO package to the ROK-A brigade MCP with two digital platforms (Joint Battle Command-Platform [JBC-P]) and two frequency modulation (FM) communications nets. This communications redundancy ensured that even if one system became non-mission capable or impaired by enemy actions, there was still information exchange between the headquarters.

The one major improvement gleaned from the KCTC rotation was the requirement to have LNO packages with adjacent multinational battalions, not just higher headquarters, to be able to have shared understanding and synchronization of the battlefield. Future U.S. rotations to the KCTC or other multinational CTCs should provide at least one U.S. LNO with communication equipment to each adjacent ROK-A unit. 1-12 IN's situational awareness was severely limited during

Soldiers from 1-21 IN and ROK-A conduct a rehearsal of concept drill.

offensive operations due to the inability to directly talk with adjacent ROK-A units. These additional LNO packages with a higher-level synchronization matrix would have significantly increased cross-talk and near simultaneity of U.S. and ROK forces' efforts.

Engagement Area Development

EA DEV over large company sectors in severely restricted terrain provided a unique challenge to 1-12 IN. Most of the terrain in northern Korea is challenging for Stryker battalions due to the mountainous terrain. The enemy understands this limitation and employs dismounts to penetrate combined forces' defenses off major and alternate supply routes. As a result, platoons must establish mutually supporting dismounted battle positions (BPs), utilizing the terrain to their advantage. Key to this defense is to employ all forms of BPs: primary, alternate, supplementary, and subsequent. This will allow a company to defend terrain that is very susceptible to enemy infiltration. Proper security and early warning tactics and techniques must be used to identify which avenue of approach the enemy is using to get accurate indirect fires on enemy movements and to reposition friendly forces to other BPs when necessary. In the mountainous terrain, linear defenses and non-linear defenses will quickly be overcome by superior enemy numbers. Primary BPs must be mutually supporting with very clear engagement, disengagement, and movement criteria to alternate, supplementary, and subsequent BPs.

For brigade and battalion-level EA DEV planning, obstacle belt intent must be tied to reality. On the Korean battlefield, unless you have a superior number of forces or the requisite Class IV and V (material for obstacles), blocking or turning enemy forces into engagement areas will be nearly impossible. 1-12 IN quickly learned this during the first 24 hours of the defense. Although the battalion was arrayed in BPs, it was not going to be able to turn the enemy dismounted forces into its main engagement area. In reality, obstacle intent should be to either fix or disrupt the enemy movements utilizing indirect fires as the primary means and eventually jumping infantry platoons to supplementary or subsequent BPs as the unit continues to attrite the enemy's superior numbers. Obstacle emplacement along main or alternate supply routes do reduce the enemy's ability to sustain the fight, but the dismounted forces are able to continue the pressure on the defensive fight.

Rear Area Security during Offensive Operations

Deliberate actions for rear area security missions in Korea are vital to maintaining and building combat power. As 1-12 IN transitioned to the offensive phase of the operation, they were given the mission for brigade rear area security prior to stepping off on the attack during later phases in the operation. The number one lesson learned is that the enemy will have eyes everywhere. The terrain provides a drastic advantage to enemy special purpose forces and observation posts when fighting a wheeled or tracked U.S.-ROK force. The nature of a Stryker fleet operating in severe mountainous terrain is being road-bound, where command posts (CP) and tactical assembly areas (TAA) can only stray from the main routes to an extent before the terrain becomes more hazardous for vehicles than the enemy. Dismounts in mountainous terrain remain crucial, which implores units to train both mounted and dismounted.

Units that can care for their wounded efficiently and competently will buy themselves greater lethality, fewer logistical constraints, and a more steadfast will to fight.

Through 1-12 IN's experience, Stryker companies must focus on the following priorities of work during rear area security operations: posting local security, positioning key weapons systems, assigning sectors of fire, and establishing the company counter-reconnaissance and surveillance operations. Counter-reconnaissance is the sum of all actions taken at each echelon to counter enemy reconnaissance and surveillance efforts throughout the area of operation. The purpose of counter-reconnaissance is to destroy, defeat, or repel all enemy reconnaissance elements within capabilities and following engagement criteria. It is not a distinct mission but a component of all forms of security operations, denying the enemy commander the ability to conduct reconnaissance and develop situational understanding. Successfully countering enemy reconnaissance is the first and possibly most important step in an operation. During the KCTC rotation, 1-12 IN learned that active reconnaissance and surveillance (R&S) patrols were the main deterrent to keep enemy observers from finding CP and TAA locations in a severely restricted terrain environment.

Secondly, for the company and platoon elements not directly participating in rear area security operations, you must always have a plan to jump locations when the enemy is able to identify your location. This identification of friendly CPs and TAAs was always followed by enemy indirect fires during the KCTC fight. It is critical, especially in Korea, to have a deliberate rear area security plan, counter R&S operations, and relocation plan. Without a plan and deliberate actions, the lack of preservation of combat power for offensive operations will quickly overwhelm a combat unit in the rear area.

Advantages of Stryker Formation in Korea

Although many lessons learned can be applied to any formation, whether they are light, wheeled, or mechanized, the three biggest advantages derived from fighting with a Stryker infantry battalion at KCTC are: increased tactical mobility, enhanced communications, and ability for greater sustainment operations.

Tactical Mobility: As in many locations in Korea and across INDOPACOM, severely restricted foothills to moun-

tainous terrain provide unique challenges and opportunities to train the capability of a Stryker formation. The control of limited ground lines of communication (LOCs) due to the natural canalization of the severally restricted terrain will be a key task during combat operations. Without open LOCs, forward-positioned forces will quickly become cut off from the larger body of friendly ground forces as has been readily documented during many battles in the Korean War. A U.S. Stryker infantry battalion's advantage in this type of warfare is the ability to quickly self-transport infantry to a dismount point, just outside of enemy contact range, and then have the infantry clear forward, destroying enemy positions along the LOCs. This technique of dismounting and clearing forward of the mounted element in severely restricted terrain has the advantage of not exposing Strykers to enemy anti-tank weapons or indirect fire before the infantry can clear the enemy positions. Once the dismounts have destroyed enemy observation posts and anti-tank elements are destroyed, only then should Strykers be called forward to help sustain the fight. Clearing the possible threats allows the true advantage of Stryker formations to be used to rapidly seize terrain and maintain momentum. Training at the KCTC allows a combined force to practice these exact tactics, which cannot be replicated at other CTCs to the same effect.

Soldiers in Comanche Company, 1-12 IN conduct a stream crossing during KCTC 23-11. (Photo courtesy of author)

Enhanced Communication: The Stryker's enhanced communication systems are a game-changer in mountainous terrain. It is relatively easy to outrun line-of-sight communications in Korea, but the JBC-P alone will help a geographically dispersed Stryker formation maintain situational awareness and execute command and control. The real-time sharing of graphics, intelligence, and situation reports across the complex KCTC terrain was instrumental to the commander's understanding of the battlefield. The fight for communication is continuous on the Korean battlefield. The proper utilization and positioning of JBC-P systems at the battalion and company levels provided the only means of communication when companies were out of FM comms range with battalion. For example, the battalion scouts were able to forward position and conceal one reconnaissance Stryker variant with JBC-P comms while maintaining FM comms with their scout teams on the ridgelines. This allowed the scouts to call in indirect fire on enemy positions within seconds of the reports coming in from the scout observers on the ground. Through a combined approach of JBC-P and FM comms, units can mitigate the terrain's denial of dismounted comms architecture alone.

Greater Sustainment: Finally, the ability of a Stryker battalion to self-sustain for up to 96 hours once entering the fight allows for extended combat operations and a greater ability to react to contingencies as they arise. When resupply was called forward through brigade support battalion and supply chain assets, the priority for classes of supply was Class III(B) (fuel) followed by a combination of Class I (food and water) and Class V (ammunition) as requested by companies through accurate logistic reports. Companies then utilized the service station resupply method by pulling only a limited number of Strykers out of position or TAAs as needed to conduct resupply operations. The bottom line is that the utilization of Strykers to self-sustain dismounted combat operations will be key to sustaining the tempo of the fight in Korea.

Conclusion

In conclusion, training at the KCTC allows Stryker units to exercise all their mission-essential tasks while improving interoperability with the ROK-A, thus increasing warfighting capabilities in the KTO. Between the severely restricted terrain, the harsh winter weather, world-class OPFOR, and highly professional ROK-A OCs, valuable lessons can be learned daily at echelon. KRF units should strive to be selected to complete a KCTC rotation, as it significantly increases their formations lethality and interoperability. Moreover, U.S. Army Forces Command deployment readiness exercises should send a unit straight to KCTC after RSOI as they assume KRF or from CONUS locations to KCTC. These lessons will help future KRF units be fully prepared to "fight tonight and win" in similar real-world combat conditions not only in Korea but across the INDOPACOM area of responsibility.

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Infantry Doctrine Proposal:

UAS Sections that Mirror Mortar Sections

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In his 2006 book, *Passion of Command: The Moral Imperative for Leadership*, U.S. Marine Corps Col B.P. McCoy states that "to take and conquer land, you must give brave men rifles and hand grenades."[1] Although many modern technological advancements induced significant change in both the military and civilian landscapes since the writing of his book, the requirement of the Infantry to close with and destroy the enemy in close combat remains a universal constant of ground combat. With the current proliferation of low-cost and highly lethal unmanned aerial systems (UAS), we believe that these machines are positioned to provide a significant increase of infantry company lethality when used to support the company's essential role of closing with the enemy.

A Soldier assigned to the 2nd Stryker Brigade Combat Team, 4th Infantry Division prepares to receive a small unmanned aerial system during Exercise Steel Avalanche on 27 February 2025 at Fort Carson, CO. (Photo by SPC Doniel Kennedy)

The introduction to Army Techniques Publication (ATP) 3.21.10, *Infantry Rifle Company*, explains that the Army's vision of a rifle company's primary mission is "to close with the enemy employing fire and movement in order to; destroy, capture, or to repel his assault through fire, close combat, and counterattack."[2] In this capacity, we believe that small UAS (sUAS) can be integrated into maneuver formations as an evolution of available assets as they apply to the battle drills and patrolling listed within ATP 3.21-8, *Infantry Platoon and Squad*, and the Ranger Handbook.[3] UAS integration should be viewed as a complementary asset to the current rifle company without competing to replace any current weapon systems. As such, we believe it is prudent for the Army to include a UAS section within its infantry companies similar to that of a mortar section.

The personnel and sustainment considerations for UAS integration should follow the example of mortar sections as demonstrated in ATP 3.21.10.[4] Larger UAS integration should also follow this precedent but at higher echelons such as the battalion.[5] Figure 1 contains the infantry company-level formation recommendation and highlights our proposed modification.

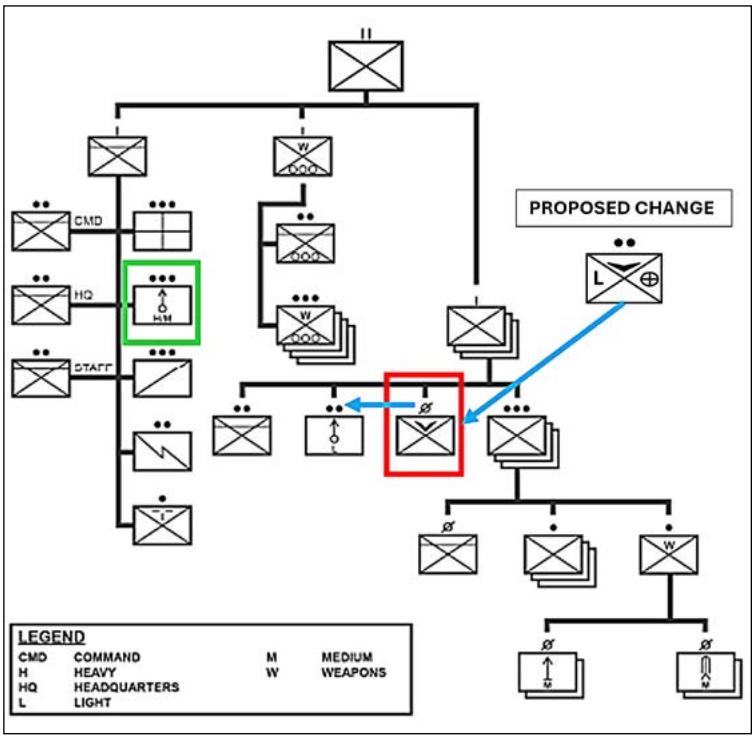


Figure 1 — Proposed Change to an Infantry Rifle Company within an Infantry Battalion

The most important capability gained from UAS integration is that it introduces a targeting asset that is an immediately available, maneuverable kinetic munition. This integration, even at the current stage of drone development, enables the characteristics of the offense and the defense through enabling significant augmentations to disruption, tempo, and surprise.[6] Furthermore, as the technology to coordinate one-too-many human-drone implementations matures, this integration will only increase in value through the ability to be a force multiplier to concentration and mass.

Since we believe the kinetic aspect of a UAS is its most important capability in support of a rifle company's core mission, our recommendations make this capability the center of gravity of any integration effort. To that extent, the rifle company's maneuver Soldiers must be able to seamlessly call upon kinetic UAS to destroy, disrupt, or disable the enemy while engaging in close combat. This type of close support integration can already be found in the rifle company's mortar section. The benefits of closely integrated mortar sections are illustrated in ATP 3-21.8 (Appendix D and Chapter 1).[7] This integration will enable the maneuver commander to assign a task and purpose to the UAS section in accordance with the Ranger Handbook and Field Manual (FM) 3-09, *Field Artillery and Fire Support Operations*.[8] Furthermore, the desired effect for the UAS section should come from Appendix C of FM 3-60, *Army Targeting*.[9]

As stated in doctrine, the purpose of mortars is to provide the maneuver commander with immediately available, responsive, mobile, lethal, and non-lethal fires.[10] Mortars are universally beloved because of their seamless, intuitive, effective integration. The integration of UAS must follow this example.

A starting point for "UAS section" integration would be performance while in the support element of a combat patrol or how well the section performs Battle Drill 5 (Knock out a bunker). The purpose of the former would require no change to doctrine: "The support element suppresses the enemy on the objective using direct and indirect fires."[11] The purpose of the latter would be employing an M67 fragmentation grenade from a UAS.[12] Either of these purposes mirror what mortars are currently used for: suppressing enemy positions. The feasibility of a 60mm mortar "direct lay" technique is comparable to the speed and integration of one-way attack (OWA) UAS.[13]

Current maneuver doctrine not only employs mortars as unique modular components but also employs machine-gun and anti-tank teams as disparate sections. Both of these are organic to infantry platoons.[14] The unique battlefield effects of machine guns or anti-tank weapon systems warrant special consideration in planning, and UAS sections should be treated no differently. Infantry formations should incorporate UAS sections that mirror mortar sections to maximize the mobility of a maneuverable kinetic munition, reduce the latency of employed effects on targets, and leverage the initiative.

Our contributions to infantry-UAS integration are the following:

- Proposing a weapon systems-focused doctrinal change for infantry formations
- Measuring the scope of integration through battle drills and patrolling
- Comparing kinetic feasibility of UAS to organic infantry weapon systems

UAS	Unmanned aerial system – the entire system, from airborne hardware to groundborne controller
UAV	Unmanned aerial vehicle – exclusively the airborne configuration but every component that is airborne
ISTAR	An intelligence, surveillance, target acquisition, and reconnaissance UAS, often associated with non-expendable, stabilized hardware (e.g., more powerful sensors)
OWA	One-way attack – a UAV intended for a terminal attack against a ground or airborne target. Generally speaking, these platforms must be cheap (generally less than $5,000) and considered expendable to fulfill their intended purpose. With advancements in electronic warfare jamming technology, UAV onboard computer is becoming a necessity on OWA drones to enable terminal guidance. Without autonomous terminal guidance, an OWA drone is susceptible to EW pertubations that decisively jam the control or video link to the drone.
Dropper	The UAV designed to drop munitions onto a target. These platforms require a downward-facing camera and dropper mechanism in order to accurately identify and engage targets.

Table 1 — Key Definitions

120mm Mortar	1.0
81mm Mortar	.779
60mm Mortar	.485
25mm M242 BFV	.347
TOW Missile	.521
M240B	.25
M249	.139
M320	.056
AT4	.042
Javelin	.347
M67 Frag	.005

Table 2 — Ranges of Infantry Weapon Systems

• Proposing the integration as supplement to mission, enemy, terrain and weather, troops available, time, and civilian considerations (METT-TC) limitations of current weapon systems

Infantry Formation Recommendations

Infantry Formation Weapon System Capabilities

Our recommendation for UAS sections warrants comparison to current infantry weapon systems. This comparison enables directly exploring capability gaps or synergies. Table 2 provides a standard weapon system comparison presented as a ratio of maximum effective ranges. The standard of comparison is deliberately withheld, and comparisons are confined to high explosive (HE) ammunition.

The range of the recommended UAS section should be comparable to that of a 60mm mortar; however, actual range of UAS vary by type and purpose.

UAS Section Formation Recommendation for Infantry Companies

The majority of maneuver graphics in Chapters 2 and 3 of ATP 3-21.8 include the organic light mortar section. These graphics include the entire symbol or the cannons separated into the squad-specific weapon symbols. The UAS section should be incorporated in an identical fashion.

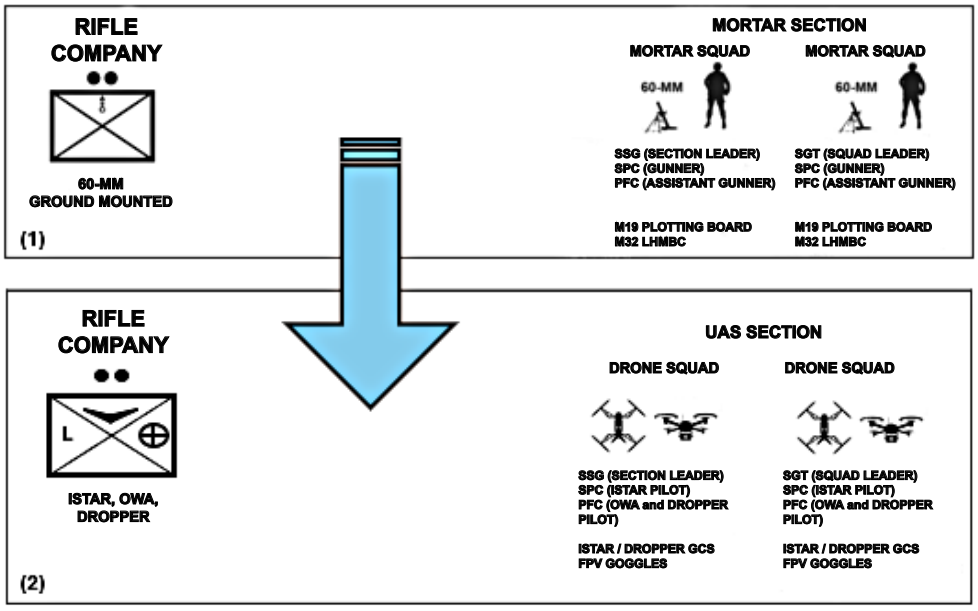
The purpose of mortars might be best understood through military occupational specialties (MOS). The conventional Infantryman is an 11B and a mortarman is an 11C. Mortarmen are Infantry Soldiers who fight with indirect fire weapon systems. Mortar doctrine, training, and intent all harmonize to support maneuver elements in close combat with timely and accurate indirect fire.[15]

Appendix D of ATP 3-21.10 provides imperative for mortar employment: Mortar sections are mobile assets that provide immediate fire support through numerous means, to include cross-trained Infantrymen with the direct lay technique. UAS section Soldiers should be integrated in this same fashion.

The prominence of UAS — either intelligence, surveillance, and reconnaissance (ISR); first-person view (FPV); or bombing — should follow the mortar precedent for forward line of own troops (FLOT) lethal mobility. Infantry companies should have UAS sections that operate as an immediate indirect fire asset.

The experience gained by the Experimental Force's (EXFOR's) Robotics and Autonomous Systems (RAS) Platoon directly supports how to fight our UAS sections.[16] In their article "Human-Machine Integration: Tactical-Level

Figure 2 — Proposed Change to Formation in Doctrine



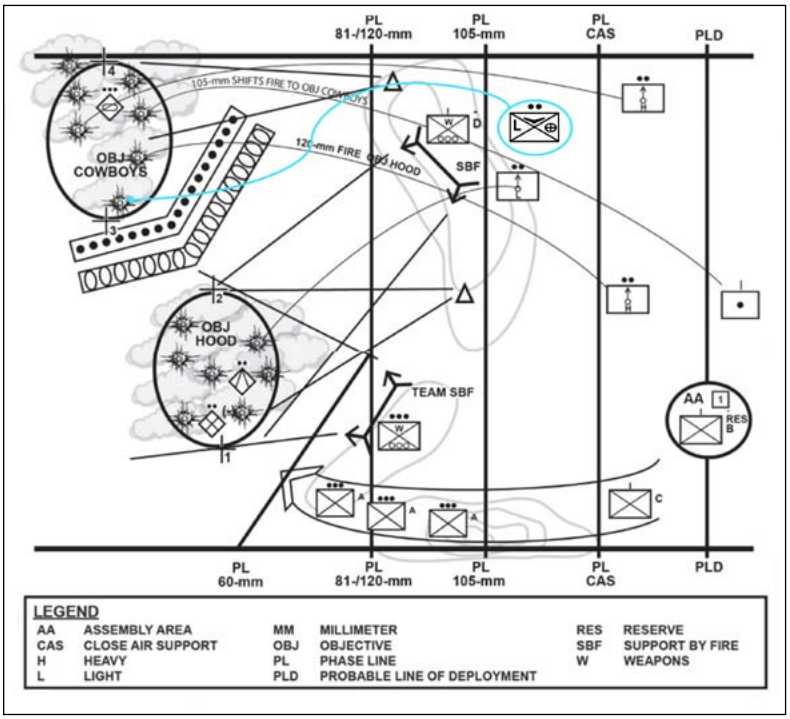


Figure 3 — UAS Section Proposed Tactical Solution

(This graphic illustrates a non-linear munition approach in its attack. The approach resembles the possibility of non-linear employment of OWA UAS)

Employment and the EXFOR RAS Platoon," CPT Timothy Young and Mark Winstead mention establishing a forward line of sensors (FLOS) and launching UAS from protected positions.[17] This is identical to how Appendix D of ATP 3-21.10 conveys the tactical employment of a mortar section: behind the FLOT in a secure area to maximize effective indirect fires.

Measured Effects

We propose measuring the success of UAS integration through patrolling or battle drills. This approach aligns with FM 3-60, where the desired effects of a targeting process "should result in measurable and observable changes in the [operating environment] to enable or assess follow-on actions."[18] This enables straightforward questions:

- Did the UAS section suppress the enemy as part of the support element?
- Did the UAS section kill or force a withdrawal from the bunker?

We recommend the metrics listed in ATP 3-21.10.

In accordance with Battle Drill 07-SQD-D9406, knocking out a bunker requires "killing, capturing, or forcing the withdrawal of enemy personnel" while retaining enough friendly personnel to perform follow-on operations. Our recommended metrics support the rhetorical question: What is the effective difference between an M67 hand grenade tossed into a bunker or flown into a bunker?

Table 3 — Recommended Example Metrics

Metric	Unit	Example
Accuracy	Circular Error (CE)	95% contains 2-meter error
Time	Seconds	500m requires 15 seconds
Weight	X4 OWA	15 pounds per kit of 4

Hardware

Hardware must be officially separated from the task and purpose of the UAS:

FPV — Exclusively related to a "first-person view" fixed camera position at the "bow" of the UAV

Gimbal —The hardware that stabilizes the sensor while airborne so that the human operator receives clear, interpretable imagery

Sensor — The lens-aperture-pixel hardware and the inherent software driver that enables a UAV to observe the 3D world

Payload — Whatever the UAV carries during the sortie. This ranges from munitions to supplies to an advanced sensor-gimbal combination.

One aspect of hardware not yet discussed is the size of the UAS. There are three UAS sizes: short-range reconnaissance (SRR), medium-range reconnaissance (MRR), and long-range reconnaissance (LRR).[19] Generally speaking, the scales of complications are not linear. MRRs are much, much louder than SRRs; however, the logistics required to keep an MRR or larger UAS in a capable fighting posture becomes a full-time duty position.[20] These complications also do not involve de-bugging software should an issue arise.

ISTAR

From a practical perspective, the most important characteristic of an ISTAR UAS is its ability to sortie for long durations and observe from large distances. Additionally, all ISTAR assets should be employed in accordance with FM 3-98, *Reconnaissance and Security Operations*. From a technical perspective, the most important characteristic of an ISTAR UAS is access to the video-telemetry stream. This fused data stream is the critical requirement to employ targeting software like Shrike.[21]

One-Way Attack

These UAS should be used as the primary method of engagement in time-sensitive tactical situations. They can engage faster and have fewer complications with munition preparation. Maneuver Soldiers should aspire to expend these assets. The size of the platform depends on multiple variables such as necessary payload capacity, on-board compute requirements, range, flight time, etc. After testing at the Artificial Intelligence Integration Center (AI2C), we conclude that a 10-inch OWA drone with on-board computer (Raspberry Pi 5) and a payload capacity of 2 kilograms is ideal.

Droppers

These UAS should be used as the primary method in time-available tactical situations. They can be re-used to drop

munitions on reinforced or inaccessible positions. Maneuver Soldiers should attempt to recover or preserve these assets.

Software

Shrike Targeting Software

The authors of this article either currently or formerly worked for AI2C. We do not wish to induce bias for UAS-focused software. Two of the authors are active or tangential developers for the Shrike targeting software.[22]

Artificial Intelligence (AI) and Machine Learning (ML)

The general consensus for AI and ML integration should be acceptance — but with skepticism. For example, "automated" flights and decisions are not the same as autonomous flights and decisions. But most UAS include some "autonomous AI" features.

Some of the enterprise commercial off-the-shelf (COTS) UAS contain AI, and to the best of our knowledge, these models and performances are not yet evaluated with an accepted performance standard. These metric-based standards are one component of our doctrine proposal. We wish to incorporate the AI/ML performance metrics into the UAS section training plan. An example of a basic metric in computer vision would be mean average precision (mAP), which can be understood as "how likely can the ML/AI detect every class of target." However, mAP is only one metric that is often used in evaluation.

$$\text{Precision} = \frac{TP}{TP+FP}$$

$$\text{Recall} = \frac{TP}{TP+FN}$$

$$\text{mAP} = \frac{1}{n}\sum_{i=1}^{n} \text{Precision} * \delta\text{Recall}$$

In these equations, n is the number of classes (i.e., tank, truck, car, person), TP is true positive, FP is false positive, FN is false negative, and δ implies the change in recall from class to class, otherwise interpreted as weighting the precision by the change in recall.[23]

However, a big context here is the lack of data engineering incorporating the ground-truth distance to the targets, thereby inhibiting the "range" of the model. This is an open-research problem that we are working to produce a solution. The solution will require significant data engineering, as the dataset is the "center of gravity" for an AI model.[24]

Integration in Mechanized Formations

Integration into mechanized formations is important, particularly with dismounted troops. However, consistent with the evolution theme of this article, the integration would be supplementary to the current weapon systems organic to the mechanized unit. According to ATP 3-21.71, *Mechanized Infantry Platoon and Squad*, the mechanized platoon fights with the Bradley Fighting Vehicle (BFV). This weapon system is "an extremely powerful and robust weapon system that enables the mechanized Infantry to find and destroy the enemy at long ranges while the dismounted Infantry, supported by the BFV, can destroy the enemy in close combat."[25] UAS integration should not distract from the primary line of effort for the mechanized platoon; it should be complementary.

Training Requirements

For UAS employment to succeed, the U.S. Army must prioritize training Soldiers and equipping maneuver formations with proven, tested solutions.

Training

In his recent article "Experimenting with Commercial Quadcopters for Jungle RSTA," 1LT Alex Choy describes some successful tactics, techniques, and procedures.[26] His findings generally support those made by LTC Reed Markham, who discussed the difficulties associated with UAS integration in his article, "Integrating Drones Isn't Intuitive: Practical Ways to Build This Critical Capability."[27] Both leaders describe the importance of hands-on sorties and dispensing the online/classroom training.

Training to a standard of performance, using a plan resembling the one in Training Circular (TC) 3-20.33, *Training Qualification and Mortars*, requires dedicated, resourced training.[28] We recommend that performance-based training be measured through Battle Drill 5; this offers a concrete method of evaluating piloting and UAS mechanical functionality. The methods of training may vary, but a controlled training environment is essential to gaining the finesse needed for successful FPV sorties.

The learning curve for successful OWA FPV piloting is an arduous, detailed process. Achieving proficiency often requires many hours in simulation and training environments.

Certain U.S. Army units are already training OWA piloting techniques with select groups of military personnel leading the way.[29] It is imperative to implement current training procedures into formations. Current hardware/training resources include:

Liftoff — An FPV racing simulator and accessible on navigable platforms like Steam.[30] A large caveat is units having computers that can facilitate the FPV training.

FPV Goggles — These goggles are technically complex, and this obfuscates much of the radio-frequency complications.

FPV Controllers — These controllers are technically complex, and this obfuscates much of the radio-frequency complications.

Proficiency in FPV piloting for OWA requires dedicated time and incremental progression in degraded, adverse operating environments. This should be treated no differently than other weapon systems.

OWA Training

The primary complication in training is accessing National Defense Authorization Act (NDAA)-compliant hardware, presuming financially procuring hardware is not an issue.[31] The current "work around" to this is piloting FPV under the guise of counter-UAS "Red Team" operations. NDAA compliance reduces acceptable hardware for U.S. military to almost only COTS and government off-the-shelf (GOTS) solutions, which are then further restricted by the "Blue List" from the Defense Innovation Unit (DIU).[32]

Provided these complications are reduced, training can begin with simulations and culminate in live sorties. Soldiers must refine their piloting talent and remain trained. FPV OWA piloting is comparable to other perishable skills in the U.S. Army. Piloting through a simulator such as Liftoff will keep Soldiers capable, but flying real sorties is the only method of flying in adverse weather, where adverse weather for a small UAS is often dismissed by ground troops. Our recommended FPV OWA training plan should result in a qualification rating similar to an weapons range: expert, marksman, qualified, unqualified (see Figure 4 for an example of measuring targeting accuracy).

Dropper Training

The training for droppers is intuitive and accompanied by lower piloting requirements. The limiting factor for droppers will be the UAS attachments to drop a payload. We expect the airborne infiltration and exfiltration from the drop point will be the most tactically challenging for operators.

ISTAR Training

This training is less intuitive to parameterize as ISTAR requirements vary. The best techniques would be to adhere to the principles of reconnaissance and enable maneuver commanders.[33]

Accuracy

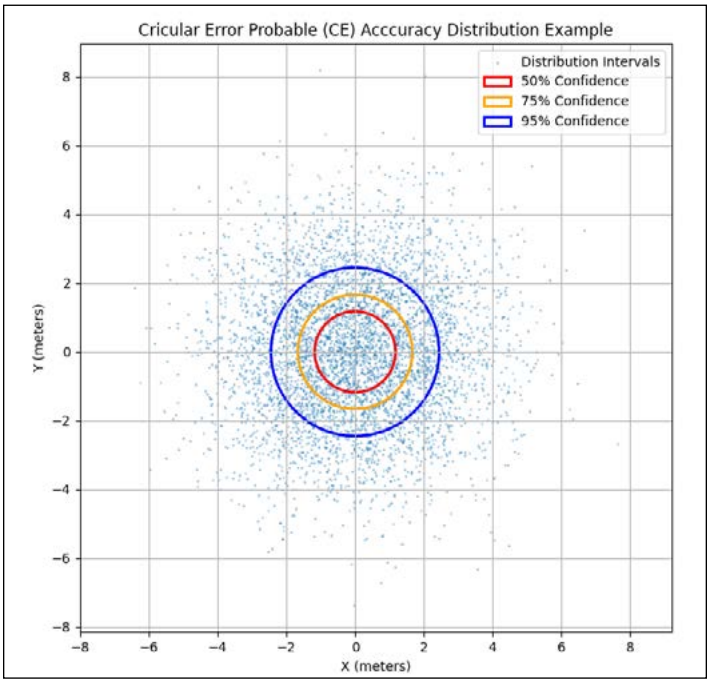
One large consideration in training is the accuracy of the employed weapon system. TC 3-09.81, *Field Artillery Manual Cannon Gunnery*, covers many types of errors.[34] The accuracy of precision munitions is also covered in FM 3-09.[35] Perhaps the most intuitive type of error is the mean point of impact.[36] The basic theory is that variations in the mechanical system and atmosphere exist that induce "probable error" in the ballistic trajectory of munitions. Although OWA and dropper munitions are maneuverable and precise, the measured approach for error is still comparable. We recommend measuring the probability of these UAS with some standard munition to produce an effect on a target.

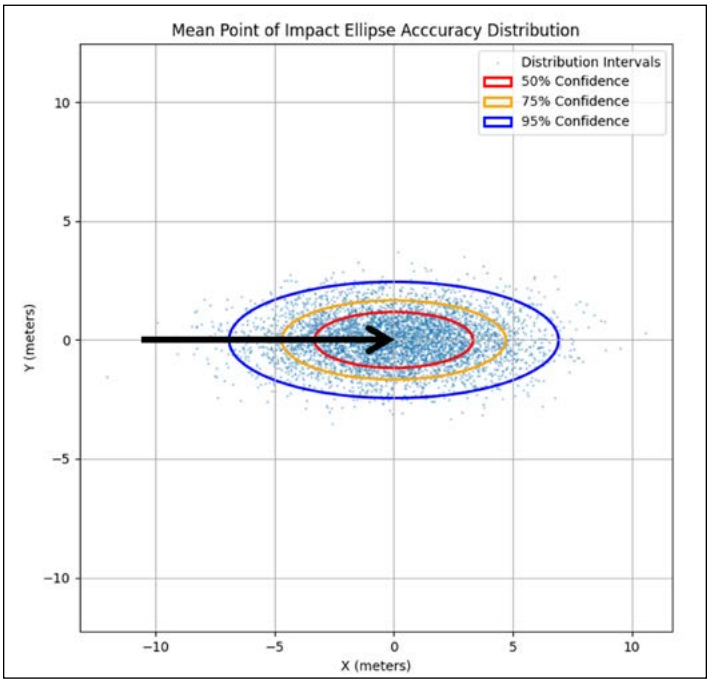
These types of accuracies can be represented by Figures 4 and 5. The distribution around the target reflects the accuracy of the pilot. Accuracy is also paramount for friendly unit protection. It is imperative to measure accuracy as well as to prevent any danger close and risk estimate distances (refer back to Figure 3).[37]

Additive Manufacturing

Consistent with the themes of this article, Soldiers must be prepared to conduct maintenance on these "weapon

CPT Timothy Naudet and SGT Matthew Talty discuss Ghost-X small unmanned aerial system and Shrike targeting integration during test sorties on 2 May 2025 at Fort Campbell, KY, in preparation for a Joint Readiness Training Center rotation. (Photo by PFC Richard Ortiz)





Figures 4 and 5 — Circular Error Probable (CE) vs Mean Point of Impact (MPI) Distribution Example

(The center point [0, 0] meters and covariance [4, 4] meters were chosen arbitrarily and solely represent an example of how accuracy might be measured. NOTE: The equal covariance of [x=4, y=4] in the CE plot assumes that error propagates equally in either axis. The MPI Plot indicates an unequal covariance of [x=8, y=1] where the black arrow indicates a "flight path". This path indicates a higher probability for inaccuracy along the trajectory. NOTE: The negative numbers here are arbitrary and can be considered "Left." The 95-percent confidence interval is the expected standard for performance to contain accurate performance. Figures by CPT Timothy Naudet using Python.)

systems." This will require any COTS/GOTS release of maintenance, which intuitively presents a large legal battle. The solutions then become additive manufacturing (3D printing). A UAS cannot be 100-percent printed; however, many parts that experience damage can be printed, repaired, and assembled in degraded environments. This is the direction needed for long-term UAS success.

Limitations

We believe UAS sections' limitations stem from METT-TC. The book *Ghost Mountain Boys* by James Campbell provides a good example that is antagonistic to our thesis. In World War 2 during the New Guinea campaign, U.S. Soldiers had to crawl within hand-grenade range of Imperial Japanese Army machine-gun positions to successfully engage them.[38] The vegetation was too thick for conventional assault techniques; it obscured enemy positions too greatly, and suppression could not be employed prior to direct assaults. UAS would likely not have been useful in these situations.

There is also precedent to integrate UAS similarly to the weapons squad. It already contains the Javelin Close Combat Missile System and M240B medium machine gun. However, this argument loses traction as the skill set required to employ various UAS scales much differently than that required to employ a machine gun or the Javelin. The latter does not scale while the former scales mostly with METT-TC considerations.[39] Integrating UAS sections similarly to a mortar section will enable scaling of skill sets to UAS of various types and sizes.

Conclusion

The U.S. Army's focus on UAS is correct — we must not lose momentum to achieve tactically superior tactics, techniques, and procedures with emerging technology. We must determine a tactical integration path that mirrors current, successful infantry weapon systems. UAS integration should focus on targeting. UAS tactical applications should focus on known, rehearsed tactical tasks. Training to these standards might enable a direct alignment with combat employment. We should aspire to treat kinetic UAS operations akin to mortar sections. This process will enable a smooth integration of capabilities without disrupting maneuver capabilities nor the previously established weapon systems.

We recommend working with the Maneuver Future Capability Directorate (MFCD), EXFOR, and Army Transformation and Training Command to deliberately experiment placing UAS sections into maneuver formations with the explicit task of supporting maneuver units and purpose of effecting a target. We believe it is imperative to belay other RAS integrations in order decisively integrate a known, proven method of low latency, lethal targeting.

Acknowledging that the EXFOR and MFCD already contain certain GOTS and COTS ISTAR solutions, we recommend resourcing FPV goggles, controllers, and vehicles, and to begin training with EXFOR Soldiers. We also recommend the pursuit of AI and ML software integration but only after the primary engagement criteria of human-analog targeting is demonstrated.

Notes

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The U.S. Army's focus on UAS is correct — we must not lose momentum to achieve tactically superior tactics, techniques, and procedures with emerging technology.

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Light Infantry Infiltration Operations

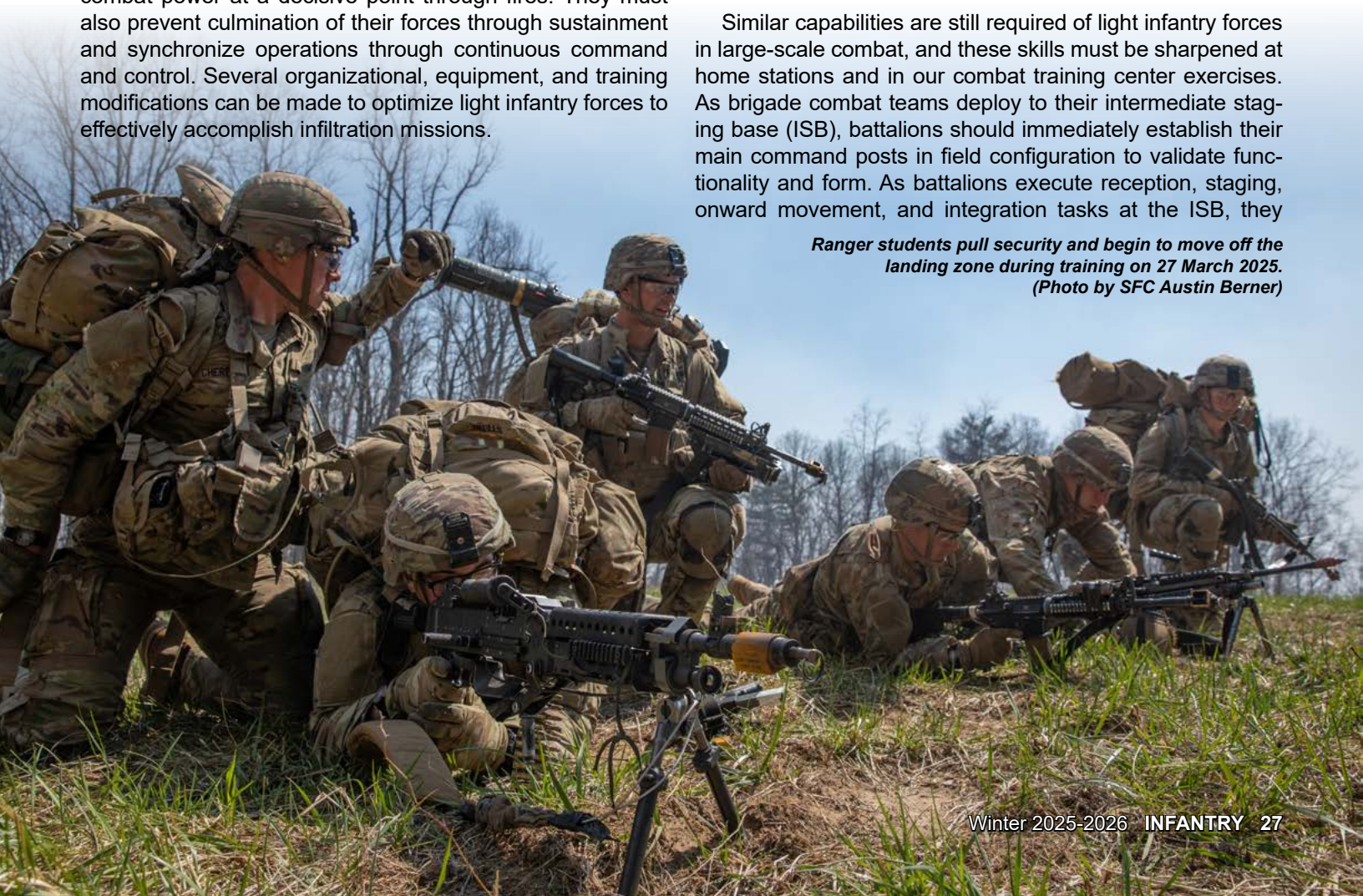
LTC IAN C. PITKIN

How do we best prepare light infantry forces for employment in large-scale combat? By organizing, equipping, and training our light units to conduct successful infiltration operations. These forces must be capable of maneuvering behind enemy forces and conducting decentralized operations by gaining and maintaining contact, providing accurate and responsive fires, sustaining forces behind enemy lines, and providing uninterrupted command and control.

Large-scale combat has often seen light infantry forces used advantageously by moving undetected to the rear of an enemy force to conduct special purpose attacks or establish defensive positions. The Russia-Ukraine war continues to highlight light infantry units that can infiltrate, causing serious dilemmas for adversary forces. These operations have the effect of disrupting enemy logistics, turning the enemy out of their positions, and forcing them to fight in a manner for which they are unprepared. For light infantry forces to be successful in this type of operation, they must organize their combat power to avoid being surprised by the enemy's maneuver through intelligence and prevent the enemy from massing combat power at a decisive point through fires. They must also prevent culmination of their forces through sustainment and synchronize operations through continuous command and control. Several organizational, equipment, and training modifications can be made to optimize light infantry forces to effectively accomplish infiltration missions.

The U.S. Army's 5307th Composite Unit, also known as Merrill's Marauders, was a light infantry regiment designed to execute infiltrations in Burma during World War II. Marching and fighting in severely restrictive jungle terrain against elements of the Japanese 18th Division, the three infantry battalions of the 5307th operated in the rear of enemy forces, disrupting their operations so that the Chinese Army could advance and defeat Japanese forces to recover northern Burma. Each battalion had two subordinate "combat teams," which included not only infantry platoons but also a heavy weapons platoon with 81mm mortars, an intelligence and reconnaissance platoon, headquarters personnel trained to coordinate and receive aerial resupply, and communications specialists for short- and long-range radio communications. Despite the grueling environment and an experienced enemy force, Merrill's Marauders succeeded in their missions largely due to their ability to use their intelligence and reconnaissance platoons to maintain contact with the enemy and use internal indirect fires to break enemy attacks on their positions. To do this, they relied on well-planned and coordinated aerial resupply and communications architecture which provided both short- and long-range tactical radio communications.[1]

Similar capabilities are still required of light infantry forces in large-scale combat, and these skills must be sharpened at home stations and in our combat training center exercises. As brigade combat teams deploy to their intermediate staging base (ISB), battalions should immediately establish their main command posts in field configuration to validate functionality and form. As battalions execute reception, staging, onward movement, and integration tasks at the ISB, they



Ranger students pull security and begin to move off the landing zone during training on 27 March 2025. (Photo by SFC Austin Berner)

should focus on critical capability training. For the intelligence warfighting function, this should include small unmanned aerial system (sUAS) operator training and One System Remote Video Terminal (OSRVT) training in the S-2 section. For the fires warfighting function, units should test their digital fires capability from the platoon Precision Fires - Dismounted (PF-D) through company Lightweight Forward Entry Devices (LFED) to battalion Advanced Field Artillery Tactical Data Systems (AFATDS) up to brigade or down to the battalion mortar platoon and company mortar section lightweight handheld mortar ballistic computers (LHMBCs). For sustainment, battalions should conduct night-vision goggle driver's training and begin to configure low cost, low altitude (LCLA) bundles for aerial resupply.

As part of a brigade's forcible entry, infantry battalions transport troops by aircraft, vehicle serials, or dismounted marches to establish the brigade foothold in the initial portion of the area of operations (AO). After establishing a foothold, battalions must expand the brigade's lodgment by conducting movements to contact to defeat enemy forces in their respective AOs. Enemy forces construct robust obstacle belts in depth along main avenues of approach and position themselves to overwatch engagement areas along the choke points on the routes (low water crossings, bridges, and culverts). Companies should observe and report obstacles and defeat small enemy reconnaissance elements along these routes as battalions maneuver through their AOs. Approaching enemy strongpoints in their AOs, battalions should infiltrate, isolate, and defeat enemy forces with fires. A successful infiltration requires the ability to sustain companies by aerial resupply until the battalion can maneuver to defeat enemy forces and secure a ground line of communication for ground resupply.

After successfully defeating an enemy force, infantry battalions must quickly regain contact with enemy forces and continue to maneuver to establish defensive positions on advantageous terrain in anticipation of a larger counterattack. Battalions must control key terrain while establishing depth for their defense. Establishing a defense in depth is critical because light infantry forces which lack depth can be easily penetrated, allowing the enemy to pass combat power into the brigade's rear. Depending on the terrain, a technique to achieve depth could include placing two rifle companies abreast within the battalion AO, each focused on preventing penetration along enemy ground avenues of approach. The companies can each have multiple section-sized anti-armor ambushes within engagement areas that are well-developed with obstacles, indirect fire targets, and multiple anti-armor weapon systems to defeat enemy exploitation forces. To their front, a third rifle company can establish vanguard anti-armor ambushes with dismounted security to defeat enemy infantry and armor fix and assault forces. Light infantry battalions that can execute the defense in depth in this decentralized manner will be most survivable and effective in defeating adversaries. Enemy forces can be severely disrupted by robust obstacles and then destroyed by lethal loitering unmanned systems (LUS), Dual Purpose Improved Conventional Munition (DPICM), 120mm fire missions, and direct fire anti-tank systems as they maneuver through multiple engagement areas throughout the depth of the AO.

To successfully enable light infantry companies in infiltration operations, infantry battalions must organize, equip, and train their intelligence assets to gain and maintain contact. These assets generally include sUAS, the scout platoon, and potentially a higher headquarters reconnaissance element to the front. During high operational tempo battle periods, companies may fail to operate with enough awareness to fly their sUAS in managed airspace to make contact on advantageous terms. Despite sUAS's limited range in dense, high-canopy wooded terrain, it may be beneficial to consolidate company sUAS operators and systems with the battalion S-2 section, enable this information collection team with transportation, and then move them to launch sites to fly and collect on battalion priority intelligence requirements (PIRs). The battalion staff has enough personnel and cognitive bandwidth to manage and deconflict airspace for sUAS operations.

Additionally, battalion scout platoons are often challenged to move to named areas of interest and observe and report PIRs based on their sustainment requirements and proximity to support vehicles. During the most extreme heat, scout platoons sustain themselves out of their support vehicles but often only end up moving a few kilometers dismounted due to their continual need for water resupply. Reporting from the scout teams to the support vehicles is primarily via mesh radio network, while scouts communicate from the support vehicle to the battalion main command post primarily via the Joint Battle Command-Platform (JBC-P). Scout platoons are often challenged in maintaining situational awareness on company locations and actions due to lack of JBC-P reporting from the main command post to the scouts. Finally, many battalions are challenged to maintain clear reporting, situational awareness, and integrated rehearsals with brigade reconnaissance forces to maintain a common operating picture. Infantry battalions must incorporate a more deliberate integration of reconnaissance and surveillance capabilities into planning, rehearsals, and battle rhythm events to support timely and accurate reporting and situational awareness.

To successfully fight light infantry companies in infiltration operations, the battalion must provide accurate and responsive fires. The battalion's mortar platoon must be lethal and survivable throughout the operation by always maintaining a section in position and ready to fire while conducting survivability displacements. Company fire support officers must plan and execute company-level fire support efforts and enable effective battalion fire support. Company fire support teams must place forward observers within the rifle platoons to provide effective observation to support company and battalion fire support plans. Additionally, battalion fires architectures are most successful when they include robust and redundant communications architecture. Digital fires within an Integrated Tactical Network architecture begin with sUAS operators or forward observers with PF-Ds sending targets to company fire support teams via mesh radio network. Companies then send

A Soldier assigned to 4th Battalion, 31st Infantry Regiment runs to assault an objective during a joint forcible entry operation at Fort Drum, NY, on 10 May 2025. (Photo by SGT Salvador Castro)

missions using LFED via mesh radio network to the battalion fire support element (FSE) AFATDS. The battalion FSE then determines which delivery asset to provide lethal effects on the target. If mortars are utilized, the battalion AFATDS sends the mission digitally via frequency modulation (FM) to the mortar platoon's LHMBCs. If LUS are utilized, the battalion FSE directs the LUS platoon leader via mesh radio network to employ the system and strike the target.

Successful light infantry infiltration operations require battalions to sustain companies in perpetual enemy contact. While maintaining contact with the enemy, light infantry companies are severely challenged in reporting updated logistics status (LOGSTAT) and personnel status (PERSTAT). Typical brigade- and battalion-mandated reporting periods are often insufficient to keep updated logistics and combat power common operating pictures. Battalion main command posts must continually pull information from companies regarding combat power and battle damage equipment losses during and after engagements. As companies lose command vehicles in combat and are unable to report LOGSTAT and PERSTAT on JBC-P, they transition to voice communication (mesh radio network) and reporting typically becomes more sporadic. This affects reconstitution times due to lack of battle rosters reported from companies to battalion and battalion to brigade.

Battalion S-4s need to begin operations with all pertinent vehicle and combat equipment information to rapidly fill out and submit reconstitution packets for battle-damaged equipment. The S-4 NCOIC at the combat trains command post (CTCP) should complete the reconstitution packets and submit to brigade. The field trains command post (FTCP) is typically led by the forward support company (FSC) commander and first sergeant, along with the headquarters and headquarters company (HHC) executive officer (XO). The distribution platoon moves classes of supply from the FTCP to the CTCP, where classes of supply are packaged for delivery by company trains to company logistics rally points. Infantry battalions sometimes attempt to control all the company trains through the HHC commander and FSC XO at the CTCP but often find this arrangement to be unresponsive to company sustainment requirements. When battalions initially attempt this method, the CTCPs often end up relinquishing control of the company trains back to the companies, which invariably improves responsiveness. The battalion fight is to ensure the scheme of maneuver results in secure ground lines of communication for the company trains up to the logistics resupply points.

In large-scale combat infiltration operations, infantry battalions must provide uninterrupted command and control to their companies. Lower tactical infrastructure includes tactical radio network, JBC-P, tactical satellite (TACSAT), and high frequency (HF). The battalion tactical command post (TAC) works best when used primarily as a "jump" command post to establish communications with the companies and brigade headquarters at a forward site as the battalion main command post prepares to move. After the battalion TAC establishes at the jump site, the battalion main command post must be able to tear down quickly, move, and then set-up to initial operating capability within minutes after arrival. The commander, fire support officer, operations officer (S-3), planner, intelligence officer (S-2), and joint tactical attack controller (JTAC) are the primary leadership within the battalion TAC. An operations NCO should also be included to reconnoiter and plan the battalion main command post establishment.

Recent large-scale combat has shown that light infantry formations can achieve substantial effects against enemy forces by conducting infiltration operations. History and experience have shown that to successfully execute infiltration operations, light infantry forces must synchronize intelligence, fires, sustainment, and command and control warfighting functions. By optimally organizing, equipping, and training our light infantry forces in preparation for large-scale combat, we can enhance their survivability and success against our enemies.

Notes

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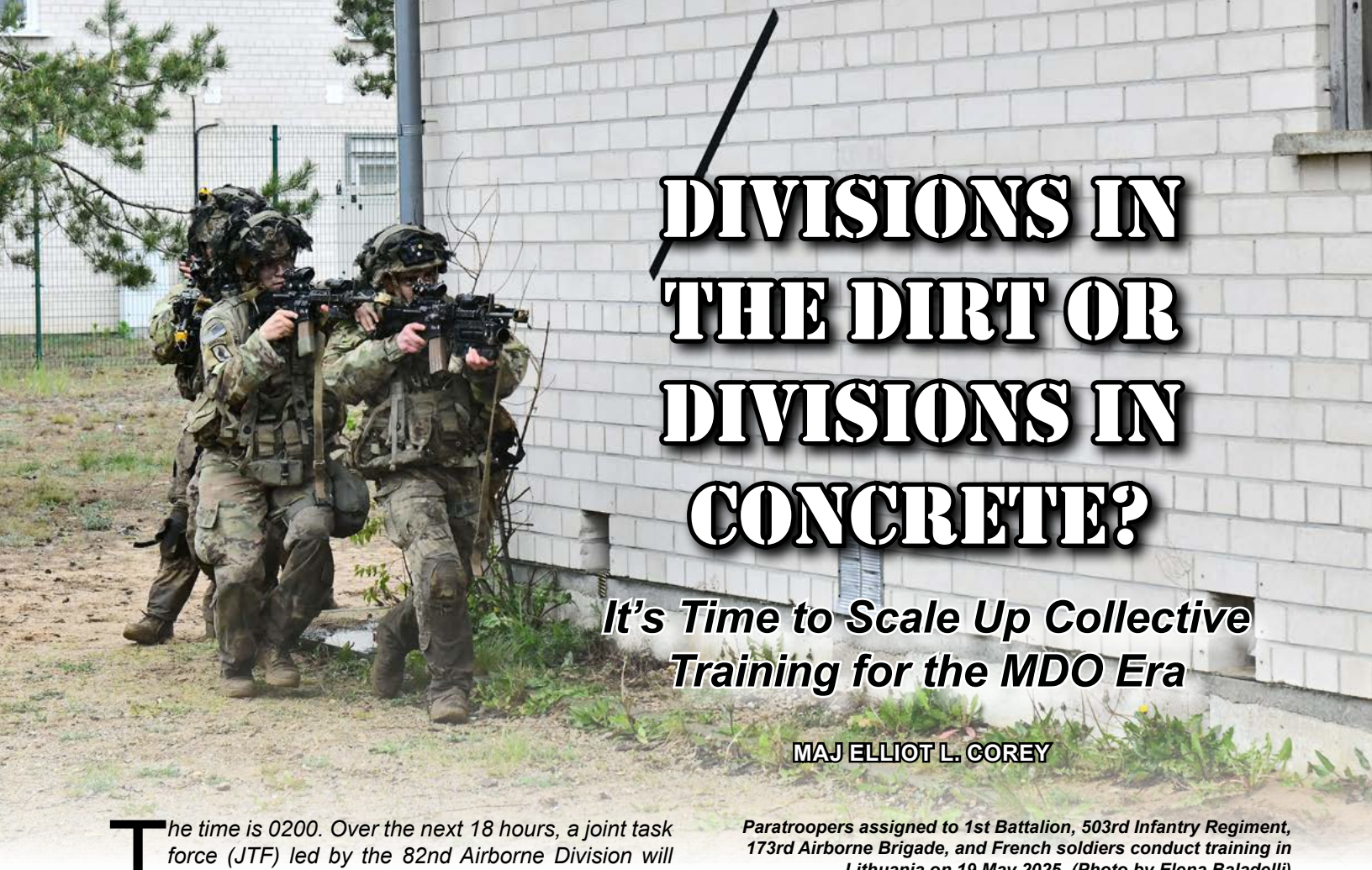

DIVISIONS IN THE DIRT OR DIVISIONS IN CONCRETE?

It's Time to Scale Up Collective Training for the MDO Era

MAJ ELLIOT L. COREY

Paratroopers assigned to 1st Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade, and French soldiers conduct training in Lithuania on 19 May 2025. (Photo by Elena Baladelli)

The time is 0200. Over the next 18 hours, a joint task force (JTF) led by the 82nd Airborne Division will open a convergence window for a joint forcible entry (JFE). A Marine air-ground task force (MAGTF) will conduct an amphibious assault to establish a beachhead. Inland, an airborne infantry battalion and a Ranger battalion will seize an airfield. After establishing both lodgments, the JTF must establish a ground line of communication (GLOC) between the beach and the airfield by fighting its way through dense urban terrain (DUT).

This, however, is not a real-world mission but a hypothetical training exercise held near St. Louis, MO. The exercise builds U.S. Army and joint interoperability by expanding upon the Army's "Divisions in the Dirt" (division integrated) concept. As the military shifts its focus toward large-scale combat operations (LSCO), division and corps headquarters must become experts in battlefield orchestration — shaping the deep with long-range fires, attack aircraft, and integrated capabilities from the joint force, and sustaining the close to ensure subordinate units can dominate their assigned areas.[1] To win the next fight, divisions and corps must incorporate multidomain capabilities into tactical maneuver in all types of terrain.

The time is right to scale up collective training for the multidomain operations (MDO) era. As a potential solution, the Army should create a Joint Exportable Training Package for Existing Urban Terrain (JET-PEUT) much like the Joint Pacific Multinational Readiness Center's (JPMRC's) operating concept. Using the experience of the JPMRC as a model, the Army should create an exportable training capability that replicates a combat training center (CTC) environment in urban terrain in the continental U.S. (CONUS) and elsewhere. The JET-PEUT would provide a way for divisions and corps to train on realistic urban terrain in a live, virtual, constructive (LVC) training environment.

The JET-PEUT's primary advantage is that it can be extremely scalable, tailorable, and exportable, enabling commanders to conduct each JET-PEUT exercise in specific areas that more realistically portray the reality of today's battlefield. With the addition of JPMRC, the Army now can train large formations in nearly every operating environment (OE) possible: jungle, archipelagic, Arctic, mountainous, desert, wetlands, forest, riverine, and plains. There is one glaring omission: the modern urban OE. The JET-PEUT aims to address this gap.

Looking Back to Look Ahead

This isn't the first time the United States has wrestled with the problem of training large formations. In the fall of 1941, as the Germans dominated Europe and the Japanese raced across China, the U.S. Army was struggling to mobilize and train its forces. In response, Army Chief of Staff GEN George C. Marshall devised the Louisiana Maneuvers, a series of large-scale (approximately 400,000 Soldiers) force-on-force exercises in which two armies fought across large swaths of Louisiana, Arkansas, and the Carolinas.[2] These exercises provided field maneuver experience to a green officer and Soldier corps and allowed the Army to test and train on

emerging concepts. The Army learned several critical lessons, including the need to integrate infantry and armor formations, the effectiveness of antitank weapons against armored formations, and the potential of tactical close air support.[3]

Similarly, the Army of the 1980s understood more realistic training would be required to defeat a numerically superior Warsaw Pact military in combat. For example, the 1982 iteration of Field Manual (FM) 100-5, *Operations*, which introduced AirLand Battle doctrine, reinforced the severity of the threat environment: "The conditions of combat on the next battlefield will be less forgiving of mistakes and more demanding of leader skill, imagination, and flexibility than any in history."[4] This period's sense of urgency led to the creation of the National Training Center (NTC).[5] Further, the massive success of the LSCO invasion force during Operation Desert Storm is often attributed to the decade of experimentation, learning, training, and field experience reaped from NTC.[6]

The Army is at another training inflection point. Like the two periods listed above, today, the Army and the joint force must construct ways to train divisions, corps, and joint force headquarters in the most realistic settings. Additionally, with modernization progressing across the Department of War (DoW), we must understand what concepts and equipment will work and how as well as what integrated formations and tactics are required for the modern fight. The JET-PEUT can help accomplish these goals.

The rest of this article is divided into two main sections. Section I, "Why Is JET-PEUT Needed?" argues that the time is right to fix the collective training gap in urban combat readiness across the joint force. The JET-PEUT would offer CONUS-based formations an additional option to achieve multidomain warfighting experience at a reasonable cost. Furthermore, the current doctrine and OE demonstrate the need for increased training capability at scale that the JET-PEUT could fulfill. Lastly, the JET-PEUT would offer opportunities to test modernization concepts across the DoW.

Section II, "What Would It Look Like?" uses the JPMRC as a model for the JET-PEUT. It discusses the main challenges in making the JET-PEUT a reality, including exporting an instrumentation system into a civilian environment and scaling up existing DUT training permissions to incorporate brigade-sized or larger formations. Finally, the article returns to the hypothetical exercise introduced at the beginning to discuss how it could be implemented in real life.

Section I: Why Is JET-PEUT Needed?

Maintaining a comparative advantage over our principal adversaries is essential to national security. Army and DoW leadership are laser-focused on this prospect — eliminating waste and obsolete programs to concentrate solely on training and modernizing for the next fight.[7] Army Chief of Staff GEN Randy George has emphasized that the Army must be ready for any fight, anywhere, and to cut any requirement that doesn't improve warfighting readiness.[8] This is precisely what the JET-PEUT concept is designed to do; it takes these sentiments and presents them in training form. As the Army progresses to Transformation in Contact (TiC) 2.0, it will need additional training options to test new concepts at the scale at which they are designed to function.[9] The current CTC infrastructure could be further optimized to train the division as the unit of action through forward-thinking concepts like the JET-PEUT. The JET-PEUT could improve warfighting readiness by meeting doctrine's requirements for LSCO in DUT and providing a needed venue for experimentation, innovation, and training.

First, the JET-PEUT would help meet current U.S. Army doctrine requirements for large-scale conventional ground forces to conduct MDO in DUT. FM 3-0, *Operations*, states conducting combined arms operations in DUT that integrate joint capabilities, allies and partners, and conventional and irregular forces will be essential to future success.[10] Army Training Publication (ATP) 3-06/Marine Corps Tactical Publication 12-10B, *Urban Operations (UO)*, further stresses the importance of UO proficiency in future conflict — though it does note the difficulty in replicating the complexity of urban terrain in a training environment — such as working infrastructure, high numbers of noncombatants, and the underground, surface and super-surface spaces that impede maneuver.[11]

No doctrine, however, suggests a method to train large formations for urban combat beyond stating that it will be necessary and begins with small unit mastery. Additionally, most urban training facilities at home stations are platoon-level military operations on urban terrain (MOUT) facilities constructed of container express (CONEX) boxes and lacking infrastructure. CTC facilities are more realistic: The Joint Readiness Training Center (JRTC) includes 18 villages (the largest containing 51 buildings), while the Indiana National Guard's Muscatatuck Urban Training Center (MUTC) includes 120 buildings.[12] However, the current limitations in

Figure 1 — The Muscatatuck Urban Training Center
(Photo courtesy of Indiana National Guard)

BCT CTC Rotation Type	FY 2023 Actual	FY 2024 Planned	FY 2025 Planned
National Training Center (NTC)	8	8	8
Joint Readiness Training Center (JRTC)	8	8	8
Joint Multinational Readiness Center (JMRC)	4	4	4
Exportable Rotation Exercises	2	2	2
Total BCT CTC Rotations	**22**	**22**	**22**

Figure 2 — Funded CTC Rotations for Fiscal Years 2023-2025
(Office of the Under Secretary of War [Comptroller]/Chief Financial Officer, Defense Budget Overview)

size, density, and vertical features — coupled with insufficient noncombatant players — result in a lack of realism.[13] As a result, units cannot train on critical tasks ranging from urban navigation to air-ground coordination in an urban OE. The JET-PEUT could close this gap.

Next, the JET-PEUT could provide a way for the Army to identify the optimal task organization to meet the challenge of LSCO in DUT at a reasonable cost. This is a problem set that TiC 2.0 is designed to help solve. Yet, current CTC rotations are still designed around a single brigade combat team (BCT), costing tens of millions for each rotation. Consider the Fiscal Year (FY) 2025 DoW budget allocation of 22 fully funded CTC rotations.[14] For FY25, only two full-scale Division in the Dirt rotations were scheduled, with four additional rotations supported by division tactical headquarters (DTAC).[15] This is terrific output, and these rotations' consistently high level of warfighting readiness is essential. However, a significant portion of the current funding stream is still being devoted to training individual BCTs with minimal focus on joint, interagency, intergovernmental, and multinational (JIIM) and multi-component interoperability. If something like the JET-PEUT could be allocated to four or five rotations annually, the number of headquarters trained by division-integrated rotations could increase by 50 percent. A more creative use of the current funding stream could result in an increased overall readiness assessment (RA) rating across the Army regarding capacity and capability measurements for combat.[16] Thus, a larger number of formations and headquarters certified for combat could be achievable in the near term.

Third, the current OE demonstrates the need for a capability like the JET-PEUT that will drive the rapid innovation required for successful MDO in DUT. The 2022 Battle of Kyiv between the Armed Forces of Ukraine (AFU) and the Armed Forces of the Russian Federation (AFRF) provides an excellent example. This battle involved sophisticated MDO in an incredibly complex OE: a densely populated, modern European city with advanced infrastructure, extensive underground spaces, highways, waterways, canals, bridges, DUT, and peri-urban sprawl interspersed with forests and significant elevation change. As the battle played out, jamming and counter-jamming operations co-occurred over civilian electromagnetic spectrum (EMS) traffic, all severely degrading communications and equipment performance on both sides.[17]

The AFU was the first to realize the importance of maintaining situational awareness by any means possible. The Ukrainians fused critical information flows into an advanced battle network and overlayed it on top of an effective natural and man-made obstacle network, making Kyiv an MDO nightmare for the attacking forces.[18] This intelligence fusion system, called Delta, collected and processed a wide range of information from closed-circuit cameras, traffic cameras, drones, satellites, human intelligence, foreign partners, and other sources into a common operating picture (COP) — tracking the Russian invasion force in real time.[19] Although Delta and other key innovations had been developed and improved since Russia's initial incursion into Crimea in 2014, their rapid employment and ease of use was a combat multiplier for the Ukrainians.[20] Delta considerably improved the Ukrainians' targeting ability, shortening the sensor-to-shooter cycle and enabling Ukrainian artillery, drone teams, and ambush units to engage more targets faster and allocate limited resources effectively.

However, not all innovations or MDO tactics favored the Ukrainians. The Russians began their invasion with a massive multidomain onslaught designed to overwhelm Ukrainian defenses. It consisted of an initial electronic warfare attack to degrade Ukrainian air defense systems, coordinated airstrikes against a broad range of tactical targets, and cyberattacks against Ukrainian governmental infrastructure — all designed to support a swift coup de main of the Ukrainian capital via an air assault and several armored columns.[21] Most of these operations succeeded. Russian deception efforts, designed to fix AFU combat power in the Donbas, were also mostly successful.[22]

Smoke rises over part of Kyiv, Ukraine, on 27 February 2022 during the Battle of Kyiv. (Photo courtesy of Ukrinform via depositphotos.com)

Ultimately, however, the Russians failed to seize the capital as they struggled to synchronize and sustain their various lines of operations. The disparity in situational awareness repeatedly favored the AFU, and they capitalized. This battle provides a clear example for why something like the JET-PEUT is needed. As the Army and joint force expand use of the Maven Smart System and other Joint All Domain Command and Control (JADC2) concepts, it will need an arena to test their capabilities and limitations at the scale and conditions necessary for success on tomorrow's battlefield.[23] Wishful thinking that current battlefield digitization platforms will work as designed when the OE devolves into a situation of maximum complexity is no longer sufficient.

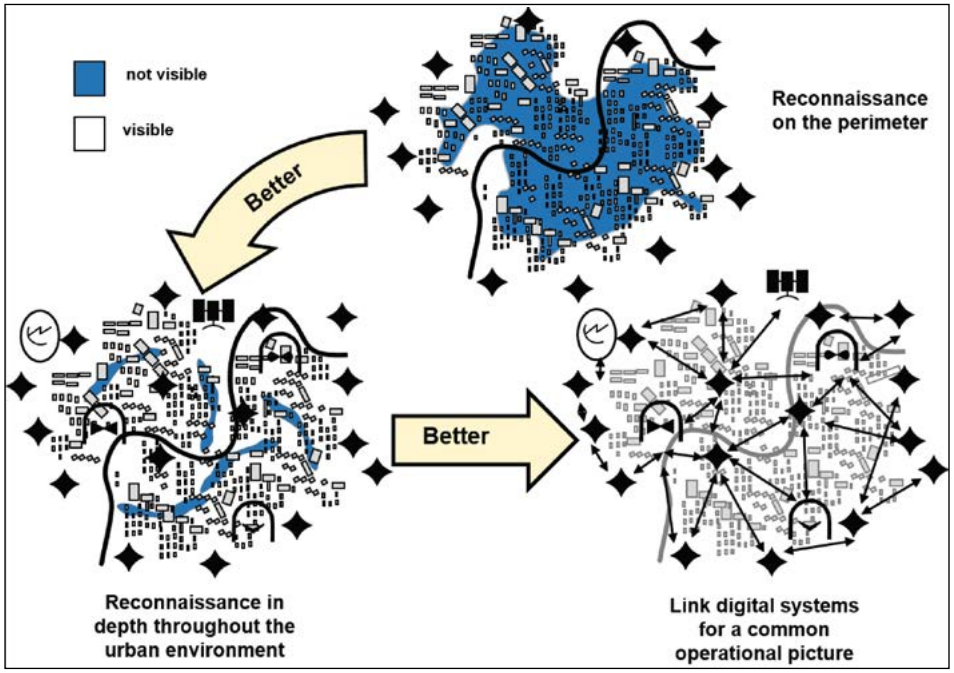

Figure 3 — Situational Awareness is Essential in the Urban Fight

This figure from ATP 3-06 demonstrates the disparity in situational awareness resulting from effective or ineffective reconnaissance and battle network construction before and during urban combat. The top figure, where very little is understood in real time, could be attributed to the AFRF's experience in attacking Kyiv in the first six weeks of the war. This can be contrasted with the bottom right picture, which demonstrates the AFU's effective real-time digital situational awareness created by the Delta system and other innovations on the fly, overlayed with the AFU's internal lines and layered defense in depth.

Lastly, in an era where unmanned aerial systems (UAS) fill the skies, it's increasingly difficult to keep command posts (CPs) undetected and protected from enemy indirect fire (IDF). Using existing hardstands, basements, and underground facilities for CPs is emerging as a best practice, especially in Ukraine.[24] These locations protect CPs from detection and IDF, mask electromagnetic emissions, and can be made to look inconspicuous.[25] However, current division and brigade CPs may not operate this way nor train their Soldiers to establish this type of CP configuration. Several TiC programs and Command and Control (C2) Fix initiatives are designed to enable smaller, more survivable command posts.[26] Still, these efforts will require consistent and realistic training to ensure their functionality. The JET-PEUT could offer an avenue to develop urban-specific tactics, techniques, and procedures (TTPs) before the outbreak of conflict and before American lives are put at risk. Think "Divisions in Concrete" to accompany the Divisions in the Dirt concept.

Section II: What Would It Look Like?

Saying that we need to train large formations for LSCO on realistic terrain is one thing, but making it happen is quite another. Implementing the JET-PEUT would be challenging. While not discounting this difficulty, this section uses the JPMRC as a model to demonstrate that the JET-PEUT is possible. It would not be another CTC, but a vehicle to enhance current CTC rotations. It would enable division and corps headquarters to direct realistic tactical operations in the field while stressing joint and interagency interoperability.

First, the JPMRC shows how creating a specific capability can produce intended results quickly. In just over three years, the JPMRC implemented an Army executive order by transforming into a fully instrumented CTC that conducts rotations in Alaska and Hawaii, as well as partnered rotations west of the International Date Line (IDL) through Operation Pathways.[27] JPMRC "builds BCT readiness and partner capacity, assures our allies and partners of our willingness to train where we will fight, and integrates Joint, Multi-Domain, and Multinational Forces" to build relationships and enhance interoperability.[28] Each rotation is division enabled with either the 25th Infantry Division or the 11th Airborne Division serving as both the higher command (HICOM) and exercise support group for each exercise. The significant role played by the division headquarters stresses and stretches division-level systems and provides combat-credible readiness in theater on the region's terrain.[29] Further, each rotation is unique and constantly evolving, which makes the JPMRC an attractive option for joint service component, special operations forces, and multinational participation. The JET-PEUT could function similarly, offering scalable, exportable JIIM and MDO training under the most realistic conditions and terrain short of combat.

However, we must solve two main problems before making the JET-PEUT a reality. The first is developing an exportable instrumentation system that can be used in existing urban terrain without disrupting the local population. Existing systems — those used at CTCs such as the Home Station Instrumentation Training System (HITS) and the Instrumented Multiple Integrated Laser Engagement System (I-MILES) — are large emitters and not designed for use off military installations.[30] Furthermore, large-emitting legacy systems do not replicate the subtle EMS signature of our current adversaries.[31] This complicates training and goes against

the forward-thinking approach of the JET-PEUT and similar concepts designed to train the dual objectives of EMS detection and signature masking among ground force elements.

The JPMRC is trying to solve this problem. One success is increasing the use of player unit radios and implementing small private networks with integrated Mobile Ad Hoc Network capabilities.[32] These efforts reduce the exercise's overall EMS and connectivity requirements and lessen the individual Soldier's size, weight, and power burden. They also more realistically portray the EMS signature of participating elements. While not a perfect solution that imitates battlefield effects and provides exercise control (EXCON) data, these steps are necessary as the JPMRC looks to increasingly integrate with international partners. Similar concepts could be introduced stateside in the search to safely scale up collective training for LSCO in an urban environment.

The second problem to solve is streamlining the complex coordination required for training off installation. Currently, realistic military training (RMT) off federal real property is regulated by Department of Defense Instruction (DoDI) 1322.28.[33] This document establishes uniform planning guidance, risk assessment authorities, approval levels, legal and public affairs duties, and the guidelines for coordinating with civil authorities. DoDI 1322.28 understands the limitations of installation-only training, stating: "RMT is critical to force readiness; however, environments replicating those encountered in actual operations may not be available in the size or desired level of realism on federal property. Urban environments are the most complex and difficult to emulate on federal property and are the desired environment for most RMT."[34]

However, the current approval chain is long, extending from local city councils to county emergency response services and sometimes even to the state level.[35] Establishing a precedent for streamlined exercise approval and civil-military coordination is a crucial first step. As an added benefit, the staff work required to create RMT perimeters outside federal real property will also inherently stress JIIM interoperability. The difficulty involved in greenlighting the exercise is part of the training value.

Returning to the example exercise proposed at the beginning of the article, the following description explains what it could look like. Interviews with the JPMRC, the Combat Training Center Directorate (CTCD), and local officials from O'Fallon, IL, helped inform the concept.[36] The hypothetical training area would extend from Scott Air Force Base (SAFB) in O'Fallon to the eastern bank of the Mississippi River, utilizing vacant office buildings, warehouses, and shipping infrastructure in East St. Louis and along the eastern bank of the Mississippi River. The beachhead objective and the pockets of urban terrain would be established under military operations areas to manage military airspace, and DoDI 1322.28 regulations cover the ground maneuver perimeters.[37] The areas would also include spectrum management permissions based on coordination with local and state government officials. These stipulations enhance safety and deconflict with emergency response elements and other civilian agencies.

EXCON could run from SAFB, located about 25 kilometers east of the beachhead objective site on the Mississippi River. SAFB could also house the airfield objective, while the XVIII Airborne Corps, serving as the senior Army headquarters could run HICOM from Fort Bragg, NC. The two urban objectives along the route from the airfield to the beachhead could be established within perimeters enforced by military and civilian police to keep local civilians safe.

The exercise could be conducted in a LVC-integrated architecture (LVC-IA) and connected to a broader operation across CONUS. Another BCT from the 82nd Airborne Division could also execute a concurrent mission at JRTC, and the exercise originating from SAFB could facilitate JIIM training by including local, state, and federal law enforcement and emergency response partners.

Once the convergence window opens, the MAGTF, afloat in the Mississippi River aboard two medium landing ships (LSMs), would move to the beachhead objective.[38] Simultaneously, the airborne element, in flight on C-17 Globemaster IIIs, would approach the airfield objective. The 3rd Infantry Division's air-land element begins loading onto C-5M Galaxy and C-17 Globemaster III aircraft at Hunter Army Airfield, GA. Over the next 24 hours, the JTF commander would synchronize the amphibious assault with the airfield seizure, expand the lodgment, and establish a GLOC from the beachhead to the airfield. The XVIII Airborne Corps would continue shaping the deep fight to enable its subordinate elements to support an eventual brigade-sized wet gap crossing in the LVC-IA. (See Figure 4 — A Hypothetical Example Showing What the JET-PEUT Could Look Like.)

Conclusion

Fighting LSCO in urban terrain is inevitable in the next fight. Bypassing urban areas will not always be an option. The Army must scale up its urban combat training to meet this challenge. The gap in large-scale, realistic urban combat training is a critical vulnerability. Mirroring the success of the JPMRC, the JET-PEUT could bridge this gap. By working through local partners to transform existing urban areas into dynamic, instrumented training environments, JET-PEUT could enable the Army to test MDO concepts, develop vital JIIM TTPs, and cultivate agile, adaptable division and corps staffs. While challenges in instrumentation and civil-military coordination are significant, they are not insurmountable. Instead, the difficulty involved in establishing JET-PEUT exercises could offer inherent training value. Embracing "Divisions in Concrete" alongside "Divisions in the Dirt" will increase readiness and help the Army and joint force win our nation's wars.

Lastly, the JET-PEUT offers a different problem to train for and provides commanders with an avenue for innovative exercise design. As the Army continues its transition back to an Army of readiness for LSCO against a near-peer adversary — just like the Army of the 1980s was a purpose-built force designed to defeat the Soviet Union in the Fulda Gap, or Marshall's Army was explicitly created to penetrate the Atlantic Wall and rid the world of Nazi tyranny — we need a capability

to consistently train complex joint operations realistically to prepare for the next fight. Ultimately, in much the same way as the JPMRC provides combat-ready forces in theater, the JET-PEUT can provide combatant commanders with a large-scale, JIIM-qualified, urban-ready component.[39] The risk of inaction is too high. The increased readiness and lethality the JET-PEUT would provide the Army and joint community are absolutely worth the great efforts required to make it happen.

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Balancing Integration and Synchronization in Planning: *Insights from WfX 25-01*

MAJ AUDLEY CAMPBELL
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During Warfighter Exercise (WfX) 25-01, the phrase "set conditions" was frequently used to describe prerequisites for initiating an action or transitioning between phases of the operation. While the importance of setting conditions was evident, there was often a divergent understanding of what specific conditions needed to be met and how to organize the planning cell's efforts to enable them. Understanding which conditions should be time based and what actions should be driven by conditions is crucial to planning and executing large-scale combat operations (LSCO). This article explores how planning cells can organize efforts to anticipate requirements, preserve options, and exploit opportunities. A shared understanding of the specific conditions to support the commander's intent for operations allows the planning cells to prioritize, coordinate, and adjust based on changes in a dynamic operational environment. Decisive military operations depend on fully informed staff integration and synchronization.

The effective execution of division operations relies on the seamless integration and synchronization of capabilities across different time horizons, with the G5 (Plans), G35 (future operations [FUOPS]), and G33 (current operations [CUOPS]) each playing critical roles in ensuring the division achieves operational success. The G5 focuses on long-term integration and condition-based planning. The G35 bridges the gap through mid-term, time-based synchronization, and the G33 ensures that plans are executed in real-time while adjusting to the changing operational environment. This article explores the distinct roles of these planning elements at the division level. In short, planning cells must pursue an optimal configuration that balances integration and synchronization.

Understanding Condition Setting in Division Operations

- **Condition Setting:** In military operations, condition setting refers to the deliberate actions taken to create favorable circumstances for the successful execution of future phases of an operation. According to Field Manual (FM) 3-0, *Operations*, commanders and their staffs assess the operational environment and adjust priorities, change task organization, and request capabilities to create exploitable advantages, extend operational reach, and preserve combat power (reference "How We Fight").[1] This means that before initiating actions or advancing to the next phase of an operation, certain conditions — such as logistics readiness, control of key terrain, or the degradation of enemy capabilities — must be met to enable mission success.

- **Definitions.**

It is essential to establish a baseline understanding of ***integration*** and ***synchronization***. FM 3-0 uses the concept of integration in multiple ways — the integration of warfighting function (WfF), capabilities, and the integration of units and enablers. From a practical perspective, integration brings

Soldiers in Headquarters and Headquarters Battalion, 1st Armored Division analyze and process information during a command post exercise at Fort Bliss, TX. (Photo by PFC Charlie Duke)

everything to the fight coherently. Early integration is necessary due to the coordination required for outside joint and echelon-above-division assets and capabilities.

Synchronization is the arrangement of military actions in time, space, and purpose to produce maximum relative combat power in a decisive place and time.[2] It increases in importance as the plan approaches execution. However, due to the longer lead time for integration, synchronization cannot be achieved during early planning efforts. This suggests a difference in roles between Plans, FUOPS, and CUOPS.

Condition Setting Across Planning Horizons

Condition setting requires understanding the current operational environment and anticipating how subsequent battles will unfold. U.S. Army doctrine emphasizes that higher echelons, such as corps and divisions, synchronize joint capabilities to create opportunities while weighing the main effort appropriately. Staff sections must understand the specific conditions that must be met to ensure the balance of factors favors friendly forces.[3] This synchronization of efforts across domains enables higher echelons to degrade enemy capabilities at multiple levels, setting conditions that allow subordinate units to focus their efforts on decisive points. This is how the staff creates conditions for an "unfair fight." This is anything but simple in practice, since a plan is defined by restraints, constraints, and resource limitations as much as by conditions that must be achieved.

The G5 Plans cell has sufficient standoff from the objective to visualize conditions within an environment where all things — or perhaps most things — can be brought to fruition. Contrast this with the G35 FUOPS cell, which operates at a horizon that more acutely feels the pressures of operational realities. This pressure results from reduced time to react in the mid-range planning horizon, which precludes those actions that require standoff (such as air support requests, echelon above brigade effects, or even logistics support) that have not been appropriately anticipated. Within the mid-range planning horizon, concepts must be carefully synchronized and coordinated so that actions materialize from intent. Mid-range planning is where concept statements become planned actions. The language for this transformation is time, and the product is windows of overlapping conditions within which opportunities are created that can be exploited.

It is within the short-range planning horizon and execution where actual constraints are realized and intended windows of opportunity are discovered to be either conceptual or reality. Here, weather and the adversary will challenge the completeness of the plan. Even uncontested, Murphy will do his best to identify where a plan lacks resilience and those areas overlooked during planning. The G33 must see beyond the plan's mechanics and dynamically execute the operation based on conditions, limitations, and intent.

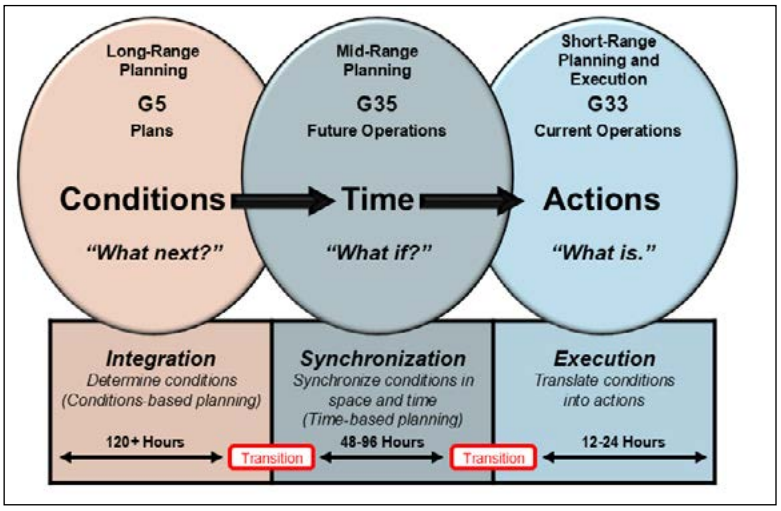


Figure 1 — Focus by Planning Horizon

Organizing Staff Efforts Around Condition Setting

What does it look like to organize staff efforts around condition setting? Here are five staff actions that directly relate to condition setting:

(1) Identify Critical Conditions for Each Phase of the Operation. At the outset of planning, the staff should clearly identify the specific conditions that must be met before transitioning to the next phase. These conditions might include securing critical terrain, achieving logistical readiness, or neutralizing key enemy capabilities. The running estimates created by each staff section must feed into this process, providing updated information on facts, assumptions, constraints, risks, and opportunities. This ongoing assessment enables commanders to adjust priorities and synchronize efforts to shape the battlefield effectively.[4] During WfX 25-01, the division staff understood the importance of reducing the air defense artillery (ADA) threat to enable attack aviation to defeat the enemy's indirect fire capability as a condition for committing ground forces. The staff also realized that establishing forward arming and refueling points (FARPs) enabled sustained combat aviation brigade (CAB) operations. This example illustrates that one condition may lead to subsequent conditions that must be accounted for throughout planning and execution.

(2) Establish Decision Points Based on Conditions. The division staff must establish decision points that directly tie to the desired conditions to be set. This ensures commanders have clear criteria for when to move forward and what risk they are underwriting if the identified conditions are unmet. For example, if a key condition is the destruction of enemy air defenses to enable the CAB's destruction of indirect fire assets, the decision to commit aviation units should be tied to the degradation of those enemy defenses. Understanding these conditions enables the division's targeting effort to focus on the appropriate enemy capabilities with its surface-to-surface fires. Unleashing the full destructive power of the CAB on the enemy's indirect fire capability sets conditions for

our combined arms formations to maneuver on and destroy enemy formations or seize key terrain with reduced degradation of combat power.

(3) Synchronize Time-Based and Conditions-Based Actions. While conditions-based planning provides flexibility, time-based planning ensures that operations progress on schedule. Doctrine emphasizes that higher echelons retain control of scarce resources and use them at discreet times and places.[5] The staff must carefully synchronize both approaches by identifying when time dictates action. For example, certain windows of opportunity — such as favorable weather or fleeting enemy vulnerabilities — might force commanders to act before all conditions are fully met. In these cases, time becomes the driving factor, and the staff must adjust their plans to take advantage of the opportunity, even if specific conditions are incomplete.

(4) Use Deep Operations to Shape Future Conditions. Deep operations are critical for setting conditions for success in future close operations. According to FM 3-0, deep operations influence the timing, location, and enemy forces involved in future battles.[6] The staff must organize their efforts to ensure that deep operations — such as targeting enemy long-range fires or disrupting command and control nodes — are aligned with the overall conditions to be deliberately set. By weakening the enemy's ability to defend or maneuver, deep operations pave the way for successful close combat, enabling the force to engage more favorably.

(5) Monitor Progress and Adjust as Necessary. Throughout the execution of operations, commanders and staff must continually assess whether the desired conditions are being met. FM 5-0, *Plans and Orders Production*, emphasizes the importance of monitoring the operational environment and adjusting the operational approach as needed.[7] If conditions are not being set as planned or the operational environment changes, the staff must be prepared to adjust timelines, reallocate resources, or develop new courses of action (COAs). This iterative process ensures that operations remain flexible and responsive to the evolving battlefield.

Aligning Planning Efforts — Finding an Optimal Configuration

A division staff must follow a structured approach that integrates both time and conditions-based planning to organize efforts around condition setting effectively. This involves identifying what conditions must be met and a shared understanding of when time dictates actions regardless of conditions. Organizing the staff's efforts around condition setting starts with defining the focus for integrating cells during the three planning horizons. The optimal planning configuration will balance integration and synchronization across planning horizons with the three integrating cells.

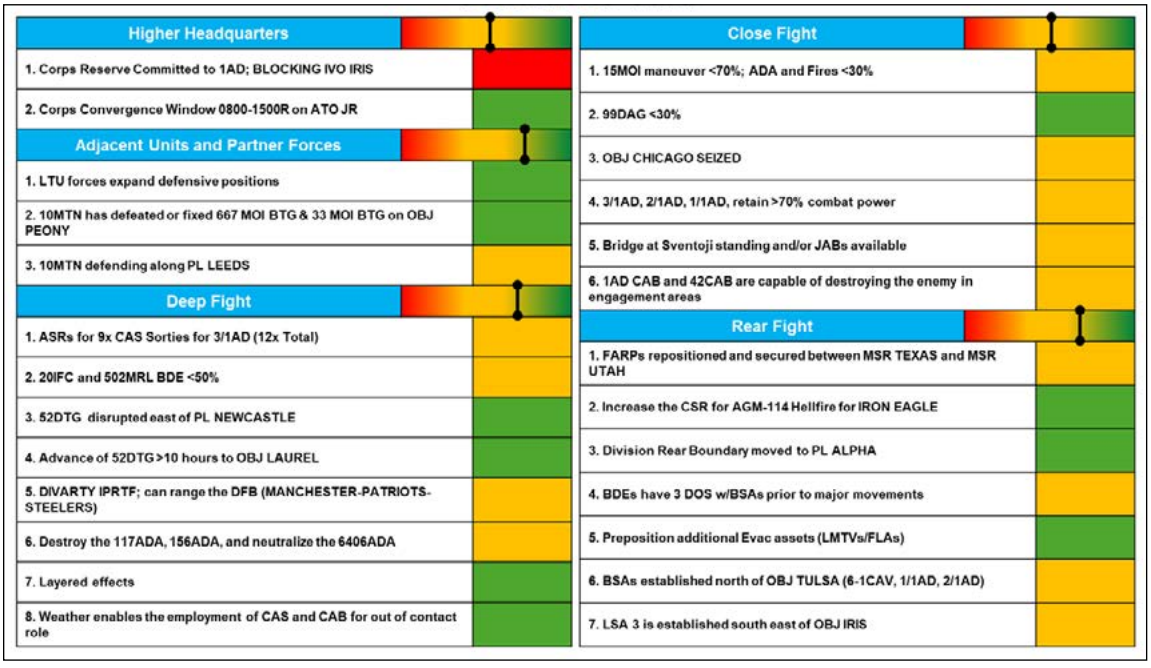
Conditions and transitions are inherently linked.[8] Transitions occur in many forms during LSCO: between types of operations, from phase to phase, between mission command nodes, or from the base plan to a branch or sequel. Managing transitions is critical to maintain tempo and enable decision dominance.

The staff's framing of the running estimate reflects the focus of each planning horizon. A look at each running estimate across integrating cells illustrates the separate-but-complementary focus of each planning horizon. The example below shows how these estimates inform condition setting across horizons.

The optimal planning horizon is one where each planning cell can apply maximal time, effort, and personnel to their function, focus, and fight in a way that creates effective meetings with quality outputs. Due to the depth and breadth of planning possibilities, there is an inherent balance between specialization and overlap. The plan's transition between cells is the critical event to manage the balance. When any of these areas shifts out of balance and the transitions need to be timelier or better executed, the result is one of the suboptimal planning horizons.

The G5 initiates planning in the domain of 120-72 hours. This planning cell is best positioned to integrate capabilities and

Figure 2 — Example Conditions Card



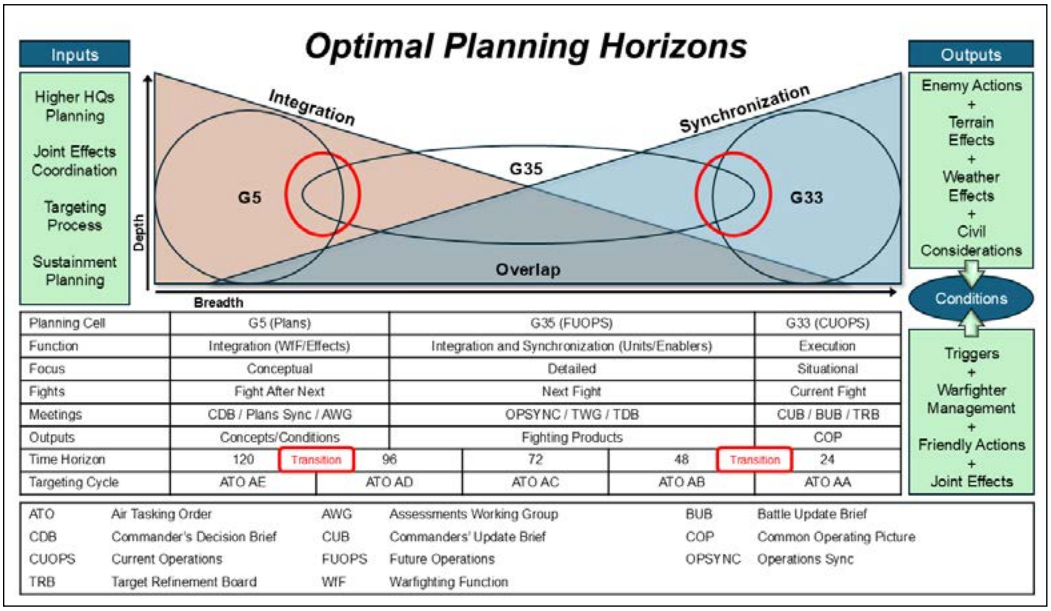


Figure 3 — Optimal Planning Horizons

enablers based on the longer lead time planning required for joint effects, targeting, and sustainment. The G5 develops the initial set of favorable conditions necessary for mission success.

The G35 conducts planning between 72-24 hours and is at the overlap of integration and synchronization as expressed through the fighting products — the synchronization matrix, the execution checklist, and the conditions card. They translate theoretical conditions into planned, time-based actions given a forecast of forces available and the operating environment. As a result, the FUOPS cell experiences a bi-directional pull toward plans and current operations. This reduces the ability of the FUOPS cell to generate depth in integration or synchronization. In other words, the FUOPS cell's most important contribution is the breadth of planning efforts that link the end state to the current state.

G33 then translates the time-based plan into actions given the operational realities. They accomplish this by using situational understanding to develop a common operating picture and create a shared understanding between subordinate units and the staff.

The Plans-FUOPS and FUOPS-CUOPS transitions must be detailed battle rhythm events that manage the knowledge transfer between cells. Informed by a seven-minute drill, each transition must have a measurable outcome expressed through transition products. The most important attributes of the plan's transition are consistency in format, detail, and the level of coordination presented in a tangible format. A successful transition enables the continued development of the plan as it approaches execution.

The running estimate is another product the planning cells can use to maintain balance through the planning horizons. Each planning cell must maintain a running estimate that clearly and concisely articulates its function, focus, and fight. Each running estimate should be a shared, collaborative, and easily accessible document that maximizes knowledge management and minimizes the obstacles to parallel planning. This is especially important when command posts and planning cells are disaggregated or dispersed Figure 4 highlights how each running estimate should have a different but complementary focus.

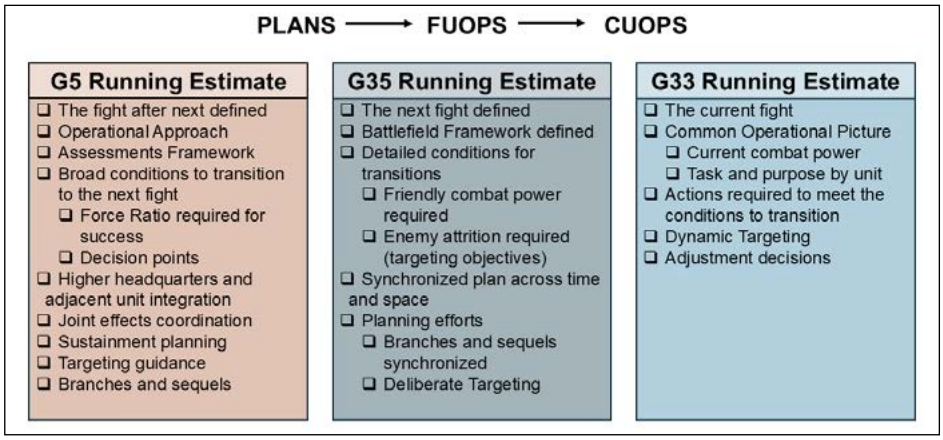
Planning Pitfalls. FM 5-0 examines seven common planning pitfalls.[9] While every planner should avoid these, it is beneficial to recognize that certain cells are more susceptible to some pitfalls than others.

Planning cells most susceptible to planning pitfalls:

- Lacking commander involvement – G35 FUOPS
- Failing of the commander to make timely decisions – G5 Plans
- Attempting to forecast and dictate events too far into the future – G5 Plans
- Trying to plan in too much detail – G5 Plans
- Using the plan as a script for execution – G33 CUOPS
- Institutionalizing rigid planning methods – All
- Lacking a sufficient level of planning detail – G5 and G35

Recognizing the pitfalls that each cell is most likely to encounter allows for evaluating suboptimal planning horizon configurations that are likely to occur throughout the planning effort.

Figure 4 — Framing the Running Estimates



Suboptimal Configurations

A suboptimal planning configuration is any planning horizon array that needs to be balanced. The illustrations shown in Figure 5 highlight examples when one or more planning cells operate outside their intended function, focus, or fight. Note that each shape represents the bandwidth of the planning cells as constrained by work capacity, time available, and planning priorities. Because planning possibilities always outweigh available planning bandwidth, the staff must have a direction aligned with planning priorities. The ability to see yourself and recognize suboptimal configurations enables the division staff to realign planning priorities to return to the optimal configuration.

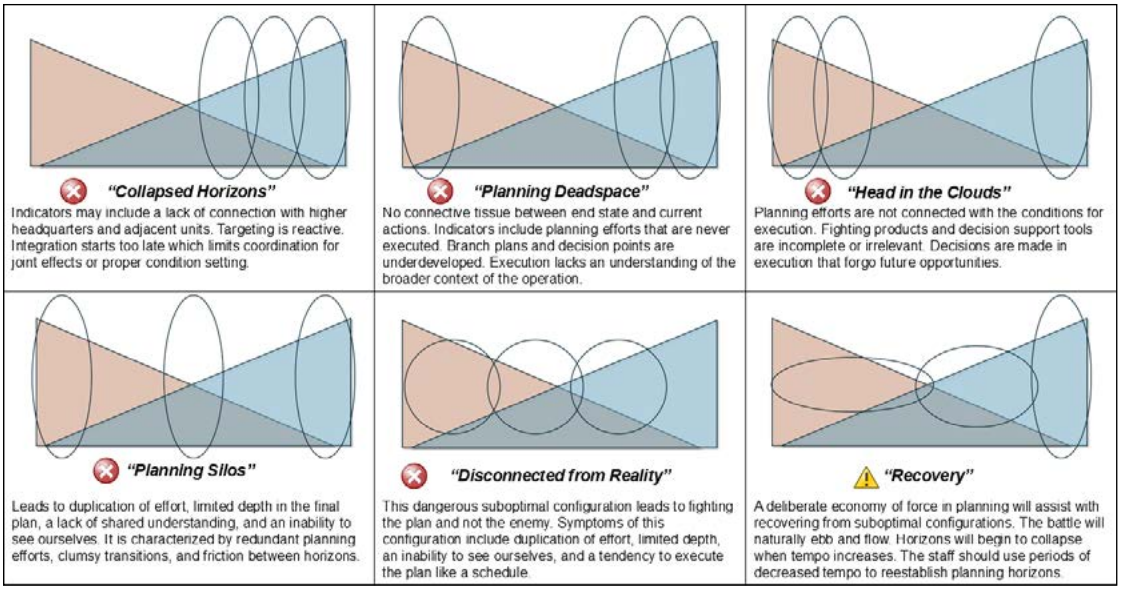
• **"Collapsed Horizons."** Collapsed horizons represent a suboptimal planning configuration where the focus of each planning horizon breaks down, resulting in a lack of cohesion and a reactive operational stance. This is the most common suboptimal planning horizon. In this scenario, the planning horizons merge unintentionally, often due to a high operational tempo, which may prevent proper integration of joint and interagency resources or timely condition setting. Consequently, the division's targeting efforts become more reactive than proactive, responding to immediate threats without the flexibility to exploit long-term opportunities or shape the battlefield ahead of maneuver forces. The resulting fixation on the current fight limits the ability to coordinate for high-level, joint resources and effects that typically require advance planning and disrupt connections with higher headquarters and adjacent units. When horizons collapse, the staff becomes constrained and unable to allocate resources effectively or maintain operational depth, leading to delayed decisions and an increased risk of facing dilemmas instead of imposing them on the enemy.

• **"Planning Deadspace."** Planning deadspace occurs when the Plans cell attempts to conceptualize too far out and creates conditions that do not link to the FUOPS cell's planning fidelity — typically observed by gaps in the synchronization matrix (SYNCMAT) or one that presents an unfeasible plan. This creates a gap between the end state and current actions. Some indicators of this suboptimal planning horizon include planning efforts that are never executed, underdeveloped branch plans, and the absence of decision points that provide sufficient standoff to adjust the plan. Another clear indicator is that the Plans-to-FUOPS transition attempts to transition a plan that does not logically link with current time-based conditions. When there is planning deadspace, the execution lacks an understanding of the broader context of the operation. Therefore, the division forgoes opportunities and does not anticipate requirements based on the gap between Plans and FUOPS.

• **"Head in the Clouds."** Planning efforts are not connected with the conditions for execution. This typically occurs when the plan does not evolve with the conditions in the operating environment. Some indicators of this suboptimal planning horizon are when fighting products and decision support tools are incomplete or irrelevant and decisions are made in execution that forgo future opportunities. Another contributing factor that leads to this suboptimal configuration is when a staff rigidly adheres to the optimal planning configuration rather than recognizing when it is necessary to maximize effort on specific planning efforts.

• **"Planning Silos."** This is the most recognizable suboptimal planning configuration. It can occur in degraded communication windows, distributed locations, poor command post layouts, different planning cells obtaining information from various sources, or one or more planning cells focusing on disparate planning priorities. Planning silos leads to duplication of effort, limited depth in the final plan, a lack of shared understanding, and an inability to see ourselves. Some indicators of this suboptimal planning horizon include redundant planning efforts, clumsy or non-existent transitions, and a lack of communication between planning cells.

Figure 5 — Suboptimal Planning Horizons



• **"Disconnected from Reality."** This is the least likely but most dangerous suboptimal configuration. The CUOPS cell has the least flexibility to deviate from its function. The CUOPS cell has an outsized role in keeping the division connected to operational realities by providing broad situational awareness. Some indicators of this suboptimal planning configuration include duplication of planning effort, limited depth in execution decisions, and a lack of shared

understanding between headquarters, staff sections, and subordinate units. The easiest way to become disconnected from reality is to execute the plan like a schedule, resulting in "fighting the plan and not the enemy."

Recovering — Getting Back to Optimal

Combat operations will naturally ebb and flow. Horizons will begin to collapse as operational tempo increases. It is critical for staff sections to quickly recognize the pull towards suboptimal configurations and deliberately fight to get back to the optimal configuration. The staff should use periods of decreased tempo to reestablish planning horizons. A deliberate economy of force in planning will assist with recovering from suboptimal configurations. For example, the Plans cell should solicit additional planning guidance and/or seek additional decisions from the commander to reestablish horizons. The FUOPS cell may need to transition plans early to increase the depth of planning at a greater distance from current operations. The CUOPS cell can increase the use of the rapid decision-making and synchronization process (RDSP) and deliver radio orders to create planning space for the FUOPS and Plans cells. When a staff determines it is in any suboptimal planning horizon, recovery requires the planning cells to regain balance by reconnecting actions with time-based conditions and concepts in a bottom-up sequence. As the plan transitions between horizons, add time to concepts and situational understanding to time-based products as plans transition between horizons.

Key Insights

The following 10 takeaways can immediately be implemented to balance integration and synchronization in planning:

(1) Do not synchronize too early; do not integrate too late.

(2) Recognize when the staff is in a suboptimal configuration and fight to get back to optimal.

(3) Integrating cells must prioritize their function, focus, and fight (do what they do best).

(4) Integration means different things in each horizon; integrating cells must integrate.

(5) Each horizon contributes to the running estimate in a unique way.

(6) Integrate and synchronize simultaneously but avoid chasing a perfect plan. A 70-percent complete plan now may remain viable where a 100-percent plan would be too late. Anticipate that refinements at the next horizon will complete the plan. Therefore, focus on transitions between horizons and allow time for subordinate refinements.

(7) Design the staff around deliberate condition setting.

(8) Add time to concepts and situational understanding to time-based products as plans transition between horizons.

(9) It is important to understand conditions even if they are not the ones you want.

(10) Maintaining planning horizons enables the commander to anticipate requirements, exploit opportunities, and preserve options. This is crucial to achieving decision dominance and imposing dilemmas on the enemy. Conversely, collapsed planning horizons eliminate options and increase the probability of facing dilemmas.

Conclusion

Balancing integration and synchronization across the planning horizons is critical to achieving success in LSCO. 1st Armored Division staff insights from Warfighter 25-01 highlight the importance of setting conditions at each stage of the operation, ensuring that each planning cell focuses on its unique role while maintaining seamless coordination with other staff sections, especially during transitions. Successful operations depend on recognizing when planning horizons become suboptimal and actively working to restore balance through careful management of both time-based and conditions-based actions. The optimal configuration for planning horizons requires designing staff efforts around condition setting with a clear understanding of when to prioritize integration and when to focus on synchronization. This balance of focus ensures flexibility, mitigates the effects of suboptimal planning configurations, and enables decision dominance. Ultimately, it results in planning efforts that empower commanders to impose complex dilemmas on the enemy and achieve operational success by anticipating requirements, exploiting opportunities, and preserving options.

Notes

[1] Field Manual (FM) 3-0, *Operations*, October 2022, 1-53, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN36290-FM_3-0-000-WEB-2.pdf.
[2] Ibid., 3-18.
[3] Ibid., 2-80.
[4] Ibid., 1-53.
[5] Ibid., 2-80.
[6] Ibid.
[7] FM 5-0, *Plans and Orders Production*, November 2024, 4-95, https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN42404-FM_5-0-000-WEB-1.pdf.
[8] FM 3-90, *Tactics*, May 2023, 8-134.
[9] FM 5-0, 1-113.

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Outthinking Adversaries:

The Future of Warfare in a Multi-Domain World

CPT BOL JOCK, PHD

Military historians, professionals, and strategists attributed U.S. military victories in World Wars I and II to two basic points:

1) The U.S. possessed deeper industrial capacity to support the war, and

2) As a result of American cultural norms and values, U.S. Soldiers were better prepared to outthink their adversaries.[1]

While these variables' impact on American success in the World Wars is debatable, the discussion frames a larger, crucial question for the U.S. Army: What should the Army focus on to remain the dominant land force in future wars?

The Army, along with other elements of the U.S. government, continually reflect on this question.[2] Most recently, the Army introduced modernization efforts, including the multidomain operations (MDO) concept and its subsequent doctrine.[3] These efforts emphasize adapting to the evolving nature of war by the integrating information and warfighting capabilities across multiple domains.

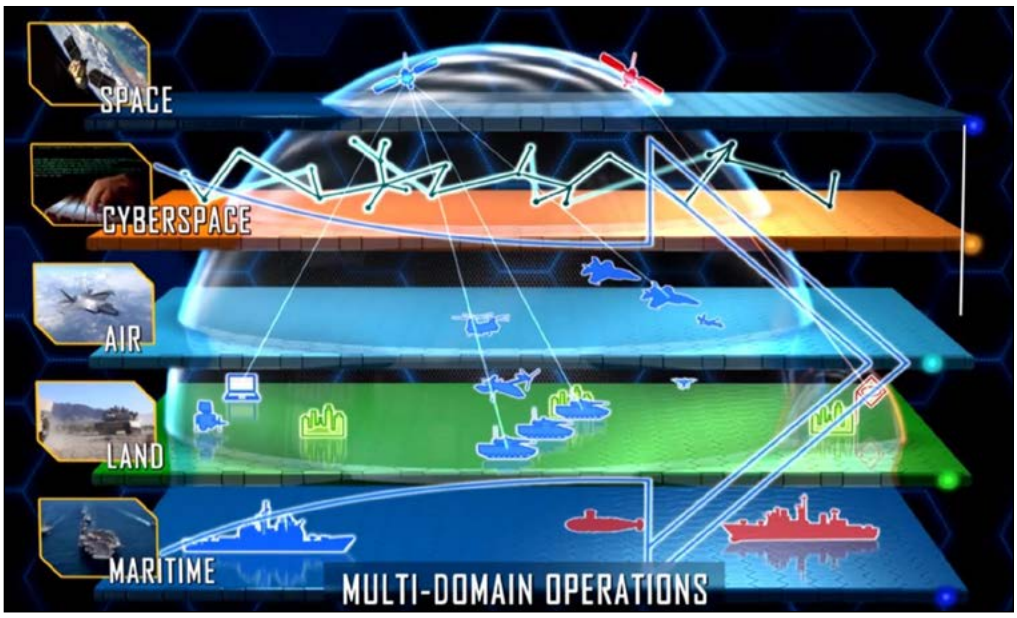

Figure 1 — Multi-Domain Operations (Graphic by the U.S. Army Training Support Center)
MDO describes how the Army, as part of the joint force, can counter and defeat a near-peer adversary capable of contesting the United States in all domains, in both competition and armed conflict.

Other national capabilities, such as irregular warfare (IW) and counterterrorism (CT) forces, could be used to prevent our adversaries from escalating conflicts from competition to general war. However, if preventative IW and CT measures fail, the U.S. Army prioritizes employing smart Soldiers and synchronizing their military and intelligence actions in time, space, and purpose to generate outsized battlefield effects.

The Army may also leverage historical lessons from its past victories to think about how to address emerging battlefield challenges. Regardless of the solution, adapting to warfare's evolving complexities and emphasizing the ability to outthink our adversaries is a critical requirement.

The purpose of this article is to advocate for increasing the American Soldier's ability to outthink the Army's adversaries within the MDO context, paying special attention to ensuring that Soldiers understand how to integrate technology and multidomain capabilities beyond a pure combat situation. To help illustrate this point, I briefly examine the evolution of Army doctrine from WWI to today.

MDO Definition

In response to the 2018 National Defense Strategy Commission (NDSC) report, military scholars and professionals identified the need for a new Army operating concept to account for how the Army and the joint force would explain fighting and winning against our adversaries in new and contested domains.[4] This call to action helped fuel today's MDO doctrine, which the Army articulates in its Field Manual (FM) 3-0, *Operations*.

FM 3-0 defines MDO as "the combined arms employment of joint and Army capabilities to create and exploit relative advantages, defeat enemy forces, and consolidate gains."[5] MDO is the Army's approach to address the evolving character of modern warfare by focusing on the integration of its elements of combat power across five domains — land, sea, air, space, and cyberspace.[6] However, the Army went a step further and also incorporated new domains and threats, such as cyber and unmanned air systems, into MDO. Nonetheless, it is important to appreciate that many of MDO's conceptual elements can be traced back to WWI and WWII.

Evolution of Military Doctrine

WWI and WWII

Military scholars and professionals argue that MDO

principles are not new to the Army nor the Department of War.[7] During WWI, the U.S. Army synergistically combined maneuver, fire, and air support, creating a combined arms doctrine that allowed the Army to suppress enemy fire and seize objectives while applying rudimentary, multi-domain principles.[8] The Army's use of the Curtiss JN-4 "Jenny" for reconnaissance and light bombing illustrates this approach. Initially produced as a training biplane, the Jenny also served in various roles, including reconnaissance and light bombing, and became one of the most iconic American aircraft of the war.[9] Similarly, in WWII, the integration of aerial artillery spotters into the Army's existing combined arms teams also gradually nudged the Army toward multidomain operations and tactics while demonstrating how U.S. Soldiers are keenly aware of the need to outthink their adversaries.[10]

The Cold War Era AirLand Battle (ALB) Doctrine

During the Cold War, the United States and our allies needed a doctrine that could be utilized to effectively compete against the Soviets' Red Army and the Warsaw Pact's massive manpower pool.[11] This led to the creation of the AirLand Battle (ALB) doctrine in the late 1970s and 1980s. ALB aimed to integrate air and land forces to counter a potential Soviet invasion in central Europe, focusing on the synchronization of land and air power to create an overmatch.

ALB doctrine was built on four basic tenets:

(1) Seizing the initiative through proactive engagement with the enemy,

(2) Fighting at depth, striking targets throughout the entire operational area,

(3) Remaining agile to adapt to changing conditions, and

(4) Synchronizing operations across all domains, with all services to find the best solution to emerging militaries problems.[12]

Global War on Terrorism (GWOT): Full-Spectrum Framework (FSO)

While ALB was effective in large-scale operations, the GWOT dictated a different approach to armed conflict, leading to the development of the Army's full-spectrum operations (FSO) doctrine.[13] FSO aimed to position the Army to thrive in the GWOT's low-intensity conflicts and so-called small wars. During GWOT, the Army focused on counterinsurgency (COIN), IW, and CT to address the ever-present need to combat insurgents and non-state actors.[14]

This strategy enabled the Army to operate across both large-scale combat operations (LSCO) and small wars. However, the heavy emphasis on COIN, IW, and CT during this period resulted in the Army's lack of preparedness for large-scale conflicts with near-peer adversaries.[15] Russia's 2008 invasion of Georgia highlighted this issue, prompting the Army to reevaluate its operational doctrine.

Unified Land Operations (ULO)

In 2011, the Army introduced unified land operations (ULO) to describe how it would seize, retain, and exploit the initiative to gain and maintain a position of relative advantage

U.S. and Colombian special operations servicemembers jump out of a C-130 aircraft as part of Fuerzas Comando 2014 in Fort Tolemaida, Colombia. (Photo by MAJ Edward Lauer)

in sustained land operations. ULO aimed to prevent or deter conflict, prevail in war, and create favorable conditions for conflict resolution. However, ULO did not account for the technological advancements made by strategic rivals like Russia and China, particularly in standoff and anti-access and area-denial (A2/AD) systems.

Unconventional Warfare (UW), IW, and CT operations can fill this gap during competition short of armed conflict. Special Forces (SF) Soldiers and other UW agents can operate in the gray zone to counter the threat of standoff and A2/AD without escalating military operations into war. These small SF units and agents conduct expedient and vital military operations to extinguish small fires to prevent the proverbial forest from catching fire.[16] However, if small conflicts scale into conventional war, special operations forces (SOF) evolve their activities into direct action operations to create favorable conditions for conventional units.[17]

Recognizing the shortcomings of FSO and ULO, the Army developed and adopted MDO to account for A2/AD's prominence in LSCO.

Multidomain Operations to Address the Emerging Threats

MDO within the Diplomacy, Information, Military, and Economics (DIME) Framework

Prior to being called multidomain operations, MDO was initially called multidomain battle (MDB).[18] However, scholars and military strategists realized the limitation of using "battle" as part of operation concept, leading to replacing battle with "operations" to include other national actions as part of MDO framework.[19] Using battle indicates actions associated with military engagements, while operations include activities outside of military domains.

From the national perspective, MDO is defined as of various national means to deal with other countries.[20] These means include diplomacy, information, military, and economics.[21] DIME outlines the four pillars used in national strategy

to achieve foreign policy objectives and address security challenges.[22]

The military domains are land, maritime, air, cyberspace, and space, while the social domains include politics, economics, and information. In total, there are nine "domains" that nation-state competitions could occur: politics, diplomacy, economics, information, cyberspace, space, land operations, maritime forces, and military air forces.[23]

While politics, diplomacy, and economics fall under the executive office and Congress, and information is managed by the Office of the Director of National Intelligence, the Department of War can influence the other five domains. During armed conflict, the military is responsible for five domains, making military actions significant factors in winning nation-state competitions. However, civilian leadership can utilize military domains at any time during nation-state competitions, but military actions are often restricted until a conflict threshold is crossed.

In the escalation of the force continuum, wars reside at the end of the continuum, while diplomacy resides on the opposite end, making military underutilized during nation-state competitions that are short of armed conflict.[24] Additionally, it is said that war is a continuation of policy with other means, making it challenging to identify when one activity ends and the other begins.

Blurred Line Between Diplomacy and War

Given that war and diplomacy exist on the same continuum, adversaries continue to blur the line between the two. Recognizing America's military superiority, rival nations challenge the U.S. in non-military domains using methods short of war. To avoid direct military confrontation, they undermine America's interests in other domains without crossing the threshold of armed conflict. Consequently, the blurred line between civil and military operations necessitates that military professionals stay informed about developments outside military domains. This awareness enables them to identify opportunities for contributing to nation-state competition, even in situations short of armed conflict.

Competitions Short of Armed Conflicts

Strategist Sun Tzu asserted that the greatest victory is winning a war without having to fight at all.[25] In alignment with Sun Tzu's thinking, GEN James C. McConville posited, "In competition, our Nation's goal remains winning without fighting by leveraging all elements of national powers."[26] Hence, with MDO, the United States should leverage all available assets to deter our adversaries from escalating competition into armed conflict. Accordingly, even in competitions short of war, the military should play a role in deterring adversaries.[27]

For example, recognizing the blurred line between competition and conflict, the Army operationalized theater information advantage detachments (TIADs).[28] TIADs are specialized military units focused on enhancing information operations and optimizing the information environment within a specific operational theater. This capability could be leveraged by civilian authorities outside of armed conflict and employed by combatant commanders during armed conflict.[29] As a result, TIADs close the capability gap that adversaries could exploit during nation-state competition short of armed conflicts.[30] While they enhance the Army's capabilities in information operations during competition and conflict, the evolving threats posed by an adversary's A2/AD systems highlight the necessity for a comprehensive MDO framework to effectively counter these challenges.

...the blurred line between civil and military operations necessitates that military professionals stay informed about developments outside military domains. This awareness enables them to identify opportunities for contributing to nation-state competition, even in situations short of armed conflict.

The A2/AD Problem

Due to the advancement of the adversaries' A2/AD systems, the MDO framework and capabilities are essential to overcoming these new challenges.[31] These A2/AD systems are newly developed capabilities that aim at preventing or delaying the deployment of the U.S. forces into theater or to isolate our forces from being reinforced. For example, the advancement of A2/AD allows adversaries to use long-range precision strikes and integrated air defense (IAD) systems to create standoff distance and anti-access operations while manipulating electromagnetic spectrum to isolate or disintegrate forces within their respective area of operations.[32] Ultimately, our adversaries aim to undermine U.S. military superiority using those two systems: anti-access to prevent the U.S. from reaching the theater of operations, and area-denial to disorient units when inside theater of operations.

To counter adversaries' strategy to undermine our military superiority via A2/AD, MDO aims to penetrate and disintegrate such standoff systems to facilitate our freedom of movement in and outside the theater of operation and freedom of maneuver within the battlespace.[33] The creation of multidomain units, such as the Army's multidomain task force is an modernization effort designed to overcome A2/AD problems by posturing forces inside theater of operations to provide positional advantage.[34] The positioning of these MDO capabilities intends to overcome the A2/AD challenge by increasing multi-national and multi-services human and capabilities convergence.[35] The U.S. Army defines convergence as "the rapid and continuous integration of capabilities in all domains, the electromagnetic spectrum, and the information environment that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack, all enabled by mission command and disciplined initiative."[36]

To implement convergence, MDO prioritizes the synchronization of multiple assets to produce a great battlefield impact, also called synergy. Like the integration of land forces with aircraft in previous conflicts, synergy is the simultaneous employment of multiple military assets to produce greater effects on the battlefield and create multiple dilemmas for the enemy. Ultimately, MDO aims to overwhelm adversaries by simultaneously executing multiple actions across multiple domains to create a dilemma for the enemy to create a window of vulnerability to exploit.[37]

Recommendations

Integrating MDO Strategies Beyond the Battlefield

MDO emphasizes synchronization of multiple military efforts to achieve a greater military outcome. This approach should be extrapolated to other national efforts beyond just military actions. For example, during nation-state competitions, the United States should synergistically and continuously employ all nine domains to create continuous dilemmas even during competition short of armed conflicts. An example of this recommendation is demonstrated by what COL Mike Rose, 3rd Multi-Domain Task Force commander, asserted: "The U.S. Army needs to constantly advance and transform to not only combat foes but help ally nations with humanitarian assistance as well."[38] This mindset demonstrates looking beyond the traditional role of the Army by examining other national and global initiatives.

Integrating Intellectual Growth into MDO Modernization

Future MDO modernization efforts should encompass not just the integration of military capabilities across multiple domains, but also a robust emphasis on Soldiers' cognitive capabilities to outthink adversaries. The Army should prioritize intellect alongside technological advancement, ensuring that Soldiers are equipped to navigate the complexities of modern warfare. In alignment with this recommendation, GEN Charles Flynn explained, "Weapons are important, but weapons and material are not going to win, organizational change is what is going to drive our solutions."[39] Organizational initiatives such as recruitment programs, Soldiers' quality of life projects, and continuous education program are an essential part of getting the right Soldiers into the Army formation and developing them to perform effectively in complex operational environments.

Integrating AI to Future MDO Modernization Efforts

Future MDO efforts should put more emphasis on artificial intelligence (AI) integration to enhance greater situation awareness and responsive decision-making processes. To demonstrate the vital need of this capability, COL Rose explained, "The Tactical Intelligence Targeting Access Node allows us to integrate terrestrial, airborne, stratospheric and space center data to accelerate our abilities to understand the environment."[40] As the battlefield becomes more complex, technology that could aid in quick and accurate decisions will be invaluable for military leaders. Hence, incorporating AI modernization initiatives now could increase operational advantages in future fights

Conclusion

While material and technological modernization efforts are being prioritized, Soldiers' ability to outthink adversaries is the

An AH-64 Apache attack helicopter takes off near Soldiers participating in the Allied Spirit VII training exercise in 2017 in Germany. (Photo by SPC Dustin D. Biven)

determining factor in winning past wars. Therefore, the prioritization of intellect should drive how the Army implements Soldier recruitment, conducts operational training, performs leadership development, and arranges organizational structure.

Like the two factors that determine the outcomes of WWI and WWII, winning future wars will depend on Soldiers' ability to outthink adversaries and the availability of the U.S. military-industrial complex to support the war. We must enhance the MDO framework by expanding its application beyond military actions to include all nine domains — politics, diplomacy, economics, information, cyberspace, space, land operations, maritime operations, and air operations.

Moreover, this article emphasizes the importance of developing Soldiers' cognitive capabilities alongside technological advancements, advocating for robust training programs. Finally, the article recommends integrating AI to improve situational awareness and decision-making. These strategies aim to prepare the military to outthink adversaries and maintain superiority in future conflicts.

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Data Overload in an Age of Transformation: Mastering the Basics

1LT WILLIAM D. PAWLAK

Introduction

As one of the battle captains assigned to the 101st Airborne Division (Air Assault), I was first struck by the amount of chat rooms, message boxes, spreadsheets, and email functions I had to manage. It was strange that with the technology available to battle staff, we found ourselves locked onto headsets and laptops, as if we were no better than pro-gamers trying to coordinate the actions of an entire division. As the Army's premier light infantry unit specializing in long-range air assault missions, the 101st will continue to master the fundamentals of air assault planning and execution as it approaches its new 2030 framework, which will include deep alterations to its existing brigade combat team structure, like many other units throughout the Army. With the division now as the primary unit of action in a large-scale combat operations (LSCO) environment, it is crucial that staff sections at the division headquarters make commensurate changes to their standard operating procedures and force structure as well. One of these changes must be the way division staff sections manage data overload on the current operations and integration cell (COIC) floor.

This "blended" approach is an easily understood and practical framework utilizing time-tested mechanisms that provide robust analysis to commanders in the field. The danger of an unrefined, data-centric approach, relying predominantly on chat rooms and digital common operating picture (COP) technology, is its inability to reflect information that belies quantitative measurement. It cannot recommend contingencies, provide accurate analysis, nor offer actionable courses of action to the commander. Whereas refined COP tools included in Maven software, for example, can amalgamate vast amounts of information and present it neatly, this tool can easily succumb to data overload without analysis and established guardrails. In order to make effective decisions in a time-constrained environment, commanders require both quantitative and qualitative data sets (data plus analysis). This approach will not only allow staff sections to collaborate more effectively in the COIC but also redirect planners and decision-makers back to established objectives, guidance, and intended outcomes. It will help immunize staff from overreliance on chat rooms and COP tools which, although helpful, have a tendency to produce extraneous data, pull key leaders from their established responsibilities, and provide commanders with inapplicable information.

Data Management and Chat Rooms

"Data management" has become a buzzword for the immense possibilities provided by the Army's new digital software tools and technologies. Whereas in the past commanders relied on sophisticated map overlays and analog products, divisions can now employ sophisticated digital frameworks, relying on instant messaging and display tools that can collect and portray vast amounts of information.

These digital platforms are certainly helpful and can allow commanders to visualize the battlespace more effectively. It is important to remember, however, that the data pathways from the point of origin to the COIC floor are rarely clear-cut but messy and chaotic, and it can be difficult even for experienced operations officers to keep pace with the flow of information the battlespace provides.

Big data — "data that contains greater variety, arriving in increasing volumes and with more velocity" — is becoming common as staffs work to employ upgraded digital systems for battle-staffing purposes.[1] Whether during a warfighter exercise, Joint Readiness Training Center (JRTC) rotation, or even real-world operation such as Hurricane Helene response efforts, for example, it was easy for essential information such as key weapon systems, casualty figures, logistics, etc., to become jumbled up and lost by the flow of other information such as enemy activities, target numbers, and other statistics of friendly information. More crucially, it was difficult to conduct effective cross-talk between sections on these chat platforms since doing so required an endless back-and-forth flow of question and rebuttal. Without writing full-length paragraphs for each entry, it was difficult to capture the significance of certain observations and events via chat functions, and precious time was lost attempting to issue guidance via text messages, hoping recipients were acting upon the latest information. The end result in some circumstances was that each functional cell essentially fought its own version of the fight, detached from the views or considerations of other sections where cross-talk and collaboration were necessary.

With all planners locked onto their laptop with headset, it took the G-33 current operations cell (CUOPs) function to coordinate, synchronize, and integrate the combined efforts of each section in accordance with the commander's intent. As was the experience of myself and others in most recent division-level training exercises, however, we too often found ourselves mired in innumerable chat rooms, message boxes, and COP layers as well. We received reports in one chat and disseminated guidance in another, all while inputting information for briefing purposes in an entirely different slide deck, spreadsheet, or COP tool. Because of the plenitude of data-management tools, many staff sections did not know which "chat" to input their information, submit basic requests for information (RFIs), or report combat power slants and other pertinent information, resulting in chat rooms with excessive and irrelevant information. Furthermore, the COP operated by Maven became saturated with graphics, layers, and folders of each respective functional cell, making it difficult to navigate and revise. It quickly became apparent that everyone could not work on the same digital map at the same time.

In order to cut through the confusion and friction inevitably produced by the battlespace, the answer was often to make even more chat rooms with varying participants. Whether it was specifically for unit S-3s (operations), S-4s (logistics), commanders, pilots, or battle captains, the general tendency to create a myriad of additional chat rooms arose within the first hours of an exercise, all of which contained key information the other chat lacked — the radio-telephone operator for one recent exercise had to monitor the outputs of 20-plus chat rooms. This tendency had the pernicious effect of removing key players from pre-established lines of effort at the subordinate units. Instead of planning for the next 24 hours, for example, S-3s found themselves bogged down by messages and other requests in real time. Battle captains at subordinate units were belabored by continuous RFIs from higher echelons, making it hard to manage efforts at their own level as well. Open message and audio links with unit S-3s and commanders in the field became the norm, as well as staff members simply adding themselves onto the different chat rooms maintained by subordinate units. This was done under the assumption that having accurate, real-time information would better enable the higher formation to provide the commanding general a description of the battlespace. Unfortunately, the result of our efforts was that we were saddled with another imperfect information flow that removed the ability of subordinate units to apply their own analysis and manage efforts at their level accordingly. In our burning desire to acquire accurate, real-time information, we actually impeded our own understanding of the battlespace.

It is important to remember... the data pathways from the point of origin to the COIC floor are rarely clearcut but messy and chaotic, and it can be difficult even for experienced operations officers to keep pace with the flow of information the battlespace provides.

This data overload in both chat rooms and the COP resulted in confusion on the COIC floor. Staff sections spent more time chasing ephemeral data emanating from the battlespace, sometimes losing sight of the key tasks and objectives of the operational plan. Unsurprisingly, commanders sometimes did not know what to do with the information we provided to them during the battle and commander's update briefs. "Staffs often present raw, unrefined data without analysis and are unable to provide the knowledge commanders need to make decisions," as another expert at the Center for Army Lessons Learned observed.[2] The COP presented at these meetings could not display the required info without clicking on a succession of layers and icons and often lacked key info that commanders in the field reported. It took many painful iterations of this pattern to reach a level of proficiency but only through extemporaneous means that were not codified. The question remains: How can we bring economy of force back into the COIC floor?

The Way Forward

It should be noted that problems related to data overload are not a new phenomenon. During the height of the global

war on terrorism, Army and Air Force intelligence officials repeatedly warned about the dangers of too much information — that Soldiers and airmen, especially drone pilots, were inundated with too much data that negatively impacted their ability to see the battlespace clearly.[3] Whereas this may have been confined to higher echelons with specific military occupational and functional specialties then, this dangerous tendency can percolate down to lower echelons as divisions and brigades employ state-of-the-art digital platforms. What commanders often request is information that "blends" the activities of multiple sections, particularly in combat power slants, for example.

There are many things that go into the calculation of combat power, of course, but no planner would seriously suggest that this is solely built on personnel or equipment exclusively. Personnel and equipment cannot be utilized effectively without the other. The result of our recent efforts was "G-14" as we termed it, where both G-1 (personnel) and G-4 (logistics) were able to calculate, predict, and brief accurate COMBAT power slants, including both personnel requirements and equipment quantities that directly influenced decision-making for conducting subsequent operations. The G-14 function then took the result of their combined data pool to offer robust analysis. This group was able to answer the question: With the personnel and equipment on hand, does a unit still have the capability necessary to achieve the task and purpose it has been allocated? Although the data was imperfect and drawn from varying sources, these planners could still intuit patterns and decision points that commanders could anticipate and act upon (Class V rate of expenditure, container delivery system bundles, reinforcement requests, fuel considerations, etc.).

The same could be said for other exigencies where close collaboration is necessary/requested. Cross-talk between G-2 (intelligence) and G-34 (fires) is vital when submitting and ascertaining targets sighted and destroyed (often with the invaluable help of special operations forces elements as well), producing concise and accurate battle-damage assessments that directly impact the commander's understanding of the battle. G-32 (aviation), G-2, and air missile defense (AMD) can all provide a net assessment of enemy airspace, and G-2 and AMD work closely to counter enemy UAS. These functional cells coupled with the G-33 CUOPs can also integrate unit liaison officers into many of these blended functions so that units could directly report up the chain of command. Liaison duty is often undervalued by staff members, and it is not so presumptuous to suggest that it is sometimes an undesirable duty for those chosen to carry it out at the brigade or battalion level. This trend must be turned on its head. LSCO environments require the active participation of liaisons who not only possess a sophisticated operational understanding of what their units are doing, but who can also anticipate, alert, and analyze certain courses of action. Liaisons need to "look closely at specific requirements for critical events and phases and their inputs to the feasibility of actions during those phases/events."[4]

Similarly, the operations sync meeting is one of the most important tools of coordination and should not be relegated to a simple working group on a battle rhythm. Rather, it should be considered a continuous process of units feeding regular updates, alterations, and requests for support to higher levels in a way that is planned and predictable. With a pre-established reporting matrix and a well-defined operations overlay, staffs can anticipate the requirements of subordinate units, recommend contingencies, and identify points of friction between adjacent units. This will also allow subordinate units time to prepare their own assessments and adjust oper-

COL James Stultz, commander of the 2nd Mobile Brigade Combat Team, 101st Airborne Division (Air Assault), conducts operations during the unit's Joint Readiness Training Center rotation on 22 August 2024 at Fort Polk, LA. (Photo by SFC Joshua Joyner)

ations in accordance with the commander's intent. Taking time and devoting resources to analyze information from the battlespace will not only result in better recommendations to the commander but also facilitate more effective guidance. Compiling inputs for nightly orders (fragmentary orders [FRAGOs]) is a routine but necessary process for nesting ongoing operations with approved plans and can be instrumental in conveying the outputs of key decisions. In formulating updated FRAGOs, the staff can take a clear look at how events in the battlespace conform to the operational plan and, if not, recommend contingencies and revised guidance to meet the commander's intent. When published in an easily accessible location, subordinate units can receive updated guidance with properly aligned tasks and purposes. This will eliminate the excess of RFIs and friction points that inundate chat rooms and maintain an operational cognizance of what mission success looks like. Staffs engaged in managing chat rooms and COP adjustments have little time to collect and analyze FRAGO inputs, nor can they disseminate revised guidance adequately to a broad audience in a simple chat box.

Granted, many of the problems mentioned here may be the concomitant effects of annual staff transition windows and the growing pains of building effective battle staffs. Warfighter exercises and JRTC rotations are purposefully designed to test existing standard operating procedures and tactics, techniques and procedures so blaming the faulty use of digital tools for lack of battlefield success is not a veritable excuse. Through trial and error, staffs will steadily learn how to employ digital tools in ways that help commanders visualize the battlespace and make effective decisions. What this article has attempted to show is that this can only be done, however, through understanding the limitations of such technologies. According to Young Bang, the Principal Deputy Assistant Secretary of the Army (Acquisition, Logistics and Technology), "'What we need is data processed to information, but more importantly, insights. Insights for the commander, insights for the Soldier. Not to tell them what to do, but insights so they take action...'"[5] Insights are provided by staffs aware of what operational success looks like, who can provide analytical expertise using information that is often incomplete, messy, and not easily quantifiable. Although we may strive to attain as much real-time data as possible, it takes time and brainpower to make this data flow intelligible at every echelon of command. This cannot take place if reporting via chat rooms without a defined reporting matrix becomes the primary means of sending and receiving information.

Conclusion

Some of these prescriptions to the increasing problem of data overload referenced here may seem simplistic. Things like a reporting matrix, operations sync, and nightly FRAGOs are not new procedures and should all be pre-established before executing any training exercise or operation. As the 101st Airborne Division and other units throughout the Army work to implement new command-and-control capabilities and digital software tools to streamline COIC functions, it is important to not lose sight of these time-tested mechanisms for alleviating the inevitable friction that arises from the battlespace.

It is important to remind ourselves that digital management tools are not a permanent solution to the perennial "fog of war" that can infect even competent staffs, and that these tools can actually produce friction if not properly maintained or nested with the traditional mechanisms of the battle staff. These new capabilities are not a substitute for the rigorous analysis staffs are required to conduct to make the battlefield comprehensible and retain the initiative in a large-scale fight. This analysis requires time, patience, and a keen awareness of what is important to commanders in the field in an environment that is constantly changing. It is doubtful whether any sophisticated digital tool or chat room can achieve this on its own.

This approach recognizes that information originates from a variety of sources and is messy, chaotic, and not easily quantifiable. Simply putting this information into one system (such as Maven) cannot ameliorate the negative impacts of data overload, nor is it a substitute for actual analysis.

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Delegating to Discomfort:
Where Training Meets Development

MAJ MELISSA VARGAS
CPT BRIAN HESTER
SFC PHILLIP RICCIO

While "staffing your company" is imperative and often emphasized, many commanders centralize critical information, leading to cognitive overload. Without learning how or where to start, "staff your company" becomes another set of buzzwords. Without a functioning command post (CP) to enable shared understanding, companies collapse when commanders have to disconnect from it. To meet modern operational demands, command teams must delegate to discomfort, empower junior leaders, and institutionalize CP functions that mirror higher headquarters with an approach akin to apprenticeship, where every individual constantly prepares to replace wounded leaders.[1] It sounds dark, but large-scale combat operations (LSCO) demand that we prepare our subordinates to replace us.

Company trends at training centers will not improve without deliberate garrison preparation. Increasingly complex operations require companies to manage more assets, decentralize, and operate dispersed. Many units struggle with delegation, underdeveloped junior leaders, and insufficient shared understanding, further overloading command teams. Rigid top-down structures prevent leaders from focusing on tactical and operational objectives. Compounding this is the lack of doctrinal guidance on staffing the company and creating CPs that parallel battalion functions, leaving command teams as single points of failure. With limited training rotations to address issues, many command teams confront these challenges too late.

This article describes leader development concepts to help company- and platoon-level leaders visualize their unit as a flexible, evolving organism cultivated from training and development rooted in apprenticeship. Delegating with extreme ownership is inherently uncomfortable but essential for leadership development. Subordinates need opportunities to "fail forward" and grow into their future responsibilities. Therefore, apprenticeship in garrison ensures success in field operations. Get comfortable being uncomfortable.

Soldiers from 1st Squadron, 2nd Cavalry Regiment establish a new command post location during Exercise Saber Junction 25 at the Joint Multinational Readiness Center in Germany on 6 September 2025. (Photo by MAJ Brian Sutherland)

Staffing the Company

GEN Stanley McChrystal's experience building a "team of teams" against Al-Qaeda in Iraq (AQI) underscores the inefficiency of siloed management structures. To outpace AQI, he dismantled barriers and single points of failure, fostering cross-functional shared understanding and empowering lower-level decision-making. This transformation turned the task force into an agile organism capable of rapid, operator-level decisions once reserved for higher ranks.[2] Building a team of teams at the company level starts in garrison on day one of leadership in a company, from the commander down to the radio-telephone operators (RTOs).

Leaders often underestimate the potential of conventional Army units to achieve autonomous lethality, assuming such complexity is reserved for special operations units with lower turnover. However, companies can operationalize adaptive leadership and disciplined initiative by powering down func-

tions and decisions that command teams are not uniquely responsible for. To get there, the CP must train as consistently and rigorously as teams, squads, and platoons — not just talk about it at after action reviews (AARs).

Instructions Somewhat Included

While doctrine offers concepts for company-level operations, it lacks detailed guidance outside of tactical standard operating procedures (TACSOPs). Army publications outline the purpose and functions of command posts but focus primarily on battalion-level operations.[3] Mission command doctrine references companies peripherally, while Stryker brigade combat team (SBCT) doctrine defines what a company CP must achieve to enable commanders to conduct troop leading procedures.[4] Training and evaluation outlines such as 71-CO-00500 and 07-CO-5135 describe CP tasks but do not address how to structure human and technical resources. This ambiguity allows flexibility based on formations, missions, and talent.

Most information on CP functions focuses on layouts and communications monitoring in TACSOPs, often lacking clear roles and responsibilities. If the company hasn't tested CP setups during field training, these publications are often outdated or not validated. At the Joint Readiness Training Center (JRTC), many commanders fail to establish independent CPs, centralizing information to themselves or a small group.[5] The same trends afflict company command teams at JRTC, ultimately rendering them cognitively overloaded and ineffective. Units that do not prepare subordinates for leader casualties are less effective than those that do.

Fill Doctrinal Gaps with Development

In an ideal world, the company headquarters would have the right personnel: a CP NCO in charge (NCOIC) who is at least an E-6, a communications NCO fluent in tactical terms and graphics, a medic who plans ambulance exchange point (AXPs) for the first sergeant (1SG) to refine, and a supply NCO who designates company trains locations while the executive officer (XO) manages combat power. Realistically, leaders must work with the talent they have to build the talent they need. Junior leaders who underperform should not be discarded; rather, they should be given responsibilities that allow them to fail forward and grow. Having them brief operation orders (OPORDs) becomes a learning opportunity, and assigning speaking roles to junior leaders builds confidence and shared understanding. The commander, 1SG, and XO are responsible for quality control of the OPORD, but they emphasize and refine guidance. This coaches their subordinates as apprentices who may have to fight the plan without them. The more accustomed subordinates are at answering for the company the better the command team can maintain a holistic common operating picture (COP) and address friction points. This practice also increases the company's chances of survival when leaders become casualties.

There are also situations in which the duties and responsibilities conflict. So, we ask the existential question, "Is the mortar section leader also the headquarters platoon sergeant?" The answer is purple. Army Techniques Publication (ATP) 3-21.10, *Infantry Rifle Company*, says that the mortar section sergeant performs the duties of the headquarters platoon sergeant when possible.[6] The official publication on the tactical employment of mortars states, "The mortar section leader is not tasked with or appointed fictitious responsibilities or false duty positions such as headquarters platoon sergeant."[7] Doctrine occasionally conflicts, and leaders must apply it appropriately.

Realistically, leaders must work with the talent they have to build the talent they need. Junior leaders who underperform should not be discarded; rather, they should be given responsibilities that allow them to fail forward and grow.

The best approach is understanding each Soldier's duties and developmental goals.[8] For example, a highly competent mortar section leader could coach training room personnel during downtime from mortar-specific training that should take priority. A lower-ranking training room NCO may serve as an alternate headquarters platoon sergeant. Conversely, if the mortar section leader is administratively weak, the 1SG might assign additional responsibilities and mentorship to develop their skills and provide measurable results for an NCO evaluation report. Leaders must balance operations, training, development, and team dynamics to staff their company effectively.

Delegating to Discomfort

Field and garrison environments differ significantly, but building a tactically successful company starts with cultural changes, empowerment, and ownership in garrison. Effective command teams ask, "What are the tasks I am uniquely responsible for?" and delegate everything else. In the information age, no single individual can process all available data; empowering junior leaders to make decisions is essential.[9] Companies may lack a formal staff, but they are still responsible for facilitating warfighting functions by mirroring their higher headquarters' planning efforts and fostering collaboration. While none of this information is new or groundbreaking, the following sections provide practical applications to help company and platoon leaders apply "delegating to discomfort."

Before addressing task delegation below the commander, 1SG, and XO (the "top three"), it's important to understand their general responsibilities. The backbone of the organization is the NCO Corps. Team leaders, platoon sergeants, and the 1SG drive baseline personnel readiness, directly impacting equipment readiness and realistic training. Effective training and combat performance are built on the foundation of lethal people maintaining lethal equipment. The bottom

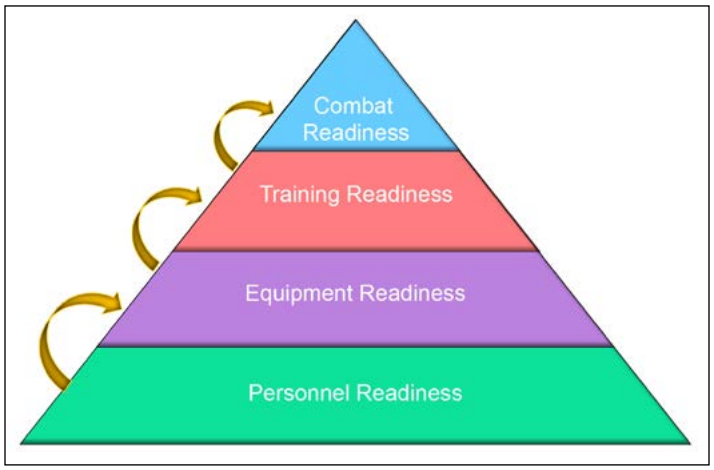

Figure 1 — Readiness Pyramid Scheme (Graphics courtesy of authors)

line is that healthy people operating healthy equipment will execute the most realistic training to fight and win in combat (see Figure 1).

NCOs form the foundation for equipment and training readiness; poorly managed personnel weaken the company's ability to maintain equipment, train effectively, and remain lethal. Within the top three, responsibilities are distributed to balance the cognitive load and ensure cross-functionality. The 1SG oversees personnel readiness, working with platoon sergeants to manage medical, evaluations, discipline, and human resources. The XO collaborates with platoon sergeants and leaders on equipment readiness and resources. The commander manages unit training and issues guidance to align with higher headquarters' objectives. Figure 2 depicts how these roles overlap, requiring constant cooperation, shared understanding, and disciplined initiative to ensure the company operates as a cohesive unit rather than relying solely on one leader for continuity.

Delegate Tasks, Not Risks

When in doubt, company-level leadership can ask themselves the four following questions to determine how to staff the company in any setting:

- Do I have the resources to do this task internally?
- Is this task my responsibility or risk to assume?
- Is there someone else that must do all or part of this task anyway?
- Who will benefit from doing this task more than me?

Reminder: Commanders will still own the risk when analyzing what and to whom to delegate. Thorough training and leader development reduce the risk incurred when command teams choose to delegate. Allow subordinates to fail without letting them become failures.

Foundational Apprenticeship in Garrison

Developing these habits and mentality as second nature begins in the training room. The CP in garrison includes additional duty representatives and the headquarters personnel. Each staff section above the company tasks troops with

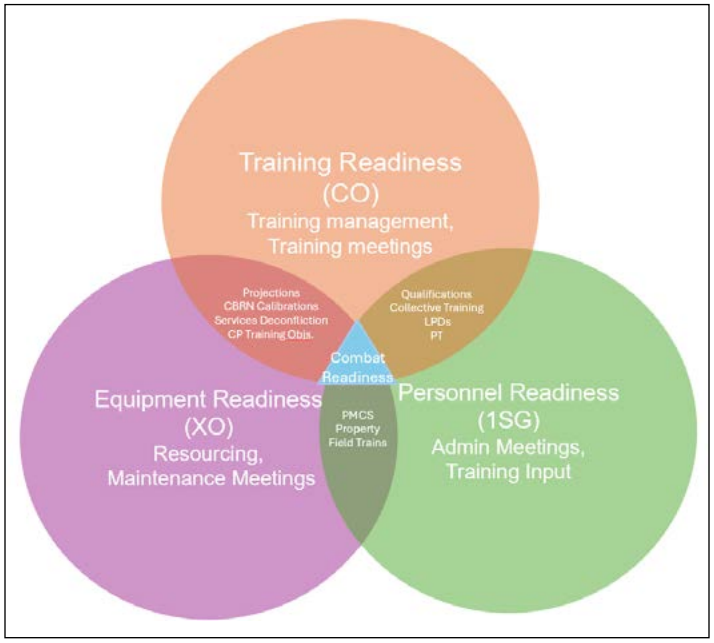

Figure 2 — Top 3 Responsibility Overlap

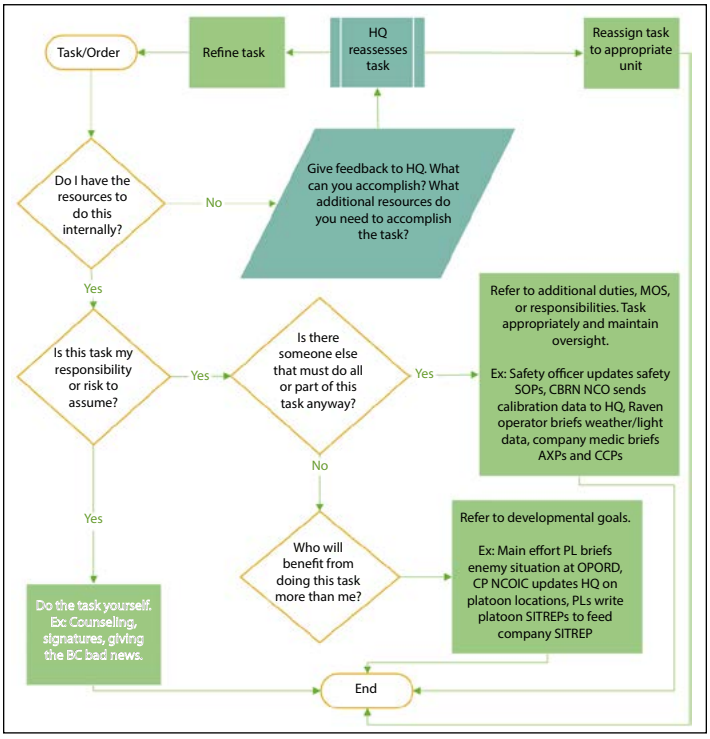

Figure 3 — Delegation Flow Chart

requirements for the company command team to align to a paralleling point of contact to facilitate those tasks. The volume of those tasks is more than the commander, 1SG, and XO can manage alone, and they must develop leaders through certification, training, and schools to fill the gaps. Most tasks from traditional Army Regulation 350-1, *Army Training and Leader Development*, requirements (sexual harassment response and prevention, master resiliency training, etc.) and safety have directly aligned representatives at the company level, and the delegation is clear. Another way to frame more ambiguous tasks is to determine what shop people in the

company would fall under if they were in a staff section or which warfighting function they'd support.

Shouldering a Fair Share of the Task

Avoid overloading the training room; view it as the nexus of the CP in garrison and give these Soldiers comparable development to line Soldiers. The S-1's primary link to the company is the 1SG and training room. The 1SG and platoon sergeants handle routine tasks like monthly reports, with the commander providing final approval. Human resources tasks fall to NCO leadership, while the orderly room supports filing, compiling, and organizing as directed by the 1SG. The training room should not be solely responsible for generating training rosters, inputting Digital Training Management System (DTMS) records, or maintaining documents found in additional duty books. Instead, it manages certifications, currency, and projections of additional duty personnel under the 1SG's guidance. The training room NCOIC manages the additional duty roster, confirms training currency, and coordinates backfills with NCO leadership based on gain/loss projections. The same Soldiers in the training room will likely be the CP in the field, which will only be as good as the time you put into them in garrison.

Command teams should recognize that additional duty representatives at the company level may need platoon support. For example, platoon chemical, biological, radiological, and nuclear (CBRN) representatives can assist company-level counterparts in maintaining platoon CBRN equipment and managing training. Platoon DTMS representatives help distribute Army Fitness Test and weapons qualification data entry, while ask, care, escort (ACE) representatives provide depth and proximity in the support system, similar to Combat Lifesaver-certified Soldiers in the field. Though platoons may not replicate every duty at the company level, the CP must establish parallels where workload, equipment, or risk is most significant. Teach them to manage and anticipate; a mediocre training room finishes the 1SG's checklist, and a great training room gives the command team assessments and solutions to anticipated problems.

Figure 4 — Example Additional Duties Roster

COMPANY ADDITIONAL DUTY ROSTER

ROLE	NAME	DATE CERTIFIED	DEPARTURE FROM UNIT (DEROS/PCS/ETS)	Days Remaining	APPT ORDERS COMPLETE	CERTIFICATE IN HQ BOOK
ABCP						
Supervisor			1-May-26	476		
Primary			6-Aug-25	208		
Alternate			18-Aug-25	220		
Armorer						
Primary		FEB 2021	30-Dec-25	354		
Alternate		APRIL 2021	27-Jun-25	168		
Arms Room						
Officer			30-Jul-25	201		
Alternate Officer			20-Nov-25	314		
Arms Room Accompanied Access						
Alternate			18-Jul-25	189		
Alternate			10-Feb-26	396		
Alternate			5-Jan-27	725		
Arms Room Key and Lock Custodian						
Primary			30-Dec-24	-11		
Alternate			27-Jun-25	168		
Arms Room Seal Officer						
Primary			30-Jul-25	201		
Alternate			20-Nov-25	314		
AER Representative						
Primary			9-Dec-25	333		
Alternate			30-Sep-26	628		
Automated Air Load Planning Systems Coordinator						
Primary			30-Jul-25	201		
Alternate			18-Aug-25	220		

Delegate to Develop, and Develop to Delegate

When in doubt, delegate by equipment. The company may lack intelligence personnel, but it operates systems requiring information collection, such as small unmanned aerial systems (sUAS). Tasks from the S-2 often pertain to these systems, where the senior sUAS operator becomes the most appropriate point of contact. For example, the S-2 may request a consolidated list of operators and training hours, which the 1SG tasks the company's sUAS master trainer or senior operator to compile and validate. Similarly, when a task requires a master gunner (MG) and none are available, the next best option may be a Senior Leader Course graduate. Prioritizing schooling ensures Soldiers are prepared for leadership duties and operational investment.

Sending Soldiers to schools is essential, even if it means losing them to headquarters later. In garrison, the S-3 shop may generate many administrative tasks from personnel such as the school's NCO, MG, land and ammunition NCO, fire support officer (FSO), or chemical officer. The 1SG coordinates school-related tasks while internal experts, such as MGs or Heavy Weapons Leaders Course graduates, communicate with the battalion MG through the XO. Land and ammunition responsibilities fall under the XO's purview, often supported by platoon leaders designated as OICs. While companies may lack CBRN specialists, they must assign CBRN OICs and NCOICs, regardless of military occupational specialty, alongside maintenance and communications NCOICs with clearly defined roles. Schools develop these talents, which command teams should be proud to send Soldiers to. Although it's frustrating for leaders to see talent pulled to headquarters, investing in schools strengthens the company and reflects its excellence.

The CP must be trained with the same rigor as squads and platoons. It is not merely a secretarial entity but the company's nerve center, seamlessly adapting between garrison and field environments. Leaders must foster initiative by creating a culture where team members proactively address challenges and drive toward collective goals. This requires consistent counseling, effective AARs, and deliberate efforts to empower Soldiers at all levels. Investing in its professional development and readiness in garrison establishes foundations for success in the field.

Combat Apprenticeship in the Field

Companies must leverage every training event to build CP proficiency, integrating CP functions into squad and

platoon field exercises. For instance, the CP can practice battle tracking, distributing overlays, and collecting reports during platoon training. Key personnel, such as the company medic, communications representative, and supply NCOs, should coach platoon medics, RTOs, and armorers, creating stronger apprenticeship ties between the CP and platoons. Like team leaders refining their training objectives to support platoon leaders, the CP must refine its goals using AAR inputs from previous events. By building on lessons learned, the CP evolves into a unit capable of directly supporting tactical and operational success.

Field operations demand a fluid transition from garrison, where typical responsibilities remain but adapt to meet field requirements. The 1SG prioritizes sustainment, casualties, and field trains, while administrative tasks take a backseat. The XO oversees equipment, parts, and communications, often running an alternate CP node to balance rest cycles and transitions with the main CP. Collaboration between the XO and 1SG ensures logistics overlap at friction points. Meanwhile, the commander focuses on the scheme of maneuver and coordination with adjacent units to meet the battalion commander's intent.[10] Again, the top three still cannot manage the company's workload alone. They and the company must prioritize rest cycles to mitigate tracer burnout. To distribute the load, the company CP should mirror the battalion's warfighting functions, with personnel designated to facilitate communication with battalion counterparts. The FSOs have established channels through habitual relationships, but the company must align responsibilities for warfighting functions that are more ambiguous.

Command Post Basics in the Field

Infantry doctrine identifies the CP NCOIC as a critical role, often filled by the mortar section leader when possible.[11] Still, their primary responsibility remains to employ fires with the FSO.[12] However, SBCT doctrine designates the signal support NCO (commo rep) as the CP NCOIC, overseeing the local security plan, shift schedules, battle tracking, and significant activities (SIGACTs) tracking — not the "commander's RTO."[13] Command teams must develop their skills through collective training events if the commo rep lacks expertise in maneuver dialogue and SIGACTs. By leveraging strong vehicle commanders and other NCOs in the CP to train them, command teams can cultivate effective CP NCOICs, as described in ATP 3-21.11, enabling command teams to focus on resolving friction points and synchronizing maneuver. Most importantly, the company must maintain command nodes with redundant systems to monitor key nets. While battalions employ main CP (MCP), tactical CP (TAC), and logistics nets, companies should mirror this structure. In mounted formations, the commander's vehicle monitors battalion and company MCP/TAC nets, the 1SG's vehicle oversees battalion and company logistics and casualty evacuation nets, and the XO's vehicle tracks both nets to monitor combat power and coordinate maintenance.

The Commander's Field Staff

Command teams must align planning responsibilities by warfighting function to members in their planning cell, whichever way they decide to do that. Understanding that the company commander's priority is to produce the troop orders and ensure that the company meets the battalion commander's intent, we also know that the company commander should not be a single point of failure. Likewise, the top three shouldn't be the only links from the company to the battalion. The commander must delegate as many portions of the operations order as possible, even beyond the XO and 1SG, to facilitate shared understanding.

Note: CP personnel support the commander, 1SG, and XO, focusing on survivability and shared understanding in case of leader casualties. The commander prioritizes intent, maneuver, and fire control. Simultaneously, the team prepares and briefs the remaining sections with guidance from the top three.

Align platoon planning responsibilities based on their assigned tactical task and purpose. During movement, the lead platoon manages the terrain model and terrain analysis brief, identifying primary and alternate routes. The main effort conducts enemy analysis and briefs it, while the remaining platoon briefs the friendly situation. The FSO can also perform intelligence preparation of the operational environment and assist platoons with analysis. Although not annotated in Figure 5, operators like the mortar section leader and senior sUAS operator contribute as well. The mortar section leader develops the fire plan with the FSO and commander, and the senior sUAS operator briefs key weather data and information collection guidance. Command teams must also train junior leaders such as the medic, supply NCO, and commo rep to conduct analysis and brief at the OPORD to enhance shared understanding, eliminate single points of failure, and prepare them for future responsibilities.

When Discomfort Becomes Comfortable: A Best Case Scenario

Key contributors to the order's process should attend battalion planning events when possible, especially when integrating with a new unit under time constraints. For example, a company serving as the brigade reserve in the defense may need to rapidly occupy a battalion's battle positions (BPs) to close a gap. Suppose the supported battalion's combined arms rehearsal (CAR) is in two hours. In that case, the commander can take their vehicle, sUAS operator, FSO, commo rep, and quartering party to the battalion's MCP. Meanwhile, the 1SG and XO prepare the remainder of the company to meet the quartering party once they receive refined positions.

At the MCP, the commander directs the sUAS operator to integrate with the S-2's information collection plan, the FSO to integrate with the battalion's fire plan, and the commo rep to secure a compatible radio and establish communi-

cation protocols with the MCP. The commander and quartering party OIC receive the scheme of maneuver and additional guidance from the S-3, after which they take 10 minutes to finalize a rough plan with boundaries and direct fire control measures. The commander then sends the quartering party to pull the company into BPs and execute, while the commander and select "staff" participate in the CAR. Afterward, the commander transitions to the new area of operations, receives a handover from the previous commander, and provides the XO and 1SG with sustainment guidance for the medic and supply NCOIC. Finally, the commander and main CP get an updated COP from the alternate CP before the commander begins refining BPs.

Planning Duties and Responsibilities

CO:
- Produce TRP orders and analog overlays

XO:
- Produce paragraph 4 of the OPORD, focusing on supplies, logistic packages, recovery, and maintenance. Add icons to terrain model
- Coordinate with S-4 for Class IV and engineering support

1SG:
- Directly supervise mission preparation and assist medic, supply and XO in creating paragraph 4. Add icons to terrain model

FSO:
- Create Annex D, including overlays (digital/analog)

Senior RTO/Commo:
- Receive or copy all overlays from higher (analog/JBC-P)
- Produce and distribute digital overlays
- Produce paragraph 5, add icons to terrain model

COIST/ALL Platoons:
- Prepare terrain analysis, enemy situation/analysis, and overlays (digital/analog);
- Parallel plan with company, PLs brief their own platoon scheme of maneuver at OPORD

Supply:
- Coordinate through XO for resupply before and during first 24 hours of mission
- Assist 1SG in paragraph 4, add icons to terrain model

Medic:
- Identify locations for ambulance exchange points, casualty collection points, and helicopter landing zones
- Identify and brief changes to medical support portions of TACSOP
- Assist 1SG in paragraph 4, add icons to terrain model

Platoon RTOs:
- Report to senior RTO and FSNCO to copy overlays for platoon and populate platoon internal JBC-P graphics

PLs Rotate Troop and OPORD Brief Responsibilities:
- A: Prepare friendly situation for OPORD brief, brief at OPORD
- B: Build ENY/CIV situation, assist as red hat for FSO, and brief ENY/CIV siuation at OPORD, and ENY icons to terrain model
- C: Terrain analysis, platoon will create terrain model for OPORD and rehearsals, brief terrain at OPORD

Figure 5 — Example Planning Division of Labor

This culture frees the commander to focus on friction points and guidance without being tied to the CP or burdened by minor issues that junior leaders can solve without being prompted. Scenarios like this highlight the potential of junior leaders to excel beyond their prescribed duties. However, such capabilities are only realized when company command teams invest in development and build an apprenticeship culture at every echelon.

Conclusion

Building an effective company starts with deliberate efforts in garrison, where command teams embrace "delegating to discomfort," empowering junior leaders and preparing them to step into greater responsibilities under any circumstance. This approach mirrors an apprenticeship model, where all Soldiers are trained to replace their leaders if necessary. These practices must continue at every training opportunity, from platoon exercises to larger events, ensuring that the CPs evolve as critical nerve centers. Leaders must prioritize sending Soldiers to schools, filling gaps in expertise, and creating depth in additional duties to ensure continuity.[14] A culture of growth and ownership is essential. Every task should be viewed as an opportunity to develop future leaders capable of managing the challenges of multidomain operations. By training subordinates as apprentices and balancing their responsibilities with developmental goals, leaders prepare their units for LSCO.

No one-size-fits-all approach exists. Varying personalities, manning cycles, and competence mean leaders must tailor these insights to their unique formations. Conflicting doctrine adds complexity, but success lies in adapting systems to fit unit strengths and weaknesses. By institutionalizing these practices and embedding them into the company's culture, leaders will prepare their units for tactical success and develop Soldiers and officers into confident, capable leaders who thrive in complex, multidomain environments. Delegate to discomfort, empower your people, and build a company CP to meet the challenges of multi-domain operations head-on.

Notes

[1] COL Andrew Morgado and 1LT Melissa Czarnogursky, "The Science, Art, and Practice of Mentorship: Making Army Techniques Publication 6-22.1 Come Alive," *Military Review* Online Exclusive, November 2024, https://www.armyupress.army.mil/Journals/Military-Review/Online-Exclusive/2024-OLE/Mentorship/.

[2] GEN (Retired) Stanley McChrystal with Tantum Collins, David Silverman, and Chris Fussell, *Team of Teams: New Rules of Engagement for a Complex World* (Penguin Audio, 2015).

[3] Army Doctrine Publication 6-0, *Mission Command: Command and Control of Army Forces*, July 2019.

[4] Army Techniques Publication (ATP) 6-0.5, *Command Post Organization and Operations*, March 2017; ATP 3-21.11, *Stryker Brigade Combat Team Infantry Company*, November 2020.

[5] MAJ Mitchell Rambin, "Company Command Post Operations at the JRTC," Global Security (blog), n.d., https://www.globalsecurity.org/military/library/report/call/call_01-16_ch5.htm.

[6] ATP 3-21.10, *Infantry Rifle Company*, May 2018, para. 1-19.

[7] ATP 3-21.90, *Tactical Employment of Mortars*, October 2019, para. 1-25.

[8] Richard McConnell, "Counseling: Setting the Conditions for Junior Officer Success," *Field Artillery Journal* (June 1999).

[9] McChrystal et al., *Team of Teams*.

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

[11] ATP 3-21.10.

[12] ATP 3-21.90.

[13] ATP 3-21.11.

[14] Text generated by ChatGPT.

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So, You're an Executive Officer — Now What?

MAJ JONATHAN BUCKLAND
1LT RYLEY BENDEWALD

So, you're an executive officer (XO) — now what? Several key responsibilities fall within your scope, whether at the company/troop/battery or battalion/squadron level. This article draws on the invaluable lessons learned from experienced leaders who have served as a troop XO, squadron maintenance officer, and squadron XO in an armored brigade combat team (ABCT). While the article is scaled in dealing with maintenance operations and doesn't cover the entire scope of an XO's responsibilities, we hope these insights can serve as a guiding light, helping you to navigate the complexities of your new role. You can directly impact your organization by understanding the processes, your team, and the support you can seek from higher headquarters.

Maintenance Work Order Management

Managing maintenance work orders is essential for keeping your unit's equipment operational. The process begins with the Global Combat Support System-Army (GCSS-Army), a digital program that tracks all maintenance requests and work orders for a unit's assets.[1] While navigating GCSS-Army may initially seem overwhelming, it's important to remember that numerous training resources are available to help you become proficient. You can find multiple online tutorials and unit-level subject matter experts, and we recommend consulting YouTube when in a pinch. Creating a quick reference guide for common work-order statuses can streamline your oversight. Understanding the full life cycle of a work order, from initiation to completion, is more than just tracking deadlines — it's about identifying bottlenecks, prioritizing repairs, and keeping your commander informed on equipment readiness. As a leader in your organization, it's essential to know how to utilize GCSS-Army and, at the very least, be able to pull your unit's equipment status report (ESR).

Soldiers in the 3rd Infantry Division conduct preventive maintenance checks and services on a light medium tactical vehicle. (Photo by SGT Savannah Roy)

Navigating the Nuances of the Equipment Status Report

The ESR is vital for assessing your unit's readiness. Its dense data can be daunting without a clear approach, but mastering it is key to improving your unit's long-term readiness. Beyond the basic non-mission capable-supply (NMC-S) and non-mission capable-maintenance (NMC-M) designations, the ESR provides a detailed snapshot of equipment availability, maintenance timelines, and part statuses.[2] Each line item includes status codes that indicate specific issues — like "BB" for back-ordered equipment or "B7" for parts with price changes — which require careful interpretation to understand the full scope of delays. Pay close attention to the equipment's estimated ship date (ESD), as discrepancies between projected and actual timelines can signal deeper systemic issues.

Additionally, cross-reference the ESR with your unit's maintenance logs to identify recurring problems such as frequent failures in specific systems, enabling you to address root causes and improve long-term readiness. Four reference codes for acquiring parts are 11, 19, 45, and 71. An 11 code means it is still waiting for funding, while 45 denotes that higher has funded the part and you should look for a ship date. A 19 code means that the part has been placed in your unit's "bin" at the Supply Support Activity (SSA), while 71 indicates that the part is at the SSA but not in the bin. With familiarity, the ESR can transform from a cryptic report into a powerful decision-making and resource-allocation tool.

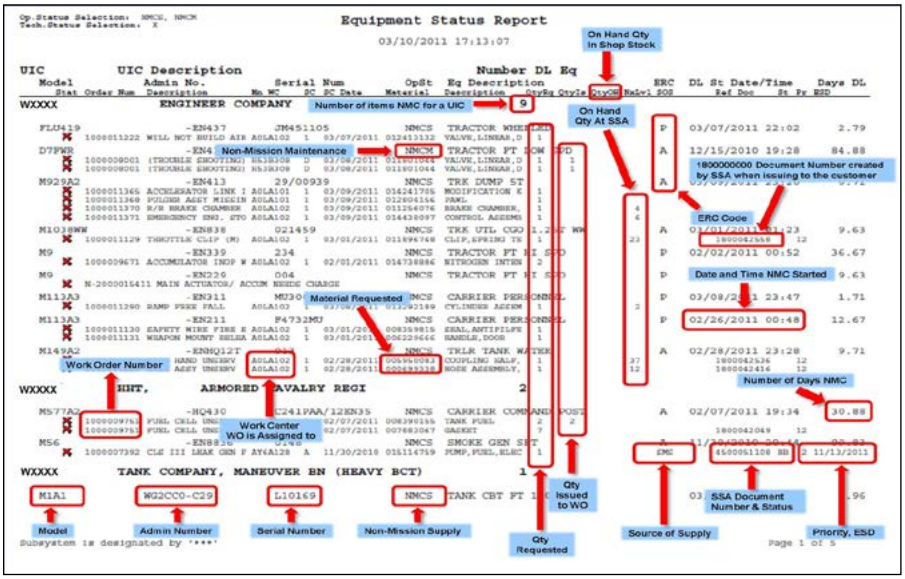


Figure 1 — Example of a "Cheat Sheet" Equipment Status Report

The ESR is not just another document — it's a tool that all leaders, especially XOs, should always have in their leader book. At first glance, it may seem intimidating to try and comprehend. However, plenty of cheat sheets are available, and a YouTube series by the U.S. Army Combined Arms Doctrine Directorate breaks down each section.[3] Understanding how to read the ESR is a skill and a necessity for success as an XO. This product is how you inform your higher headquarters and big Army about your organization's needs. While Excel tools are helpful, leveraging existing systems like GCSS-Army and common operational picture (COP) systems ensure consistency and efficiency — fight off your ESR and ensure that it is accurate and clean.

Understanding Your Maintenance Structure and Leadership Dynamics

As an XO, it's crucial you understand the structure of your maintenance organization and the dynamics between its key players. In an ABCT formation, your maintenance team consists of the 91-series maintainers, each with specialized roles. These maintainers primarily operate within the forward support company/troop (FSC/FST), with most assigned to the base maintenance platoon. A smaller contingent is detached to line troops as part of their field maintenance team (FMT). It's your responsibility as XO to ensure the FMT is successfully integrated into the team. A balancing act often arises between the troops and support leadership over accountability and control, with administrative oversight typically managed by the FST and operational priorities set by the line commander. The bottom line is that FMTs are part of your formation, and their success in maintenance operations will directly impact your overall operational readiness (OR) rate. Incorporate them into your team.

The maintenance control section (MCS), a crucial part of the maintenance structure, oversees and coordinates the squadron's maintenance efforts. Consisting of the squadron maintenance officer, the maintenance control officer, the squadron maintenance technician, the maintenance control sergeant, and the maintenance platoon leader, the MCS aligns with the Command Maintenance Discipline Program (CMDP). This alignment provides a clear strategic direction and ensures that your role in the squadron's maintenance efforts is significant and well-defined.

Logistics and Supply Chain Oversight

As XO, a key part of your role is overseeing logistics and supply chain operations. To be prepared and confident in this role, you need to be familiar with SSA operations, including how your unit interacts with this organization for requisitioning parts, equipment, and supplies. It's also important to understand the timelines for ordering critical items and establish a relationship with the SSA accountable officer to streamline processes. Additionally, you need to get to know the Army Oil Analysis Program (AOAP) and its role in predictive maintenance — ensuring oil samples from vehicles and equipment are submitted on schedule can prevent major mechanical failures down the line.[4] You'll also need to coordinate with the test, measurement, and diagnostic equipment (TMDE) support team to ensure the calibration of tools and equipment are up-to-date as this directly impacts maintenance accuracy and safety.[5] Be proactive in planning and preparing for equipment drop-off and pick-up dates; this forethought will be common themes for success, as it ensures you are always one step ahead in your logistics and supply chain operations.

Managing the Shop Stock List for Operational Efficiency

Overseeing the shop stock list (SSL) is critical to ensuring maintenance operations run smoothly and equipment downtime is minimized. The SSL, consisting of demand-supported repair parts and consumables your unit is authorized to stock, enables rapid repairs for high-demand items without delays from external supply chains. Managed through GCSS-Army, the SSL categorizes items as either demand supported (ZV line) or command supported (ZM line). You must understand the need for regular validation — typically every 90 days — to ensure the list aligns with usage patterns and mission needs. You should also be familiar with analyzing demand data to adjust stock levels, as overstocking can tie up resources while understocking risks mission delays. Coordinating with your MCS to maintain an accurate SSL will ensure your unit can sustain operations. Honor the space you physically have for SSL item storage and turn in whatever the analysis concludes your unit no longer needs. Do not hoard items; this will inevitably induce an inventory nightmare and disrupt operations.

Training and Soldier Development

As an XO, your commitment to ensuring the readiness of your maintenance team and Soldiers through regular technical training is paramount. Coordinate with your unit's training officer to schedule these sessions, focusing on new equipment and updated procedures. Developing crew members into 15-level troubleshooters for their equipment will significantly enhance your unit's capability. For instance, if your unit has recently received upgraded M1 Abrams tanks, the 91A mechanics (M1 Abrams Tank System Maintainers) must receive hands-on training with the new systems and have crew members present during their walkthrough.

You must also recognize the significant impact of integrating maintenance training within the unit's broader training calendars. For instance, incorporating vehicle recovery drills into field exercises improves technical skills and builds cohesion between the maintenance teams and the line troops. This integration is a crucial part of your role. Don't overlook the potential of your NCOs; encourage them to attend courses like the Advanced Leader Course (ALC) to enhance their ability to manage maintenance operations under pressure. For platoon leaders and high-performing NCOs, the Maneuver Leaders Maintenance Course (MLMC) is critical for leaders' understanding and knowledge of proper maintenance execution and planning. This course will prepare NCOs to become platoon sergeants and platoon leaders to take XO positions, yielding more competent future commanders and first sergeants.

Financial and Accountability Procedures

Another critical area is managing financial liability and accountability. Beyond the Financial Liability Investigation of Property Loss (FLIPL) processes, you are responsible for assisting the commander with the accountability of all property book items during inventories.[6] Work closely with your property book officer (PBO) to conduct CSDP inspections, ensuring compliance with Army regulations, as well as pay close attention to sensitive items (SI) like night-vision devices or weapons. Remember, discrepancies in SI can lead to serious consequences, underscoring the importance of your role.

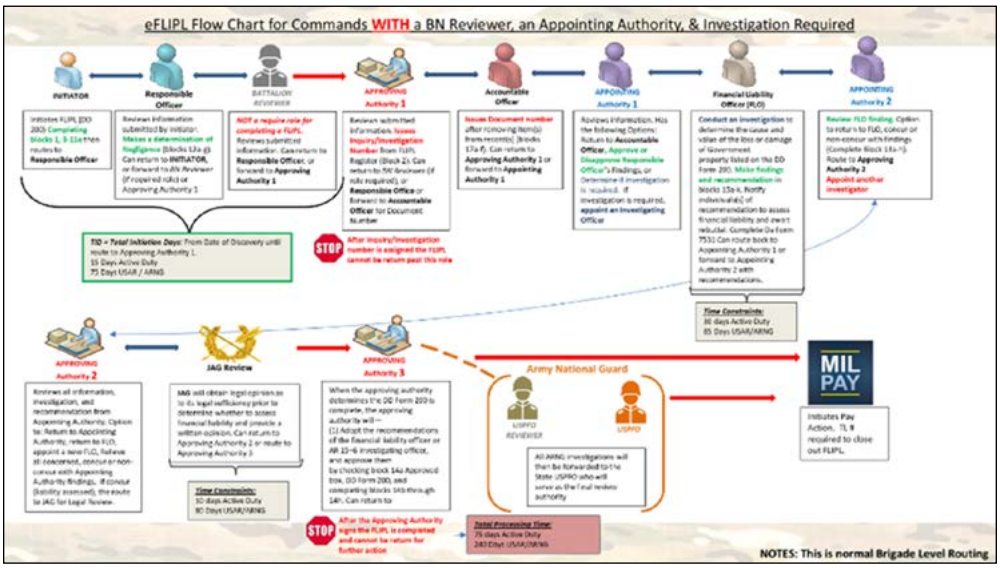
Additionally, familiarize yourself with tracking equipment status and maintenance costs, which will help you justify budget requests during resource meetings. If at all possible, avoid using a manual tracking system regardless of your Excel proficiency. Removing multiple trackers will empower you to eliminate human input errors and investigate products already established at higher levels, increasing efficiency. In units like the 3rd Infantry Division, you may be able to adopt higher best practices like "COP of the Rock," a live Power BI tracker utilizing real-time updates from systems of record like GCSS-Army. Don't recreate the wheel unnecessarily!

Communication and Reporting

As an XO, your role is pivotal in the battalion or brigade. Mastering the art of concise and actionable reporting during maintenance meetings at all echelons is a key part of your responsibility. Be prepared with data on your unit's readiness metrics, such as OR rates, and be ready to discuss how maintenance impacts training schedules. For instance, if a critical piece of equipment is non-mission capable, outline a clear plan to get it back online and request support if needed. Look across the formation within the battalion and brigade; this separates a good XO from a great one.

Your unit's timely submission of operational readiness inspection lists is crucial. These reports directly influence higher headquarters assessments of your unit's combat readiness, making your role in resource management integral to the mission's success. By ensuring unit training according to the 8-Step Training Model and validating planning during the training resource meeting, you empower your unit to be at its best. Maintaining open lines of communication with your commander, providing them with regular updates on maintenance and logistics challenges, and actively seeking guidance on prioritizing resources are all essential for efficient resource allocation and mission success.

Figure 2 — Example of an eFLIPL Flow Chart



Building Relationships with Higher Echelons

You play a crucial role as the bridge between your unit and its higher headquarters. Your attendance at battalion/brigade-level meetings with a clear understanding of your unit's needs, whether additional funding for parts, control exchange requests, or support for a large-scale maintenance operation, is vital. These meetings are an opportunity to advocate for your commander's priorities. Building relationships with the battalion/

Warpaint — Service Production Control — 7MD	
PURPOSE: The production control meeting provides a common operating picture (COP) via dialogue to improve upon the commander's situational understanding of the squadron's services, anticipate subordinate commander's requirements, and integrate efforts for services across the squadron. **FREQUENCY:** Daily during the duty week at 1630 **DURATION:** 30 minutes **LOCATION:** Warpaint Maintenance Building Conference Room **METHOD:** In person	**STAFF PROPONENT:** SMO **CHAIR:** WP6 **FACILITATOR:** WP6 **REQUIRED PARTICIPANTS:** Troop commanders, MCS, SMO, MCO, Maintenance Platoon, S-4, S-6
AGENDA: • SMO Service Updates • Maintenance Platoon — Troop 2 Task Updates • Troop Updates ◦ Last 24/Next 24 ◦ Maintainers On Hand/Tasked ◦ Lessons Learned ◦ Any Help Needed ◦ On/Off Plan • SXO Comments • SCO Comments	**INPUTS:** Trello, Troops 2 Task, LRTC **OUTPUTS:** Decisions, adjudication, or resolutions on service issues. Allocation of maintainers or requests to brigade for additional assets. **FEEDS:** FRAGO to Services Plan

Figure 3 — Example Production Control Meeting "7-Minute Drill"

brigade S-4 and legal teams is also important, as it ensures the smooth processing of administrative actions such as equipment turn-ins or lateral transfers. By fostering these connections, you'll secure the resources and support your unit's needs to maintain its operational tempo.

Maintenance Meeting

The last point is in regard to how you conduct maintenance meetings and the efforts you make in preparation. As a battalion/squadron XO, you should run two types of maintenance meetings: the weekly maintenance meeting and your production control meeting (PCM). These are two completely different meetings. A battalion/squadron maintenance meeting focuses on NMC-S vehicles and forecasts additional information: services (vehicle and ancillary), overaged repairable item list, and AOAP — the "deep fight." The PCM focuses on all NMC-M vehicles, prioritizing assets by bumper number with an estimated completion date (ECD) — the "close fight." As an XO, you must prepare for these meetings, attend with a clean and updated ESR, understand the status of parts for all vehicles, and articulate what help is needed from higher. All too often, maintenance meetings delve into a review of the ESR, with the "big XO" going line by line through the report — this is a waste of time and something the company/troop/battalion XOs and their team chiefs should conduct prior. Have a "7-Minute Drill" that outlines the agenda of the meeting with inputs and outputs — this will ensure that the meeting stays on track rather than turning into a working group.

The battalion/squadron should conduct the PCM in the morning while your organization conducts formation and sets the conditions in the motor pool to execute maintenance operations. This meeting is an opportunity for you to drive quick wins and confirm with the team that the MCS has assigned the correct maintainers to specific work orders. This confirmation is a crucial part of the process, as it ensures that the right people are working on the right tasks, leading to maximum efficiency and productivity. It also allows the team to prioritize assets and vehicles daily, further empowering you to control the maintenance operations.

Preparation is key to the success of these meetings. You need to be prepared with an updated ESR, a "troop to task" to understand the capacity you must conduct maintenance, and a clear understanding of the resources and help you need from higher to tackle required maintenance. This level of preparation will ensure that the meeting is focused and productive and that any necessary decisions will be driven swiftly and effectively.

Conclusion

So now you're an XO — embrace the crucible of leadership where every decision you make directly impacts the unit's operational success. The responsibility for your unit's readiness falls squarely on your shoulders, with significant implications for mission outcomes. You are the key coordinator, overseeing everything your unit does and ensuring your Soldiers are fully equipped and prepared for any operational environment. Take on this role with diligence, and remember, challenges are not obstacles but opportunities to learn and grow. Welcome the challenge with the capacity to learn and forge the backbone of a combat-ready force. This position is an opportunity for growth and learning.

Notes

[1] GCSS-Army — https://www.gogcss-army.army.mil/welcome.html.

[2] From Department of the Army Pamphlet 750-8, *The Army Maintenance System (TAMMS) Users Manual*, NMC-S: Non-mission Capable Supply — this code refers to equipment awaiting a part or supply; NMC-M: Non-mission Capable Maintenance — this code refers to equipment awaiting troubleshooting or maintenance time to repair; NMC: A material condition indicating that equipment cannot perform any one of its combat missions. NMC is divided into not mission capable maintenance (NMCM) or not mission capable supply (NMCS). See DA PAM 750-8, 22 August 2005, 308.

[3] Equipment Status Report (ESR), U.S. Army Combined Army Doctrine Directorate, https://www.youtube.com/watch?v=CIZ5uDjGRmE&list=PLPb-bRw97BH2ugLMp9oIUcTlBD5f0oLOrY.

[4] AOAP: Army Oil Analysis Program (AOAP) — Part of a Department of War-wide effort to detect impending equipment component failures and determine lubricant condition through evaluation of used oil samples. See DA PAM 750-8, 22 August 2005, 304.

[5] TMDE: Test, Measurement, and Diagnostic Equipment (TMDE) — Any system or device capable of being used to evaluate the operating condition of a system or equipment to identify and/or isolate any actual or potential malfunction. TMDE also includes automatic test equipment and test program sets. See DA PAM 750-8, 22 August 2005, 311.

[6] FLIPL: Financial liability investigation of property loss — An instrument for recording circumstances concerning loss, damage, destruction or theft (LDDT) of Army property. It serves as, or supports, a voucher to adjust property records on which the property is listed. It also serves to determine any question of responsibility (financial or otherwise) for absence or condition of the articles. See AR 735-5, 10 March 2024, 117.

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The History and Future of Military Stoicism

LTC FRANKLIN C. ANNIS
MSG ANDREW D. BAKER

In 2009, struggling with the significant behavioral health injuries of Soldiers and families as a result of the "Long War," the Army integrated research from the University of Pennsylvania to develop the U.S. Army Master Resilience Course. While this program may have served as an immediate stopgap to reduce suicide and improve the general mental health within the force, it may be time to reconsider the Army's approach to resiliency. Adapting a method that provides explicit instruction on Stoic philosophy, which serves as the foundation to a number of effective psychological methods such as Rational Emotive Behavior Therapy and Cognitive Behavioral Therapy, could not only address the resiliency needs of the Army but do so in a fashion that could strengthen the overall understanding of the Profession of Arms. With the updated Army Regulation 350-1, *Army Training and Leader Development*, removing the resiliency program as an annual training requirement and placing a greater burden on commanders to assess and provide tailored instruction in resiliency as needed to their units, now may be an optimal time to integrate Stoic philosophy to shape the holistic culture of the Army instead of continuing to treat resiliency as addendum training.

(Photo illustration using Adobe Stock image)

In this article, we will explain the deep connection between Stoic ethics and the American military tradition (including critical topics such as military history, the Laws of War, the establishment of the American Republic, and physical fitness). We will also explore the rise and possible cause of pseudo-stoicism and describe how resiliency programs that explicitly use Stoic philosophy have produced statistically significant results reducing "symptoms of PTSD, [improving] quality of life, [decreasing] stigma, and [enhancing] perceived social support."[1] Finally, we will explain how providing explicit use of Stoicism can be used to improve the integrated understanding of the Profession of Arms, increase learner motivation, and further support military self-development.

Ancient Stoicism

Ancient Stoicism was a philosophy born of the battlefield; the ancient Stoics collected battlefield-proven approaches to hardening the body and mind from Spartan culture and Greek military veterans. Ancient Stoicism was founded by Zeno of Citium around 300 BCE after encountering the works of great Greek philosopher, and former Athenian Hoplite (heavy infantryman), Socrates. Ancient Stoicism held virtue as the paramount good. It was the goal in life to live according to reason, seen as a connection to the divine, in harmony with nature.

Ancient Stoicism produced several great military commanders and leaders. The great Stoic General Publius Cornelius Scipio Africanus who conquered Carthage is said to be one of the greatest military strategists of all time, with skills exceeding that of Napoleon Bonaparte.[2] The Roman Emperor Marcus Aurelius Antonius, the last emperor of the Pax Romana ("Roman Peace"), wrote *Meditations* while commanding troops during the Marcomannic Wars.[3] Antonius not only successfully won a war against barbarians but saw his country through a civil war with minimal bloodshed. Ancient Stoicism thrived into the 4th century CE before being superseded by Christian theology.

Key Features

The Stoics believed that good was found only through the execution of virtue. Borrowing from the Platonic tradition, the Stoic cardinal virtues were wisdom (prudence), justice, fortitude (manly gallantry), and temperance. Stoic philosophy aimed an individual towards eudaimonia, a concept that might best be translated into human flourishing. Achievement of eudaimonia calls for the exercise of excellence in all activities and the fulfillment of duty to oneself, one's community, and humankind. Sometimes translated as happiness, this call towards eudaimonia was enshrined by Thomas Jefferson in the Declaration of Independence: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."[4] The Stoic mindset is uniquely suited for the military community as it reframes all hardships as opportunities for improvement

A mural depicts Zeno of Citium engaging in philosophical discussions with his disciples. (Adobe Stock image, created with generative AI)

and reinforces service towards others. As recorded by the influential French philosopher Montesquieu:

> *While the Stoics regarded wealth, human grandeurs, pain, worries, and pleasures as something vain, they spent their time doing nothing but work toward the happiness of men and fulfill the duties of society; they seemed to regard that sacred spirit which they believed to be in themselves as a sort of favorable providence that kept watch over the human race. […] Born for society, they all believed that their destiny was to work for it, which was all the less burdensome that their rewards were all internal, and that, happy through their philosophy alone, it seemed that only the happiness of others could increase their own.*[5]

Four of the major elements of Stoic philosophy are further explored below:

Dichotomy of Control — The Stoic philosophy called upon individuals to find the things in life that were within their control and reflect on their opinions to determine if appropriate views were held. The Stoics acknowledged that immediate opinions of events were likely incorrect. Immediate emotional responses to outside stimuli, like fear or anger, were accepted as natural human responses; however, upon careful reflections on a situation, a clarified judgment would likely carry different meaning and emotional responses. The goal of Stoicism was ultimately determining the correct opinion of situations to avoid the emotional suffering of misinterpretations. Stoics focused on controlling their judgments, thoughts, actions, etc., while learning to disregard outside factors (wealth, social position, birth conditions, events, etc.).

For example, Stoics learned not to worry about the opinion others held of them (because it was not within their control) to gain a greater focus on their words and deeds within the community (that which they can control).

Amori Fati — Stoicism instructed its followers to "love their fate." It was a worldview that could interpret even bad events and hardships in a positive light; burdens in life, such as loss or suffering, were ultimately needed and a means of practicing personal excellence. This concept in a military context could help drive Soldiers towards optimism and self-reliance. Additionally, this outlook can avoid the temptation of comparing one's fate to the situation of others. The Stoics accepted that the world was fundamentally unjust, and no expectation existed that individuals should all find themselves with equal social status, wealth, etc.

Avoidance of Luxuries — The Stoics were indifferent towards material possessions, instructing individuals to keep their desires small to live well. According to Seneca, "It is not the man who has too little, but the man who craves more, that is poor."[6] This desire to live simply can offer great benefits to the military community to include reducing logistical demands and preserving available energy reserves (calories) during military operations. The lighter Soldiers can learn to live, the quicker they can maneuver on the battlefield while maintaining a greater ability to think and engage in moral judgment — a topic heavily discussed in S.L.A. Marshall's *The Soldier's Load and the Mobility of a Nation*.[7]

Voluntary Exposure to Hardship — The Stoics famously voluntarily engaged in hardships to build their resilience. Modern Stoic William Irvine uses the term "Stoic toughening training" to describe engaging in activities to purposely cause discomfort.[8] Epictetus, in *Discourse 1.2.32*, referred to his concept as hard winter training: "We must undergo a hard winter training and not rush into things for which we haven't prepared." This alludes to the fact ancient warfare paused in the winter months due to the increased logistical demands and weather extremes. The soldier who continued to train in this temporary peace would be more prepared for the spring offensive than soldiers who were idle. Likewise, we cannot expect to have resilience on the battlefield if we never practice and develop our resiliency in times of peace.

CPT Alden Partridge, the third superintendent of the U.S. Military Academy (who was also founder of Norwich University and "father of the Reserve Officer Training Corps"), was known for taking his cadets on long pedestrian adventures to build their "constitutions." Early Norwich cadets trained to "walk with facility [ease] 40 miles per day."[9] Partridge also had his cadets haul 4,000-pound cannons down to the river and then up the steep hillsides of New England. It was clear from the records of Partridge's cadets that the intent of these tasks exceeded that of simple fitness training.[10] His cadets learned to be comfortable with being uncomfortable. The U.S. military may improve the psychological resilience of its force if it explicitly emphasizes that physical training is also intended to drive psychological development.

CPT Alden Partridge
(Graphic courtesy of Wikipedia)

NeoStoicism

The Stoic philosophy saw a resurgence in the 16th century when Flemish Humanist Justus Lipsius integrated Stoic philosophy with Christian theology to produce NeoStoicism. NeoStoicism sought to harmonize Stoic philosophy with the Christian tradition, adding the three Christian virtues of faith, hope, and charity (love) to the four traditional Stoic virtues of wisdom, justice, courage, and moderation. It abandoned the materialism and determinism of Ancient Stoicism to prevent conflicts with Christian teachings. While Justus Lipsius drew primarily from the works of Ancient Stoic Seneca of Younger and Roman historian Publius Cornelius Tacitus, other NeoStoics scoured the libraries of Europe looking for other Ancient Stoic texts to adapt. Lipsius' NeoStoic approach of governing through prudence and propriety offered a powerful virtue-based response to Machiavellianism: "Dignity, self-restraint and discipline were the recipes for the foreign policy of the prince, while the individual was subordinated to the purposes of the state, and taught to control his own life by mastering his emotions."[11] Ultimately, NeoStoicism laid the philosophical foundation for the Enlightenment, modern democracies, and Industrialism.

NeoStoicism deeply impacted the "Western way of war." Hugo Grotius used a NeoStoic framework to establish the basis of international law.[12] Swedish King Gustavus Adolphus, hailed as the "Father of Modern Warfare," carried Grotius' works on campaign as he developed combined arms warfare techniques that are still in use today: "If Gustavus Adolphus rose up from the dead… and was magically transported to the Western Front [of World War One] in 1914, he would have understood the underlying concepts governing Warfare with little difficulty."[13] Count Raimondo Montecuccoli built upon Lipsius' military philosophy and impacted Prussian military reformer Gerhard von Scharnhorst. Scharnhorst's mentee, Carl von Clausewitz, captured many NeoStoic elements in his work, *On War*:

> "We therefore say once more a strong mind is not one that is merely susceptible of strong excitement, but one which can maintain its serenity under the most powerful excitement, so that, in spite of the storm in the breast, the perception and judgment can act with perfect freedom, like the needle of the compass in the storm-tossed ship."[14]

Clausewitz became one of the most influential military philosophers with significant impacts on warfare in the 20th and 21st centuries. While his work is debated in military schoolhouses around the globe, the understanding of his connection to Stoicism and NeoStoicism has sadly been lost. An interesting echo of NeoStoicism

appeared at the tail end of the 20th century in U.S. Marines Corps (USMC) Gen Charles Krulak's "Strategic Corporal" concept. While Krulak doesn't directly reference Stoicism nor NeoStoicism, his vision of an empowered Marine (volunteer) — capable of rational and moral action embodying the virtues of his Corps and well-prepared by hard realistic training — is in keeping with the tradition of NeoStoic military philosophy.[15] Krulak's vision prepared the USMC well for the wars in Iraq and Afghanistan.

NeoStoic Citizen-Soldiers

With the rise of firearms in the 16th century, larger armies were required to maintain the peace. Militias and professional militaries drawn from a country's own citizenry were viewed as able to operate with superior virtue as foreign missionaries. It was theorized that citizen-soldiers from within the nation/community would be far less likely to damage or injure the communities in which they were housed. This concept impacted many countries including Prussia, which attempted at one time to convert to a purely militia-based military, and the United States, which originally intended to have no standing army.

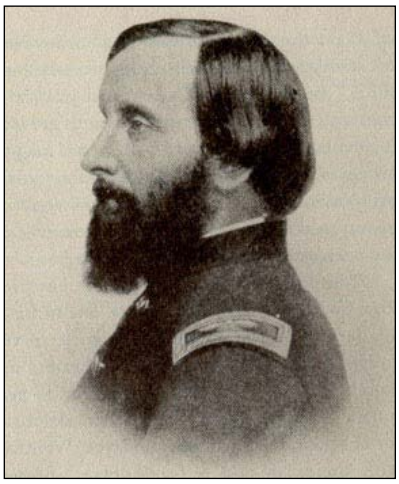
NeoStoicism and the American Republic

Stoics/NeoStoic philosophy deeply influenced Enlightenment philosopher John Locke.[16] The Stoic-influenced concept of Natural Rights espoused by Locke made its way into America's foundational documents and had a lasting impact on the American Republic.

America's Founding Fathers witnessed a great revival of Greek and Roman philosophy (to include Stoicism). While Thomas Jefferson claimed to be an Epicurean, the majority of his personal philosophy was derived from Stoicism. In May 1778, the play "Cato, a Tragedy" by Joseph Addison was put on for George Washington's officers at Valley Forge, despite a ban on plays in the colonies. This play, recalling the last stand and eventual suicide of the Stoic Cato the Younger in defense of Julius Caesar's overthrow of the Roman Republic, inspired the American officers to fight to the death if required for republican principles.[17] Paraphrasing of this play can be found throughout the writings and speeches of American founders, including the quote attributed to Nathan Hale: "I regret I have one life to give my country."[18] In the newspapers of the era, Washington and Samuel Adams were commonly referred to as "America's Catos" with George the III being referenced as "Caesar." Adams "once thought, that [Boston] would be the Christian Sparta," echoing the desires of NeoStoicism to combine the military attributes and focus on virtue of Stoicism with Christian theology.[19]

Emersonian Idealism

In the 19th century, the Unitarian Church and American Transcendentalist movements began searching for theological truths outside Christian tradition. Great American philosopher Ralph Waldo Emerson influenced the presentation of an American version of NeoStoicism that was widely compatible with various religions and even those that were areligious. Quoting Marcus Aurelius often within his works, Emerson spread the Stoic influence to other key philosophers within the abolition movement including Henry David Thoreau and Thomas Wentworth Higginson.



COL Thomas Wentworth Higginson
(Graphic courtesy of Massachusetts Historical Society)

COL Thomas Wentworth Higginson went on to command the first regiment formed from freed slaves during the Civil War. Higginson recorded his approach to integration within his book *Army Life in a Black Regiment*.[20] This method called for clearly defining Soldier requirements and judging individuals only on their ability to meet those requirements, an approach to equal opportunity that could still be effectively employed today. Higginson went on to publish an improved translation of Stoic Roman slave Epictetus' *The Enchiridion* immediately after the war.[21] Higginson, along with the rest of Transcendentalists, participated in the first wave feminism movement, carrying on the Ancient Stoic assertion that women were just as capable as men to act through virtue and desiring to expand women's rights.

Loss of Direct Connection with Stoicism

There are a number of reasons why Western militaries may no longer recognize their relation to Stoic traditions. The rise of Secular Humanism within 20th century education removed the vast majority of Stoic-related texts from educational curriculums. While previous generations of military leaders learned Greek and Latin by reading Xenophon, Cicero, Virgil, and Plutarch and enjoyed Daniel Defoe's NeoStoic adventure of Robinson Crusoe, contemporary military leaders were likely to graduate from college without encountering a single Stoic text.[22] The rise of industrial warfare and the increased range of combat may have also contributed to this ignorance among the general soldiery. The Roman Legions engaged in warfare at a range of under 30 meters. The psychological impact of warfare increases as the distance to the enemy closes.[23] As a result, ancient militaries were highly dependent on various philosophies and theologies to ensure their Soldiers could close with the enemy and endure the aftermath of battle. With the extended ranges of modern weapons, the added support Soldiers who do not directly engage in combat, and the increased technical nature of warfare causing the need for extended time and resources to be spent on training, the focus on military philosophy was largely lost.

Rise of Pseudo-stoicism

Pseudo-stoicism is the polar opposite of the Stoic philosophy. Unfortunately, due to drifts in language, it is common for

individuals to be labeled as "stoic" for displaying traits opposed to the genuine philosophy. First appearing in the Victorian era, this false form of stoicism led individuals to actively suppress their emotions. Pseudo-stoicism asserts, "crying and other expressions of emotion or empathy are widely regarded as 'inappropriate' signifiers of weakness, fragility, or even incompetence."[24] The rise of pseudo-stoicism within the military likely occurred with shifts in education. New recruits not instructed in Stoicism's foundational philosophic principles may have looked up to seasoned veterans and tried to mimic their ability to remain calm without understanding how it was being achieved. This attempted rejection of natural emotions led to psychological injury and toxic leadership traits.

Commanders who are not well versed in resiliency may unfortunately drive pseudo-stoicism, falsely hoping to preserve combat power. For example, during the beginning of global war on terrorism, emotional responses were commonly seen as a fracture in a Soldier's character. Needing to sustain combat power, commanders may have inappropriately directed or implied that Soldiers needed to suppress their emotions while conducting missions that frequently resulted in destruction and death. While this approach may have had short-term advantages, it failed to address lingering and compounding psychological, psycho-spiritual, and psycho-physiological effects on Soldiers. This led researchers to postulate that the adoption of pseudo-stoicism was likely the source of the majority of military operational stress injuries.[25] Explicit instruction in Stoic philosophy may be key in making further advances in improving resiliency in the U.S. Army by ensuring dysfunctional pop-culture stereotypes are replaced with a functional practical philosophy that fully supports mental and physical health.

Advantages to Shifting to a Stoic-Based Resiliency Program

One of the major advantages of shifting to an explicitly Stoic-based program would be increased motivation for learning. Anyone who was in the Army in 2006 may be able attest to the motivational impact of the release of the movie *300*, a fictional account of the Battle of Thermopylae.[26] Soldiers long for a connection to historical warrior cultures that can be used to fuel learning useful to the modern battlefield. Additionally, the Stoic canon of literature is significant and includes many literary masterpieces.[27] Unlike the limited materials available within Master Resiliency Training, it would take years to read through primary and secondary Stoic source material. This variety and richness in texts would allow Soldiers to continually explore new works without becoming bored with previously experienced materials.

As discovered by LTC Thomas Jarrett within his Warrior Resilience and Thriving Program, which was developed and tested in the early 2000s, Soldiers do not view Stoic-based mental health treatment in the same light as conventional therapy; "Grecko Roman Stoicism 'allows soldiers to view [Rational Emotive Behavior Therapy] as training versus therapy, which allows them to directly versus passively solve problems.'"[28] As a result, Stoic-based resiliency programs may be viewed more as integrated cultural training to deal with combat realities than a disconnected behavioral health program. A similar effect was recently noted with decreased stigma among Canadian public safety personnel who attended the Stoic-based Before Operational Stress Program.[29]

Finally, and most importantly, a Stoic-based approach to resiliency could be used to unify and reinforce the Profession of Arms. As Alexis de Tocqueville warned within his work *Democracy in America*, industrialization has led to the over-specification of workers who lose the knowledge of a profession as a whole.[30] Today, many Soldiers may not see how various courses, training, and theories presented to them are fully related. For example, the successes or failures of mission command are directly related to Soldiers' ability to act out of virtue and build the trust required for such a command approach. The Laws of War become more than just a legal standard when the underlying Stoic philosophy is made apparent, and Soldiers can directly comprehend how these laws are made to maintain virtuous actions among Soldiers and protect against psychological injuries. The use of Stoic-based resiliency could also deeply reinforce the value of the study of military history. For example, the enhanced leadership abilities of Joshua Chamberlain, the hero of Gettysburg, may be easier to understand when it is recognized that as a professor of languages and rhetoric, he would have been an expert on Ancient Stoic materials.[31] And perhaps most dearly to any Soldier would be the gift of the better understanding of the U.S. Constitution and the Natural Rights it defends.

Conclusion

While the Master Resiliency Program may have served as a useful stopgap, it is past time to reflect if a more holis-

A damaged fresco depicts ancient warriors fighting in battle. (Adobe Stock image)

tic approach might be best to support individuals Soldiers, families, and the Profession of Arms. Reclaiming the explicit use of Stoic philosophy would better support the psychological resilience of Soldiers while connecting them to a core philosophy that shaped the Western military tradition. The use of this formal philosophy would be useful in dismantling and eliminating harmful pop-culture stereotypes in behaviors. By linking this philosophy through the various elements of the military tradition from the Laws of War to fitness training, Soldiers can come to view resiliency as an integrated aspect of the American warrior tradition, not a separate component. In the end, our proposal is simple but ambitious: We seek to reintegrate the Stoic principles so deeply into all levels of the Army training that we no longer need to call it a "resiliency program." It just becomes part of what it means to be an Army Soldier. Resiliency is not a module — it is a mindset, a culture, and a shared commitment.

Notes

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Producing Warriors:

The Modern Army Combatives Program

CPT D. REX WINSLOW
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It is time for Infantry leaders and Soldiers to fully embrace the Modern Army Combatives Program (MACP). Few programs, if any, offer low-risk, high-reward training that cross several functions as effectively as MACP. The Infantry closes with and destroys the enemy; provided that remains the Infantry's primary function, the need for close quarter training is vital. Infantry One Unit Station Training (OSUT) and the Infantry Basic Officer Leader Course (IBOLC) both do an excellent job of teaching our Soldiers tactics at range — from kilometers away to the 15-meter hand grenade range. However, MACP teaches fighting at the "zero-meter range," as stated on the entrance sign to their building.

Soldiers compete during the quarter finals of the Lacerda Cup Combatives Championship at Fort Benning, GA, on 11 April 2024. (Photo by Daniel Marble)

History is brimming with examples of opposing ground forces engaging at the zero-meter range. American Infantrymen fought hand-to-hand engagements in every major war throughout history from large-scale combat operations (LSCO) to counterinsurgency operations (COIN). An infantry unit fighting hand-to-hand is neither the ideal nor the standard range of engagement in modern warfare; however, it is indisputably the range we can't eliminate from the battlefield.

As we train and prepare for a LSCO fight in the future, or if we return to smaller scale conflicts such as COIN, our next enemy will eventually meet us at the zero-meter range and our Infantry Soldiers must be well trained and prepared for this engagement. Centralizing MACP in training prepares our Soldiers for this confrontation.

This article will first lay out what Soldiers and units gain by implementing MACP. Second, we will demonstrate the low cost and low risk of implementing MACP as well as address some common concerns including injuries.

MACP provides three levels of training: Basic Combatives Course (BCC), Tactical Combatives Course (TCC), and Combatives Master Trainer Course (CMTC). The program continues with unit-level training as well, reinforcing the techniques taught in BCC.[1]

At the individual level, Soldiers who graduate any of the courses or participate in MACP at their unit develop valuable intangibles. Soldiers cultivate self-confidence, self-discipline, resiliency, mental fortitude, and personal courage. They acquire the skills to handle combatants and non-combatants in lethal and non-lethal ways at close quarters. Their physical fitness is assessed in real-life application which steers and motivates them in their physical training (PT) goals and programs.

Units that invest in MACP improve their lethality, build comradery, provide controlled ways to relieve stress for their Soldiers, and bridge the gap between PT and tactics.[2] Further, units will provide valuable training for all Soldiers, particularly their junior leaders by allowing them to compete against a fully resistant opponent. Outside of situational training exercises (STX), unit leaders get few repetitions to train against a strategic adversary. Training in combatives offers this opportunity almost every time. Unit leaders will learn to be adaptable, clever, assess risk in real time, and how to exploit weakness.

As the adage goes, "no plan survives first contact." Those who train in combatives learn this lesson well. The boxing

champion Mike Tyson put it another way: "Everybody has plans until they get hit." Considering a fight and a war are mostly separated by their scale, they share many of the same principles, lessons, and philosophy.[3] Soldiers trained in MACP can carry those lessons learned with them to the battlefield.

Effectively, units that prioritize MACP into their training will turn their Soldiers into warriors. These warriors "understand controlled aggression and remain focused while under duress;" they "possess the skills requisite to the mission, at all levels in the spectrum of force."[4] Whether called upon to kill the enemy in close combat or to use non-lethal force to control noncombatants in a peacekeeping mission, MACP-trained Soldiers are well equipped for any mission.[5]

The appeal is obvious. Who wouldn't want a unit of warriors, experienced in fighting thinking enemies, high in esprit de corps, physically fit, and trained in controlled aggression? With such a high reward, why don't more units prioritize MACP? Below are a few common concerns and an explanation as to why these concerns are a lower risk than perceived.

The first obstacle for Soldiers to overcome is usually fear. It is a bit scary to think about getting pulverized by a superior combatant. They might fear injury (which will be addressed at length below), embarrassment of getting beaten by an opponent (leaders are especially prone to this fear of losing to a subordinate), or the task of learning many new techniques and skills. These fears are real, but Soldiers need not heed them. The training path in Training Circular (TC) 3-25.150, *Combatives*, works in a logical and natural way.[6] The techniques are fundamental and simple. Most of what is covered in BCC is teaching Soldiers how to avoid being beaten up and how to restrain an opponent. The beginning techniques in MACP are low threat and designed to set all novice combatants on a solid foundation from which to train.

The second obstacle is time. All training requires time allocation and MACP is no different. With all the other obligatory tasks to complete, lack of time is often cited as a reason not to implement MACP. However, the time allocation necessary for combatives can be flexible. It only takes a week of full-time training for Soldiers to complete BCC, but training can be broken down into smaller segments over a longer period. A unit only using PT time to learn combatives would likely complete the BCC techniques in a month or less. Time allocated to sustaining this training is minimal as well. Soldiers could spend as little as 10-15 minutes at the end of a normal PT session going over drills 1, 2, and 3 to maintain their baseline knowledge.[7]

The third obstacle is funding. Commanders especially need to know how much things will cost their unit. When thinking of a combatives program, the image of large mats and protective equipment comes to mind. Truthfully, these are useful resources for combatives training, but they are not necessary. Most, if not all, of combatives training can be conducted in the Operational Camouflage Pattern (OCP) uniform in a grassy area.[8] Many installations already have gyms with matted areas if desired. Sand pits and rubber pits work just as well. The remaining basic equipment, useful but not necessary for training, are boxing gloves, pads, and a body suit — all of which are relatively inexpensive, especially given their training value.

Whether called upon to kill the enemy in close combat or to use non-lethal force to control noncombatants in a peacekeeping mission, MACP-trained Soldiers are well equipped for any mission.

The fourth obstacle is a lack of support from commanders. Commanders who do not place an emphasis on combatives signal to their Soldiers that it is not a priority. Commanders set the priorities for their units. A simple and effective way to incorporate combatives into a unit, and thus its culture, is to hold competitions. Because Infantry Soldiers should be willing and able to fight when called upon, commanders should hold regular competitions.[9] This provides Soldiers a reason to develop their fighting skills, promotes a fighting spirit, gives motivation and consistent training opportunities, and allows Soldiers to earn the title of champion.[10] Adding combatives into Appendix F of Army Regulation 350-1, *Army Training and Leader Development*, as required training, rather than merely suggested training, would solve much of this. However, there is no reason why commanders cannot implement a combatives program at the company, battalion, or brigade level on their own. If commanders prioritize MACP, it will work, but this program can hardly survive in a unit where the commander does not make it a priority.

The purpose of this article is to persuade commanders to prioritize MACP, a program with high benefits and low costs and risk. This brings us to our last obstacle — injuries. Both Soldiers and commanders may hesitate to embrace MACP because they fear injury. Soldiers fear personal injury, and commanders fear that their unit will become combat ineffective due to a non-mandatory training program. These fears are overblown.

First, let us put injuries into perspective. The leading cause of injury to Soldiers, and therefore mission readiness, has consistently been running, followed by rucking, then free weights, and then basketball.[11] Another study listed the most common causes of injuries, in order of likelihood as overexertion, falls, being struck by or against objects at work, environmental factors, and motor vehicles.[12] Combatives-related injuries are few, resulting in almost never having their own category in these large studies. Some will point out that if all units began MACP then the number of combatives-related injuries would rise. This is true, but again, not as dramatically as one might assume.

According to a MACP instructor on Fort Benning, GA,

of the 306 Soldiers trained in the three levels during Fiscal Year 2024, only seven were injured. Of those, four were medically dropped and three completed their training course. That means they suffered a 2.2-percent injury rate with only 1.3-percent injury rate that resulted in halted training.[13] Most injuries sustained during combatives require no more than a few days of recovery.[14] As stated in TC 3-25.150, "Ignorance and loss of control are principal reasons for most combatives-related training injuries."[15] Proper training and supervision result in safe and effective training as demonstrated by the MACP on Fort Benning.

Another study looked at injuries during combatives tournaments, revealing what to expect in a unit.[16] Competition will obviously result in more injuries than training would, as competitors have a different goal in mind, but the injury spike is still not that great. Unsurprisingly, it found that more training significantly reduced risk. The study concluded that "injury rates in MAC tournaments are comparable with those of other combat sports and military training." Finding that within a competition, 15 percent of fighters experienced a one-month loss of readiness on average. The study went on to find that 80 percent of fighters experienced no injury during grappling, and this number jumps up to 90 percent when they included minor injuries that had no duty-limiting effects. By contrast, striking only had a 48 percent no-injury rate, but a 78 percent rate to include minor injuries that resulted in no duty-limiting effects.[17] Simply put, with proper training, MACP is low risk to Soldiers and unit readiness.

Recall again that MACP is a high reward, low-risk program. It turns Soldiers into warriors, provides some of the most realistic training against a real opponent, cultivates an esprit de corps, incorporates fitness, and gives Soldiers motivation for self-improvement. Training options are flexible, requiring minimal adjustment to calendars and equipment. Commanders can take their unit to a grassy field in OCPs during PT and drill their Soldiers in the fundamentals of ground fighting. This is a no-cost, no additional time requirement, and low risk training, where injury with loss of unit readiness is likely less than 1 percent.[18] Which other program in the Army produces such benefits with so little risk?

Trainees in the 198th Infantry Brigade practice combatives techniques on 28 March 2025 at Fort Benning, GA. (Photo by Joey Rhodes II)

It is time for Soldiers, but especially commanders, to prioritize the Modern Army Combatives Program. Combat at the zero-meter range will find us in our next conflict, whether LSCO or some smaller campaign. Commanders owe it to their Soldiers to prepare them for this fight, and MACP provides the answers in a logical, realistic, and safe way. "Units must develop their own combatives programs to spur troop involvement and encourage commanders to invest resources."[19] It is time for commanders to fully implement it into their ranks. Your Soldiers will thank you; your unit will thank you; the Infantry will thank you; the Army will thank you; and your enemies will curse you.

Notes

[1] Basic Combatives Course instruction is designed to produce fire team, squad, and platoon trainers who can teach the basic tasks and drills that all Soldiers must know, according to Training Circular (TC) 3-25.150, *Combatives*, March 2017, 2-17.

[2] TC 3-25.150, 1-1.

[3] For example, see Ibid., 3-2.

[4] Ibid., 1-2.

[5] Ibid., 1-1.

[6] Ibid., 1-17.

[7] Ibid., 2-37.

[8] Ibid., 1-36 and 2-86.

[9] Ibid., 2-34.

[10] Ibid., 1-8, 2-31, 2-42, and A-1.

[11] Defense Health Agency, "U.S. Army Injury Surveillance 2021 Summary," February 2024, https://ph.health.mil/Periodical%20Library/cphe-ip-army-injury-surveillance-report-2021.pdf.

[12] U.S. Army Public Health Center, "Fact Sheet: Installation Injury Summaries for Active-Duty Soldiers," https://ph.health.mil/PHC%20Resource%20Library/cphe-ip-active-duty-injuries-factsheet.pdf.

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[14] Rick McBride, "Staying in the Fight," *Risk Management Magazine*, 1 January 2016, https://safety.army.mil/MEDIA/Risk-Management-Magazine/ArtMID/7428/ArticleID/5648/Staying-in-the-Fight.

[15] TC 3-25.150, 1-13.

[16] Jonathan I. Stuart, Ian L. Hudson, Simon A. Sarkisian, Michael P. Simpson, and Benjamin P. Donham, "Injuries Sustained During Modern Army Combatives Tournaments," *Military Medicine* 183/9-10 (September-October 2018): e378-e382, https://academic.oup.com/milmed/article/183/9-10/e378/4840555.

[17] Ibid.

[18] The 1.3 percent of Soldiers dropped from the course may have still been able to complete their normal duties back in their unit.

[19] TC 3-25.150, 1-7.

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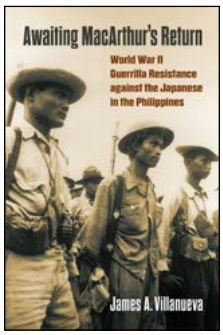
Book Reviews

Awaiting MacArthur's Return: World War II Guerrilla Resistance against the Japanese in the Philippines

By James Villanueva

Lawrence, KS: University of Press of Kansas, 248 pages, 2022



Reviewed by LTC (Retired)
Jesse McIntyre III

Fighting in the Philippines did not end with the surrender of U.S. and Filipino forces to Imperial Japanese Army forces on 6 May 1942. James A. Villanueva, a former history professor at the U.S. Military Academy, explores how guerrilla forces resisted Japanese occupation of the Philippines and set the conditions for liberation in 1944 in *Awaiting MacArthur's Return: World War II Guerrilla Resistance Against the Japanese in the Philippines*. In doing so, Villanueva's work examines the contributions of guerrilla operations to the Allied cause in providing intelligence, combating Japanese occupation efforts, and supplying timely manpower support to the Allied war effort in the Pacific theater of operations.

Villanueva opens in providing a background on resistance to the Japanese occupation of the Philippines during World War II. He informs us that the study of the Filipino guerrilla movement is limited, especially when considering the scope and complexity of the movement. Earlier works focused primarily as unit histories, while later efforts addressed the subject in more broader terms. His research indicates earlier works, while credible, can suffer from author biases and may not expand beyond their area of operation nor include archival records. Villanueva elevates the experience of guerrilla warfare in the Philippines to classical counterinsurgency theories developed during colonial wars involving natives and colonial powers. In addition, the author assesses guerrilla warfare in the Philippines in relation to similar operations that occurred elsewhere during World War II.

Villanueva describes the vastness of the Philippine Islands and its terrain as well as provides an overview of the key islands and population groups that inhabited them in 1942. His research indicates that while the guerrilla movement started largely due to the Japanese invasion of the archipelago, each group differed in terms of reasons and objectives for resistance. Nationalism and the desire for independence appears to have been the overarching objectives for the movement. He describes the personalities and infighting between various guerrilla groups and efforts by MacArthur's staff to mediate. One of the more interesting discussions involves the challenges guerrilla groups faced to successfully sustain forces in remote areas. Guerrilla movements quickly found themselves lacking weapons and equipment when U.S. and Filipino forces surrendered in April 1942. General Headquarters, Southwest Pacific Area (SWPA) was able to provide arms and conduct resupply throughout the archipelago. Furthermore, these resupply efforts kept morale raised and gave Filipinos hope that liberation was a reality in the near future. Guerrilla forces benefited from U.S. and Filipino military personnel who avoided capture and provided badly needed leadership and organization.

The author describes how guerrilla forces were successful in contesting Japanese control of the Philippine Islands. He provides an in-depth assessment of personalities, groups, and activities in the key islands and regions of the country. Guerrilla forces forced the Japanese to leave key population centers and coastal areas to execute anti-guerrilla operations throughout the Philippine archipelago. Coordination and support between SWPA and guerrilla groups resulted in establishing radio stations throughout the islands that provided communications between guerrilla forces and General MacArthur's headquarters.

Villanueva excels in describing guerrilla forces' contributions in support of the liberation of the Philippines. They provided intelligence, destroyed bridges, attacked Japanese supply depots, served as guides, recovered down pilots, and harassed Japanese forces. Guerrilla forces were able to convey locations of Japanese troop movements that were then quickly targeted by Allied fires. They harassed and interdicted retreating Japanese forces and served as an economy of force by clearing areas of remaining pockets of Japanese forces, enabling U.S. Army forces to continue offensive operations against the Japanese Army.

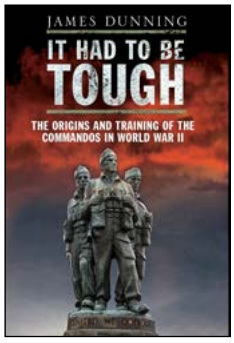
Villanueva's research indicates the effectiveness of guerrilla propaganda efforts in maintaining support for the United States and exiled Philippine government while degrading the effectiveness of Japanese propaganda of their occupation programs. These efforts exploited the extreme brutal Japanese counterinsurgency methods to erode support for Japan's occupation government and its collaborators.

The author's work is more than a study of guerrilla resistance in the Philippines during World War II. It serves as a case study and model for establishing guerrilla operations in a future conflict. Villanueva's research uncovers and discusses the numerous challenges faced by guerrilla groups and MacArthur's SWPA headquarters in providing support and coordination for them.

The strength of *MacArthur's Return: World War II Guerrilla Resistance Against the Japanese in the Philippines* is Villanueva's use of graphics, primary source documents, numerous perspectives of senior leaders, and a writing style that conveys the complexity in creating, sustaining, and coor-

dinating guerrilla operations in the Philippines during World War II. Equally interesting, the author provides the Japanese perspective on guerrilla operations and their impact on Japanese operations throughout the archipelago. This work is highly readable and provides a comprehensive examination of a lesser-known area of World War II. It would be an excellent addition to the library of any historian or student with an interest on the subject.

It Had to be Tough: The Origins and Training of the Commandos in World War II



By James Dunning

Frontline Books, 224 pages, Re-released 2021

Reviewed by SFC (Retired) John C. Simpson

If one is to be a professional Soldier, it's important that some measure of time and effort should be devoted to the study of military history. This is due to the fact that the price of only learning from your own experience often has a cost in blood when the shooting starts. Although there is no shortage of military history books with lessons to teach regarding strategy, tactics, logistics, and leadership done both right and wrong, there still remains a large gap in the coverage in regard to the history of military training.

Think back to reading a history of some famous unit where we only get vague references to things like "weapons training" or "physical conditioning" or the ever popular "grueling training," which tells us nothing useful. This is why I was so happy to obtain a copy of the World War II memoirs of a British Army Commando instructor named James Dunning, who saw fit to go into detail on the training methods of that unit. Although the British Army Commandos were disbanded at the end of WWII, their influence can still be felt to this day by the units that are literally descended from them: the British Parachute Regiment, the Royal Marine Commandos, the Special Boat Service, and the Special Air Service in addition to other international (to include U.S.) units that trace their creation back to the Commandos.

It would be useful at this point to look at a timeline of the author's career. Dunning was 19 years old in 1939 when he enlisted in the British Army at the beginning of WWII. In 1940 when Prime Minister Winston Churchill pressed for the creation of the Commandos, Dunning volunteered to join No. 4 Commando. In March 1941, as a member of that unit, Dunning took part in Operation Claymore, a 500-man raid on Lofoten in Norway that resulted in the sinking of 18,000 tons of shipping, capture of more than 200 German prisoners, and seizure of the code books and rotor wheels of an Enigma cryptographic machine. In August 1942, as an NCO commanding a mortar team in 4 Commando, he took part in Operation Jubilee (also known as the Dieppe Raid), the mission to scale the cliffs six miles west of the main landing and take out the German coastal battery, which ended up being the only success of the entire operation. Commissioned in 1943, Dunning served as an instructor at the Commando Basic Training Center at Achnacarry Castle, Scotland. While getting ready to return to an active Commando unit, Dunning fractured his spine during parachute training and recovered to eventually command a British parachute company before leaving the Army in 1958.

It's important to note that this book is more of a primary reference than a memoir, so it isn't arranged chronologically. I point this out because it can be disconcerting to read about the author's experiences in 4 Commando near the beginning of the book and then he mentions some other experiences in that organization elsewhere in the book in connection with another functional area. The simple reason for this is that the book is brilliantly organized by chapters that address specific subjects and events.

Useful ideas for training are found one after another in this book. Rather than a hasty coverage of all of them, I'll focus on the WW2 Army Commando's approach to physical fitness training. Reading the author's description of the Command School's functional fitness approach reminded me of a quote from an article that once appeared in this very publication. In the January-February 1976 issue of *Infantry,* then-U.S. Army Infantry School Commandant MG Willard Latham wrote: "The Infantry leader must be *physically strong*. This does not imply the bulging muscles of the weightlifter, or the power of the fullback. The Infantry leader needs the kind of strength that will permit him to move over a long distance at a fast pace, carrying the equipment he needs to fight and survive, and preserve strength enough to do his job when he arrives."

It was the last part that struck a chord with me as I read some of the Commando School's standards for speed marching with combat gear. Example activity standards included:

- 7 miles in under 70 minutes, followed by digging a defensive position;
- 9 miles in under 90 minutes, followed by a firing practice;
- 12 miles in under 130 minutes, followed by a drill parade on the square; or
- 15 miles in under 170 minutes, followed by assault course and firing.

Lastly, the author provides insightful conclusions on why the original Commando concept was a unique success, even though he points out that by the war's end a great many of the training innovations had been adopted by the British Army as a whole (although I would say that they were quickly forgotten in the post-war army). This book has so much to teach combat Soldiers; I recommend all Soldiers read and learn from it.

Note: There's an out-of-print edition with the alternate title of *British Commandos: The Origins and Special Training of an Elite Unit* published by the now defunct Paladin Press, but there's no need to pay for that higher-priced version while the other edition is still in print.

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