ARMOR

Innovation

ARMOR

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CHIEF OF ARMOR'S HATCH

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Today's Ideas for Tomorrow's Armor Branch

"However, technology itself is never the goal. It is always the means to achieving the goal. The real goal of sensing … is not to collect exquisite sensors but rather to extend the reach and accuracy of human understanding. … Better platforms may be a means to an end. But the real objective is … to be able to understand, decide and act more effectively under highly dynamic conditions than our opponents." –Christian Brose, **The Kill Chain: Defending America in the Future of High-tech Warfare**

Throughout our military's history, adaptation has been an inevitable part of what we do. We know that resistance to change does not stop it from occurring; resistance only prevents us from having the impact of shaping our future. If not acted upon, we run the risk of allowing innovation to occur at our expense to benefit others.[1]

This sentiment is the central idea put forth by Christian Brose in his book, **The Kill Chain**, as it relates to the entirety of defense efforts. However, it is equally applicable when viewed through innovation and adaptation from an Armor Branch perspective. This thought is not to say that we as a branch are naturally resistant to new ideas. But it is to say that sometimes the best innovative ideas come from a wide range of experiences, and we should be open to all inputs.

In my previous **ARMOR** Hatch article, I wrote briefly about the breadth and depth of information needed to amass ideas for innovative solutions. Consider our latest initiatives, the armored-division cavalry squadron and the mobile protected firepower (MPF) company. The intent is to inform you of the direction our branch is heading and solicit your feedback on ways to employ both formations so we can act more dynamically in the future.

There are some fundamental changes coming soon to our doctrine. First, the Army is shifting focus from the modular brigade to the division as the unit of action. For the past couple of decades, our force structure focused on brigades conducting decentralized operations under the large-scale combat operations (LSCO) threshold. That construct no longer fits what we need as we look at global pacing threats. The Nagorno-Karabakh War, as I discussed in the Summer edition of **ARMOR**, indicates that in the future, we will need a force structure capable of quickly adapting to technological advances throughout the spectrum of multi-domain operations. As the conflict scale grows, so does our need for divisions to fight larger operations under a tactical corps fight.

The U.S. Army Forces Command (FORSCOM) commanding general hosted a reconnaissance and security (R&S) summit Aug. 28, 2019, which identified an Army requirement for organic, cross-domain R&S capability at all echelons, especially at the division-level support of LSCO. Also, the R&S summit identified the requirement to maintain organic brigade combat team (BCT) and battalion R&S formations.

As such, we developed the armored-division cavalry (DIV CAV) initiative to provide an R&S formation that could answer commander's critical information requirements as well as conduct security missions for penetration divisions. We also built it to enable the commander's decision-making within continuous, all-weather, cross-domain capabilities.

These specifications also led to the development of the armored-cavalry troop at the brigade level and reorganized the battalion scout platoons to the 6x36 configuration to ensure R&S capability at echelon. As of Sept. 1, 2021, the FORSCOM commanding general approved 1st Cavalry Division to execute a pilot to test these concepts and inform the force starting in March 2022.

There may be a fear that the return of the DIV CAV might be a step toward the past. On the contrary, the DIV CAV will set the stage for further modernization as new robotics, electromagnetic and informational capabilities become available. Establishing this force structure now allows us to adapt in the future.

Part of the DIV CAV pilot is to look for advantages that will enable future innovation. Specifically, we want to hear

your ideas on how we can adapt R&S operations given the proliferation of unmanned aerial systems and loitering munitions, as well as future additions with robotics, artificial intelligence, electromagnetic detecting capabilities and other technologies.

For instance, as we look at doctrinal implications of building penetration divisions, a consideration could be a greater focus on security missions for DIV CAV squadrons vs. reconnaissance. Your ideas will better help us develop the correct doctrine and policies for the future.

Another effort to ponder is the development of the MPF program. This tank is lighter than the M1A2 Abrams and intends to provide mobility, protection and direct-fire support for light-infantry forces in infantry BCTs (IBCTs). Although pre-decisional, the idea is to equip each light-infantry division with rapidly deployable armored vehicles capable of providing immediate fire superiority on the battlefield to rapidly destroy bunkers and light armored vehicles so friendly forces can maintain operational tempo. Like our DIV CAV initiative, we want to hear from you on methods of employment as well as ideas for best practices for sustaining an armored vehicle within an IBCT.

As Brose points out, innovation for the sake of innovation will take us nowhere, nor will it make us more competitive or lethal as a branch. However, both the DIV CAV and MPF allow us to restructure our force for the future. The future is bright, but challenges lie ahead, and we must begin the professional dialogue now.

I encourage you to expand your range of knowledge on robotics, artificial intelligence and other new technological innovations and apply those studies to new ways to employ DIV CAV and MPF. Your ideas will inform changes to our doctrine, organizations, training and policies. In the end, our goal is to find the right ideas and technology that enable a competitive edge for our Army of the future.

Notes

[1] Christian Brose, *The Kill Chain: Defending America in the Future of High-tech Warfare*, New York, New York: Hachette Books, 2020.

In case you missed these articles …

ARMOR authors have furnished some food for thought on DIV CAV and MPF over the past few years. A sampling:
• MAJ Nathan Jennings' four-part examination of division cavalry's history and future: "Reconsidering Division Cavalry Squadrons Part I," Summer 2018 edition; "Reconsidering Division Cavalry Squadrons Part II," Fall 2018; "Reconsidering Division Cavalry Squadrons Part III," Winter 2019; and "Reconsidering Division Cavalry Squadrons Part IV," Spring-Summer 2019.
• MAJ Amos C. Fox's "On the Employment of Cavalry" and "On the Employment of Armor" in Winter 2019 and Winter 2020 editions, respectively.
• "A Different Approach to the Scout Squad for the Mounted Force" by LTC John Horning, CPT Jake Kelly, SFC Brian Andrade and SFC Brian Ellis, Fall 2019.
• SGT Christopher Broman's three articles on reconnaissance: "Implementing Quadcopter Unmanned Aerial Systems into Reconnaissance Platoons," Fall 2019; "Reforge the Broken Saber: Evolving the Infantry Brigade Combat Team's Cavalry Squadron to Win the Recon Fight (Part I)," Summer 2020; "Reforge the Broken Saber: Evolving the Infantry Brigade Combat Team's Cavalry Squadron to Win the Recon Fight (Part 2), Fall 2020.
• From 2020: "Robots and Reconnaissance: We May Never Be Stealthy and Deliberate Again" by COL J. Frederick Dente and CPT Timothy Lee, Spring 2020; "Army Modernization in Next-Generation Vehicles Will Change the Battlefield" by by MAJ Cory W. Wallace, MAJ George M. Morris, MAJ Scott Stephens and MAJ Shawn D. Pardee, Spring 2020; "The All-Weather Reconnaissance and Security Asset: The Cavalry Scout" by CPT Nathan Sitterley, Summer 2020; "At the Forward Edge and Beyond: Lethality and the Armored Brigade Combat Team" by MAJ(P) James Burnett and MAJ Jeff Feser, Fall 2020; "Mobility, Shock and Firepower for Light Armor-Infantry Operations: Past, Present and Future" by CPT S. Scott Diddams, Fall 2020.
• From Summer 2021 edition: "Armored Brigade Combat Team Modernization" by Marco J. Barrera, SFC John A. Roberson and SGM (Retired) Carl Johnson; "Soldier-Centric Design and Combat Vehicle Modernization" by COL Warren Sponsler; "Infantry, Armor Work Together on Mobile Protected Firepower" by COL (Retired) Christopher Stone.
• In this edition: "A Force-Management Approach for the Division Cavalry Squadron" by MAJ Greg Marsh and "Resurrecting 3rd Armored Cavalry Regiment" by LTC Cole C. Pinheiro.

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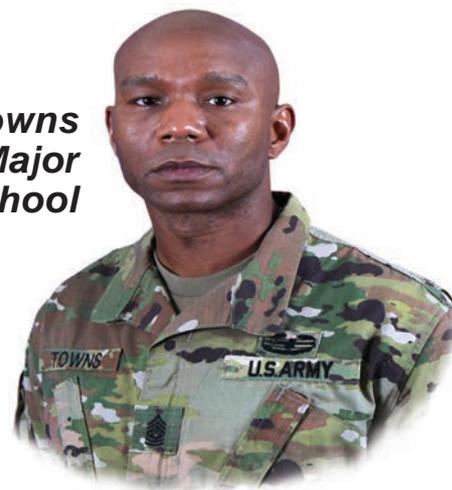
Armor — What a Ride!

As my tenure in the U.S. Army concludes, I would like to thank all the leaders, Soldiers, Department of the Army civilians and families I have encountered over the last 26 years. The invaluable relationships fostered over my career is what I will cherish the most. I had the distinct honor to advocate for the Armor Branch regarding current and future initiatives that support tankers and scouts – not just today but into the future. I am grateful for the opportunity.

Twenty-six years ago I could not imagine the roles and responsibility I would shoulder. As I reflect, I am reminded of the power of leadership, good and bad. I consider the true meaning of selflessness and creating an environment for hope and dreams to become a reality. I ponder the principles for which we stand as the premier fighting force, delivered with humility and dignity and respect for all. I do not profess any conclusions or novel revelations; I'm simply sharing my perspective derived over the years.

Leadership is about the environment created by one's actions. John Quincy Adams once said, "If your actions inspire others to dream more, learn more, do more and become more, you are a leader." "Seed" of any kind will not flourish in bad soil! Commanders and command teams are principal agents for the soil/environment of an organization. I firmly believe every Soldier should feel a strong sense of value and worth to the team, from the youngest private to the most senior officer. Individual Development Plans, thoughtful and constant feedback (coaching, counseling, mentorship) and – perhaps most importantly – genuine care and compassion are essential. What within your environment is missing or what vines need to be removed for the seeds to flourish?

The phrase "To whom much is given, much is expected" is spot-on! The higher the ladder is climbed, the further from the ground and reality one becomes. Leaders must always strive to remain personally connected to the most junior Soldier in the formation. Many reasons are self-explanatory, while some are not. Unfortunately a percentage of leaders have forgotten the challenges (both personal and professional) that junior Soldiers and leaders endure, which make displaying empathy challenging. Leaders should never forget their journey, especially the opportunity afforded us all to learn and grow from failures. Selfless leadership entails humility, empathy and always using your position and authority for the betterment of others, not for personal gain.

Our Army has always faced enormous challenges; the present is no exception. Near-peer adversary advancements, partner-nation alliances, Army modernization efforts, organizational redesign – all during a global pandemic – are just a small list of efforts/challenges. No matter the challenge, we will succeed because of the amazing officers, noncommissioned officers, Soldiers, Department of the Army civilians and – our true unsung heroes – our families.

I would like to welcome CSM Levares Jackson and his wife Katina to the Maneuver Center of Excellence and Armor School. I know they will continue to be a tremendous asset to our Army!

Forge the Thunderbolt! Godspeed!

Training While Deployed:
Lessons for a Garrison Environment

Figure 1. Soldiers of Nomad Troop, 4th Squadron, 3rd Cavalry Regiment, begin movement on a section of the live-fire Nomad Multi-Purpose Range Complex (NMPRC) in northern Iraq in September 2018. *(U.S. Army photo by CPT John Formica)*

**by CPT John Conrad and
CPT John Formica**

When junior Army leaders hear the word "training," it often evokes painful images of bureaucratic obstacles such as range-control restrictions, unit-movement-operations requirements and Directorate of Training Management and Security updates. Conversely, the words "combat deployment" conjure thoughts of operational imperatives like mission requirements, lethality and readiness.

Unless there is an imminent deployment on the training calendar, junior officers and noncommissioned officers (NCOs) tend to fixate on bureaucratic restrictions instead of improving readiness. This results in a perceived divorce between garrison training and combat operations. We must do better as Army leaders. As an example, our troop's overseas deployment provides some key takeaways on fighting these misconceptions while conducting garrison training.

We deployed to northern Iraq in 2018 during a time of transition. By the time our unit had arrived, the Iraqi coalition had retaken Mosul, and Islamic State in Iraq and Syria (ISIS) strongholds had been shattered across the country. In response, U.S. forces dropped the "accompany" aspect of the advise-and-assist role, relegating our formations to fixed-site security. This consisted of manning perimeter towers, operating entry-control points and fulfilling quick-reaction-force requirements.

While this may sound exciting, for the average Soldier, it equated to eight- to 12-hour daily shifts performing the same important, albeit mundane, tasks. We as the troop leadership struggled to combat complacency within the ranks, so we turned to training.

Just as in garrison, three obstacles were immediately apparent: land, ammo and personnel. **Land:** The troop was stationed at a small airfield in northern Iraq. ISIS had destroyed the airbase, and as a result, Coalition Forces and the Iraqis only occupied a fraction of it. On the east side of the airstrip, there were a few kilometers of open terrain, overgrown and filled with rubble.

This area provided a suitable amount of land to build a functional area for small-unit maneuver live-fires. We coordinated with the embedded combat engineers to clear the area of remnant unexploded ordnance and ISIS improvised explosive devices. After a few weeks of effort, a sizable piece of terrain was ready. We dubbed it Nomad Multi-Purpose Range Complex (NMPRC).

Ammo: Unlike in garrison, ammo was no issue. The airstrip had been a staging area for U.S. forces and Iraqi Security Forces before the attack on Mosul. It had a large ammunition holding area, filled with an abundance of training-dedicated munitions.

Figure 2. Soldiers of Nomad Troop's Section B, 2nd Platoon, establish a support-by-fire position at NMPRC in northern Iraq in September 2018. *(U.S. Army photo by 1LT Jamie Douglas)*

Personnel: Now that we had land and ammo, how could we maintain our security responsibilities while training squads? This required engaged leadership and motivated Soldiers. Platoons rotated security responsibilities monthly, so when they were serving as quick-reaction forces, they also executed training. This provided a 30-day dedicated training progression, graduating from completing individual-qualification ranges to day and night dismounted section live-fire lanes.

Accomplishing this required adaptation and innovation, but our Soldiers were up for the challenge. After returning to the States, we reflected on the three lessons-learned from our time spent training in Iraq.

Training shouldn't be paint-by-number

In a garrison environment, range control is a necessary evil. It reduces risk, deconflicts organizational efforts and maintains infrastructure. However, it also caters to the lowest common denominator. Planning training has turned into a paint-by-numbers affair for leaders. Surface danger zones are already drawn, firing boxes are mandated, and Soldiers are at the mercy of range inspectors and target operators.

However, when we arrived in Iraq, there was no range control, let alone a range, so leaders were able to build our training exercises from the ground up. This provided some challenges, but it presented even more opportunities. By cutting out the bureaucracy, we were able to focus purely on honing lethality. Gone were the bureaucratic training distractors: the mandatory cold times, range sign-on and clearing processes, and coordination with the ammunition supply point. These were replaced with tough,

realistic training scenarios, efficient use of time and leader development.

While this level of autonomy is not possible in a garrison environment, the lesson is still applicable. When developing training, leaders must not fixate on bureaucratic restrictions. We must be competent enough as professional officers and NCOs to safely plan and execute training within our formations. If range control did not exist, how would we safely plan and execute training events? This is our responsibility as Army leaders and professionals.

Reinventing the wheel is OK

To realize our goal of maneuver live-fires, leaders had to innovate. Resources were ample, space was abundant and Soldiers were made available, but outside of berms and rubble, NMPRC was indistinguishable from a desert. Our greatest challenge was developing functional targetry and formulating a scheme of maneuver. Based on a shared understanding of the training objectives, the platoons worked together to develop solutions.

With a bit of ingenuity, static and dynamic targets were constructed. Single silhouettes took up positions in the rubble, two-silhouette machinegun teams were laid in bunkers, and three-silhouette teams were manually pulled

Figure 3. Soldiers of Nomad Troop's Section A, 1st Platoon, call for indirect fires from 60mm mortars at NMPRC in northern Iraq in September 2018. **The training was intended to develop live-fire section proficiency.** *(U.S. Army photo by 1LT Jamie Douglas)*

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up using detonation cord (desert mice had eaten away at 550 cord in previous trials). For the night iterations, chemical lights served as indicators of enemy positions. Out of a desert and rubble, we made a two-square-kilometer live-fire range that included a zone-sreconnaissance lane, a screenline and indirect fires.

What made this possible? Leadership got creative. Live-fire training events are one of the few times when Soldiers truly feel like warriors. That instinctual fire burns low amid weeks of motorpool Mondays, inventory layouts and readiness tasks. However, the fire never burns brighter than during live-fire training with a rifle in hand. Repetitive and unoriginal training events can quickly disinterest Soldiers.

"Don't reinvent the wheel" is the advice given to every young leader upon being told to plan and execute training. Most offices and computers are littered with binders and gigabytes of concepts of operations and operations orders, laying out how each training event has been conducted since the current battalion commander was a platoon leader. In choosing the safety of the familiar, junior officers and NCOs condemn their Soldiers to either outdated or mundane training.

As leaders we are told *what* to train, but we are not told *how* to train. A section live-fire can be conducted in innumerable ways using the same range and the same targets, so why do we typically do it the same way every time? It's OK to reinvent the wheel if that results in safely trained Soldiers and better-developed leaders.

Grounded in doctrine

Leadership turnover seems to occur before any deployment. In our case, three of the four platoon leaders had been in position for less than a month before we arrived in Iraq. Nearly half the troop's junior officers and NCOs had not participated in any of the garrison train-up. Although we were all deployed together, the leadership had never trained together.

To begin moving in the right direction, we turned to Army doctrine. Leaders relied on Army Doctrine Publication 7-0, *Training*, to provide the concepts for how to train; Army Doctrine Reference Publication 7-0, *Training Units and Developing Leaders*; and the Army Training Network (ATN) to flesh out the details on these concepts.

We also hosted leadership-development sessions discussing unit-training management, navigating ATN and constructing small-arms ranges. Platoon leaders developed personalized individual and collective training schedules from scratch. Weekly training meetings were implemented with an emphasis on the Eight-Step Training Model.

With a small and achievable training plan, and no outside-resource dependencies, we were able to train sections and develop leaders to our standard and at our pace. Instead of drowning in a condensed and hectic training rotation, we had the opportunity to slow down the process. This allowed junior leaders to see the fruits of their labor and witness training management in action.

This effect had been lost in the train-up for our deployment. Often, we jumped from one training event to the next, checking the block and flying by the seat of our pants. We must do better in garrison. Leaders must provide and protect the time necessary to focus on executing training well instead of just going through the motions. This will provide better development and training for junior leaders and Soldiers, as well as making the process of training that much more satisfying.

Final thoughts

We are entrusted as leaders to prepare our formations for combat to fight and win our nation's wars. Whether operating in a garrison or a deployed environment, planning and executing tough and realistic training poses unique challenges. Our overseas deployment provided clarity on mis-

Figure 4. Soldiers of 4th Squadron, 3rd Cavalry Regiment, encounter "enemy contact" during a zone-reconnaissance training lane at NMPRC in northern Iraq in October 2018. The training was intended to develop live-fire section proficiency. *(U.S. Army photo by 1LT Jamie Douglas)*

takes we made during our train-up.

Oftentimes, "checking the block" or going through the motions provides the easiest route to managing the limited time and resources available in a garrison environment. However, this is a disservice to our Soldiers and our profession. It is all too easy to become fixated on bureaucratic constraints or training distractors. We must remain committed as leaders to improving our Soldiers' lethality and readiness.

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Armored Fighting Vehicles of the World

K21 IFV 🇰🇷

South Korean infantry fighting vehicle, first fielded in 2009. Three-man crew plus nine passengers, weight 25.6 tons. Main armament is a 40mm autocannon, 7.62mm main gun secondary. Layered fiber-reinforced ceramic modular armor and advanced fire-control / stabilization system, which allows accurate shoot-on-the-move capability. In service with: Republic of Korea (RoK) armed forces, with 400 vehicles produced to date.

Uncertainty and the Reserve: Updating a Fundamental of Reconnaissance

by MAJ Ragan T. Rutherford

A current fundamental of reconnaissance is "do not keep reconnaissance assets in reserve." Taken literally, this would imply that a cavalry squadron should not keep any of its assets, such as a scout platoon, in reserve. Yet in all other offensive, defensive or enabling operations, a reserve is not only permitted, it is required.

Field Manual (FM) 3-90-1, *Offense and Defense Vol. 1*, highlights that a reserve exists to deal with uncertainty: "The size of the reserve is relative to the commander's uncertainty about the enemy's capabilities and intentions. The more uncertainty that exists, the larger the reserve."[1] As the force that operates with the most uncertainty, why would the cavalry be forbidden from maintaining reserve during reconnaissance operations? To do so would breach the combined wisdom in all other doctrine.

The Maneuver Center of Excellence Cavalry Leader's Course (CLC) proposes that this fundamental of reconnaissance has been framed incorrectly. The issue is not whether the cavalry can maintain a reserve; the issue is maximizing the employment of reconnaissance assets on reconnaissance tasks. The fundamental should be updated accordingly.

Problem

Army Doctrine Publication (ADP) 3-90, *Offense and Defense*, defines reserve as "that portion of a body of troops that is withheld from action at the beginning of an engagement to be available for a decisive movement."[2] It serves as a means to retain the initiative, take advantage of unexpected success and/or counter tactical reserves.[3] ADP 3-90 goes so far as to say "a successful commander retains a reserve."[4] So why should cavalry formations be handcuffed?

Considering that the cavalry serves as the primary asset for developing the situation, operates in ambiguous environments and has the least amount of time to plan, it is the cavalry that most requires a reserve. For instance, if a squadron is conducting a reconnaissance-in-force to determine an enemy's strength and reaction, the commander should allocate a reserve to support a retrograde, reinforce friendly forces or exploit its success. If the

Figure 1. Not keeping recon assets in reserve is a fundamental of reconnaissance. *(From the Maneuver Center of Excellence "Fundamentals of Reconnaissance" poster series, https://www.benning.army.mil/armor/fundamentals/RF-2.html)*

cavalry came into contact with superior forces without an internal reserve, it would not be able to extricate itself without external support. Furthermore, if the squadron identifies a gap, such as a lightly defended portion of the enemy lines, it could use the reserve to penetrate the seam before the enemy has an opportunity to react.

As the Army reorients toward large-scale combat operations (LSCO), the cavalry will find itself in greater need of a maneuver unit to quickly react to a rapidly changing and complex operational environment. Without such a unit, cavalry will routinely fail to achieve all the other fundamentals of reconnaissance due to its inability to retain its freedom of maneuver.

Solution

The answer is to update cavalry doctrine to promote the employment of a reserve in reconnaissance and security operations. Cavalry doctrine should also include new concepts for structure. The tank company within the armor brigade combat team (ABCT) squadron and the weapons troop within the Stryker brigade combat team provide the squadron with options for organically generating a reserve. Within the infantry brigade combat team, the brigade commander should consider using a platoon from one of the weapons companies to serve as the squadron reserve to maximize the number of assets available to answer brigade priority information requirements (PIR).

Besides updating employment considerations, doctrine should retain the fundamental concept to "not keep reconnaissance assets in reserve." Doctrine should continue promoting the idea of maximizing the employment of reconnaissance assets through all phases of an operation and through the reconnaissance-management options of cueing, mixing and redundancy. The updated description should establish that cavalry units should not keep an asset available in case another asset observes something, in case another asset is destroyed or just in case another reconnaissance opportunity presents itself.

Instead, cavalry units should maximize their ability to collect information by planning and employing the necessary assets appropriately in time and space, with all assets having a task and purpose. The definition should specifically differentiate how a "reserve force" is separate from "keeping reconnaissance assets in reserve," and how employing a reserve force may be necessary to facilitate mission accomplishment.

Conclusion

The current fundamental of reconnaissance "do not keep reconnaissance assets in reserve" and its description will not facilitate the cavalry's necessary actions as the Army focuses on LSCO. Therefore the fundamentals of reconnaissance need to be rewritten to promote the maintenance of a reserve that enables maneuver options for the cavalry commander while also conveying the requirement to use all reconnaissance assets as needed. This adjustment will help the cavalry answer PIR and aggressively shape the battlefield while adhering to the rest of the reconnaissance fundamentals.

The other option is to retain the fundamentals as written and risk having the cavalry operate in an overly cautious manner due to the necessary requirement to maintain freedom of maneuver.

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Figure 2. A Bradley Fighting Vehicle from Troop A, 1st Squadron, 1st Cavalry Regiment, 2nd ABCT, 1st Armored Division, participates in a training event at Fort Bliss, TX. *(U.S. Army photo)*

Cavalry Brigade, Fort Benning, GA. Previous assignments include commander, Troop A and Headquarters Troop, 1st Squadron, 1st Cavalry Regiment, 2nd ABCT, 1st Armored Division, Fort Bliss, TX; plans officer, 2nd ABCT, 1st Armored Division, Fort Bliss; and executive officer, Troop N, 4th Squadron, 2nd Cavalry Regiment, Rose Barracks, Germany. MAJ Rutherford's military schools include CLC, Maneuver Captain's Career Course, Ranger School, Armor Basic Officer Leader's Course, Army Reconnaissance Course, Airborne School and Pathfinder School. He has a bachelor's of arts degree in history from Texas A&M University.

Notes

[1] FM 3-90-1, *Offense and Defense Vol. 1*, Washington, DC: Government Printing Office, 2013.

[2] ADP 3-90, *Offense and Defense*, Washington, DC: Government Printing Office, 2019.

[3] Ibid.

[4] Ibid.

Resurrecting 3rd Armored Cavalry Regiment

by LTC Cole C. Pinheiro

The 3rd Cavalry Regiment, established in 1846 as a regiment of mounted riflemen, marked its 175th birthday with excitement about rumors that the Army will re-establish an armored-cavalry regiment (ACR) within the next two years. Leaders across the Army are assessing an emerging requirement for an ACR to conduct corps-level reconnaissance and security (R&S) operations against a peer threat.

How did we get here?

Multiple 3rd ACR veterans argued against plans more than a decade ago to convert the unit into a Stryker brigade combat team (SBCT) in Fiscal Year 2012 and lamented the loss of III Corps' pre-eminent R&S formation. I argued in 2010 that the conversion to an SBCT was short-sighted, supported by leaders who were misguided by Army Transformation initiatives that were predicated on information-dominance theories. I thought the decision to convert 3rd ACR ignored the regiment's counterinsurgency successes in Iraq and disregarded the fact that 3rd ACR was uniquely capable of serving as III Corps' eyes and ears during major combat.[1]

Although partially accurate, my argument was unfair to the leaders who advocated for 3rd ACR within the bureaucracy and who were forced to make tough choices and compromise to prevent the unit's total decommissioning.

Changes in the international system during the past 10 years have emboldened peer competitors, increased the potential for major conflict and renewed the Army's focus on large-scale combat operations (LSCO). Conditions may now be ripe to vindicate those leaders who saved 3rd ACR from destruction. It's time to affirm that their efforts to preserve the regiment for another day were not in vain. Discussion now centers on the renewed need for an ACR, the proper organization given modern threats and the cost to the total Army force structure.

Purpose of an ACR

The ACR was uniquely capable of conducting a screen, guard or cover to protect an armored corps, and it could conduct reconnaissance across the breadth of a corps to facilitate offensive maneuver. On the offense, the original ACR was built to locate and penetrate the enemy's security zone and forward defenses while protecting friendly divisions from enemy observation, and also while employing direct and indirect fires to preserve their combat power.

Therefore the ACR's mission was to destroy enemy reconnaissance and advance guard units, and then locate and destroy the enemy's first echelon regiments.[2] The ACR would then use positional advantage or direct and indirect fires to fix the lead elements of the second echelon while passing forward divisions to complete the enemy's destruction.

In the defense, the ACR would protect the corps, delay the enemy to provide time for friendly forces, destroy enemy reconnaissance and the advance guard, attrite the first echelon and

Figure 1. SFC Ron Corella, a mortar-platoon sergeant assigned to Killer Troop, 3rd Squadron, 3rd Armored Cavalry Regiment, from Fort Hood, TX, slaps high-fives with Iraqi children in Mosul, Iraq, Feb. 1, 2008. *(Photo by SGT John Crosby, 115th Mobile Public Affairs Detachment)*

Figure 2. SPC Stephen Whitney, a cavalry scout with Headquarters and Headquarters Troop (HHT), 3rd "Thunder" Squadron, 3rd Armored Cavalry Regiment, sits behind an M240B rifle May 28, 2010, while serving on a personal-security detachment at the National Training Center (NTC), Fort Irwin, CA. *(Photo by SGT Roger RyDell Daniels, 16th Mobile Public Affairs Detachment)*

provide early warning to allow the commander to make decisions.

The need to conduct reconnaissance was inherent in all the ACR's missions. Importantly, the ACR's heavy organization allowed it to gain and maintain contact with the enemy's main body, survive, fight for information and provide timely and accurate reporting to answer the corps commander's information requirements, enabling the commander to make decisions.

The 2nd ACR's role in Operation Desert Storm – and the regiment's actions against the Iraqi Tawakalna Division Feb. 26, 1991, during the Battle of 73 Easting – is the prime example of how a highly trained professional ACR can gain situational understanding and seize the initiative for an armored corps.[3]

Contemporary challenges

Russia and China have implemented military-modernization programs to professionalize their forces and field advanced technology to compete in all domains.[4] Peer competitors now possess advanced reconnaissance assets (space, electronic warfare (EW), cyber, special-operations forces, unmanned aerial systems (UAS)), anti-access area-denial systems and long-range massed fires. The Russians in particular have streamlined their sensor-to-shooter processes that allow them to

rapidly detect formations and command posts (CPs) and to deliver massed long-range fires with devastating results.[5]

The notorious Russian fires attack that destroyed a mechanized Ukrainian battalion near Zelenopillya July 11, 2014, highlights this rapid find-fix-finish kill chain. The Russians employed multiple intelligence-collection efforts to identify unit locations and then massed rockets to destroy the concentrated Ukrainian forces.

Russia's investment in sensors and continued modernization of artillery systems is intended to extend battlefield geometry even farther. This will allow them to detect and destroy enemy formations at even greater ranges using their integrated-fires commands.[6] To counter these threats, our formations require long-range intelligence, surveillance, reconnaissance (ISR) platforms and fires. Enemy indirect fires increase the importance of dispersion, survivability and redundant communications among friendly echelons in LSCO.[7]

The U.S. III Corps experimented by employing a traditional ACR against a modern, technologically advanced enemy during Warfighter Exercise (WfX) 21-4 in April 2021. The ACR was comprised of an armored brigade combat team (ABCT) augmented with fires, aviation and engineers. III Corps ordered the regiment to conduct an

advance guard in front of a portion of the corps, destroy enemy forces in the disruption zone and protect the trailing division from direct and indirect fires until the enemy's battle zone was reached.

Although WfX 21-4 was an imperfect replication of LSCO, the simulated enemy's robust reconnaissance capabilities, obstacle efforts, attack aviation and joint fires created significant challenges for the ACR. The exercise has doctrine, organization, training, materiel, leadership, personnel, facilities and policy implications that suggest the next ACR must be designed differently than its Cold War ancestor to achieve its purpose on the modern battlefield.

Previous 3rd ACR

The next ACR should not fully adopt its predecessor's blueprints. It requires redesign to survive all forms of contact against a peer threat. The old 3rd ACR was organized this way:

- Three ground-cavalry squadrons. Each squadron contained three cavalry troops (cavalry troop: nine M1A2 Abrams tanks, 13 M3A3 Bradley Fighting Vehicles and two M1064 mortar carriers, plus headquarters, medical and maintenance sections), one tank company, an organic field-artillery battery (M109A6) and an HHT, which contained the staff, medical platoon and support platoon.

- An attack-aviation squadron with an assault company and aviation-maintenance company (4th Squadron, 3rd ACR: 24 AH-64 Apache attack helicopters and 10 UH-60 Blackhawk helicopters).

- A regimental-support squadron (RSS).

The regiment's separate companies included 66th Military Intelligence Company, 43rd Combat Engineer Company (three sapper platoons and an assault/obstacle platoon) and a Bradley Linebacker battery (for air defense).

The ACR was well-resourced with decentralized firepower but was short on the dismounts required to clear key terrain to enable maneuver. The regiment knew that enemy with anti-armor systems in complex terrain was a significant threat, and the ACR's only

solution was suppressive fire. Scenarios similar to what the Israeli Defense Forces faced in 2006 during the invasion of Lebanon were a real possibility.

Intelligence collection

If the future ACR is going to successfully conduct R&S for a corps on a deeper battlefield, the intelligence warfighting function requires reinforcement. The ACR will likely continue to operate forward enough of the divisions to provide decision space, but it will not physically be located in the corps' deep area past the coordinated fire line (CFL). If the ACR is going to contribute to the corps' shaping efforts or inform the corps commander's decision-making, it must be able to see and detect enemy formations deeper on the modern battlefield. This requires more cyber and EW capabilities at the regimental level, and more low-level voice-intercept teams to allow squadrons to gain signal intelligence across a vast front.

UAS. The ACR requires a UAS capability that can range the corps' deep area to assist in detection and delivery of joint fires. This UAS capability, unlike the MQ-1C Gray Eagle, should be easily launched and recovered without the use of an airfield so that the ACR can employ it effectively while maintaining tempo in the offense. The ACR may incorporate future semi-autonomous and autonomous ground and air sensors when they become available to extend its reach. The regiment should field small UAS at company level to enable tactical maneuver. Sensors should be networked so that ground-combat systems can view them, and they should support the joint force interoperability initiative of any sensor, any shooter.

Human intelligence (HUMINT). The regiment should retain HUMINT capability to collect from the population. These intelligence capabilities will support both the ACR's close fight and the corps' deep fight.

Force structure, organizational restructure

Fires. The fires complex should differ significantly from the traditional ACR. An organic field-artillery battalion is superior to the old independent battery model because it provides a battalion commander with staff to train the fires enterprise and to assist in fires planning and execution during LSCO. The ACR can anticipate that the corps and division commanders will place the M142 High-Mobility Artillery Rocket System and the M270 Multiple-Launch Rocket System as far forward as possible to shape their respective deep fights, normally behind the ACR's lead elements within the ACR's support area.

The ACR will clear position areas for artillery of the field-artillery brigade and should advocate for a general-support reinforcing relationship with those rocket battalions. Corps and

Figure 3. SPC Melvin Stewart, R Troop, 4th "Longknife" Squadron, 3rd Armored Cavalry, talks with the pilots after connecting a fuel line to an AH-64 Apache helicopter May 27, 2010, during four weeks of training at NTC. *(Photo by SGT Roger RyDell Daniels, 16th Mobile Public Affairs Detachment)*

division commanders will use their long-range munitions to disintegrate the enemy's integrated air-defense systems and destroy the integrated-fires command (IFC), but the ACR can effectively use the shorter range, less-desired M26 rockets to enable its maneuver.

The Army's nascent extended-range cannon artillery (ERCA) should be fielded to the ACR. Pairing ERCA with long-range sensors, including radars, would allow the ACR to range the enemy's artillery with organic fires, which would help shape the corps' high-payoff target list and protect the divisions from the enemy's IFC. The regimental commander could attach batteries to ground-cavalry squadrons to enable operations or keep the batteries consolidated under regimental control to mass fires.

Finally, when the ACR is operating as the lead element of the corps' forward-line-of-own-troops (FLOT), it should be the proponent that controls the CFL's movement to maximize the use of fires between the CFL and fires-support coordination line.

Airspace. The ACR is challenged because it cannot control airspace, and this impedes responsive fires, attack aviation and joint fires. Lacking a joint air-ground integration center, the ACR can only manage airspace if a division allocates it to them, and the current size and composition of the regimental fires-and-effects coordination center does not favor positive control of airspace. During the restructure, the Army should consider providing the ACR with the capability to control airspace to enable responsive, deep joint and surface fires in support of the corps.

Movement and maneuver. The Army should rectify the original ACR's shortcomings when reconstituting the movement-and-maneuver warfighting function. Ground-cavalry squadrons consisting of three troops (each with two scout platoons and two tank platoons), a tank company and a Stryker or mechanized-infantry company would have enough combat power to achieve the ACR's original purpose. Each squadron would contain the infantry required to clear complex terrain or to employ anti-armor weapons to enable rapid maneuver.

Army research-and-development initiatives, including unmanned ground-combat vehicles and networked UAS platforms, should be considered when modernizing the ACR. Organic mobile 120mm mortars would provide cavalry troops with responsive fires to enable maneuver. The regiment's engineer capability should include sapper platoons for each cavalry squadron as well as redundant breaching, bridging and blade assets to enable mobility and countermobility against an enemy with significant engineer capabilities. But the regiment may lose some dig assets that standard brigade combat teams (BCTs) use for survivability in the defense. The right engineer structure may have more capabilities than 43rd Engineers but less than a brigade engineer battalion.

Air cavalry. Lastly, the ACR requires a unique air-cavalry squadron that contains three air-cavalry troops of reconnaissance aircraft, an assault-aviation company to move infantry and supplies, a medical-evacuation section and an aviation-maintenance company. The regimental commander would decide how to employ the aircraft, either decentralized in support of the cavalry squadrons or as a battalion-sized maneuver element to destroy large enemy formations.

Air defense. The ACR needs more assets to protect itself from contemporary peer threats. Arrayed across the corps' FLOT, the ACR is extremely vulnerable to enemy air attack. This threat necessitates short-range air-defense (SHORAD) systems that are lightly armored and capable of surviving direct-fire attacks from enemy ground-reconnaissance elements. The original ACR architects understood this and provided a battery of Bradley Linebackers. Future solutions may include mobile vehicle-mounted SHORAD systems and dismounted Stinger teams in the cavalry troops and infantry companies.

Other assets. The ACR also requires counter-UAS systems to prevent the enemy from detecting the regiment's formations. The increased chemical, biological, radiological, nuclear and explosives threat suggests that the ACR requires a chemical company with a chemical reconnaissance platoon

and decontamination capabilities to maintain tempo for the corps.

Impact on support

The RSS would struggle to support this organization without restructuring. While each cavalry squadron will maintain its vehicle fleet with its forward-support company, the RSS requires a passback maintenance capability to reconstitute combat power quickly and return it to the fight. The ACR's position in front of the corps makes evacuating broken vehicles to a cannibalization point or trailing division-support area problematic. The RSS maintenance company should have organic military-occupation specialty 91A, 91M and 91P mechanics to help repair tanks, Bradleys and Paladins.

This tracked mechanic capability was removed from the brigade-support battalion's Bravo companies, but this should be reconsidered given the ACR's unique mission. For the same reason, the RSS needs some heavy-equipment tractor-trailer capability for recovery to the regimental-support area (RSA), even if it is only given these assets during combat operations.

Within the ACR's supply-support-activity platoon, the common authorized stockage listing should be more robust than a BCT's, and the regimental commander should be authorized to direct more lines to enable greater operational reach.

Enemy activity, displaced persons and the large volume of follow-on friendly forces will produce congested lines of communication (LoCs), traffic-control problems and a priority for movement forward toward the front. The RSS should anticipate that the expeditionary sustainment command throughput will be interrupted as resupply convoys pass through divisions to reach the RSA. Resupply will be delayed in LSCO as sustainment units fight to push commodities forward.

Accordingly, the RSS should have water production and storage capability, greater mobile bulk-fuel capacity and more transportation capability to carry additional Class V and commodities to prevent the ACR from culminating

in front of the corps. Operating across the breadth of a corps will require the regiment to establish multiple forward logistics elements to support the dispersed squadrons. The extended LoCs between these sustainment nodes produce command-and-control (C2) challenges at echelon and distribution problems as drivers are pushed to the limits of human endurance.

CPs

The ACR requires CPs that are equipped and manned to control increasingly complicated and dispersed operations across a vast front. CPs must be smaller, mobile, camouflaged and lightly armored to protect against artillery shrapnel. While the Army has experimented with modular Expando-Van-based CPs, the force requires armored platforms that are rapidly established and displaced, enable staff collaboration and are networked for modern systems.

The depth and breadth of the battlefield require that ACRs be manned and equipped to maintain both a main CP and a tactical CP over a long time and to be outfitted with redundancy in all command, control, communications, computers and intelligence systems to ensure C2 survivability. Directional antennas, high-frequency and high-capacity line-of-sight radios can help maintain communications in a contested environment. The contemporary reality is that peer threats will be able to intermittently degrade communications across the spectrum.

Mission command, facilitated by a firm understanding of the commander's intent and initiative, are fundamental in the LSCO fight. The ACR has a role in answering the corps commander's critical information requirements and in shaping the corps' deep and close fights. The regimental staff should be larger and more senior than a BCT to meet those requirements. A post-battalion-command lieutenant colonel serving as the deputy commander would assist the regimental commander in synchronizing all warfighting functions across the regiment's area of operations.

Winners and losers

The most contentious portion of the debate is who will win and lose in any force-structure change. Branch equities are at stake if 3rd Cavalry Regiment converts from an SBCT to an ACR. There is pervasive concern on where Army leadership will make cuts across the total Army force to field a modern ACR. Armor Branch, for example, has been discussing the importance of reconstituting division cavalry and an ACR because of the greater likelihood of major conflict.

Corps and divisions are the units of action in LSCO, and these commanders currently are overly reliant on ISR and national assets for reconnaissance. We will likely have to shutter the ABCTs' armored reconnaissance squadrons to make force-structure changes, perhaps leaving the ABCT with a brigade reconnaissance troop. However, change is hard for leaders who spent the last two decades with ABCTs as the units of action. These leaders became accustomed to strong, responsive BCT R&S formations.

Our dirt combat-training centers have struggled to replicate corps and division effects. Multiple decisive-action rotations have conditioned BCT leaders to distrust division intelligence feeds and to value brigade-level reconnaissance squadrons. For these reasons, a decision to move reconnaissance assets from BCTs to divisions/corps would require cultural and normative changes across multiple branches.

The greatest challenge decision-makers face is determining where to make force-structure cuts and what emerging technologies to fund. The ACR's maintenance cost is high and a deterrent to conversion in a budget-constrained environment. In fact, maintenance cost was a determining factor in the decision to transform 3rd ACR to an SBCT. Therefore, budget is likely the largest political and bureaucratic impediment to rebuilding the ACR.

Conversations across the force are converging in one aspect: a modern ACR structure should not simply mirror the storied regiment that was disassembled in 2012. However, there is one vital element that must remain the same in the next 3rd ACR. The troopers' esprit de corps and aggressive mentality has been the regiment's lifeblood for 175 years and the driving force behind its many notable contributions to our nation's defense. The regiment still practices its unique cavalry traditions, and its members are proud of its reconnaissance heritage.

Figure 4. "Donovian" forces, depicted by Soldiers from 11th ACR, advance through the "city" of Razish at NTC, Fort Irwin, CA, March 17, 2012. The Donovian forces are used in the training environment to provide a greater sense of realism during training – 11th ACR serves as the opposing force (OPFOR) at NTC. However, the U.S. Army's dirt combat-training centers have struggled to replicate corps and division effects. *(Photo by SGT Zachary A. Gardner, 11th Armored Cavalry Regiment Public Affairs Office)*

Figure 5. 278th Armored Cavalry Regiment (Tennessee Army National Guard) Soldiers test-fire their weapons before entering Iraq during Operation Iraqi Freedom III. The 278th is the only ACR in the National Guard as of 2017 and the only other current ACR besides 11th ACR. *(U.S. Army photo)*

Senior leaders should be proud that they were able to protect this from destruction a decade ago. Today 3rd Cavalry Regiment is blessed with outstanding leaders and disciplined troopers who are awaiting a final decision on transformation, and they are ready to resume their role as III Corps' ACR.

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Notes

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[4] H.R. McMaster, ***Battlegrounds: The Fight to Defend the Free World***, New York: HarperCollins Publishers, 2020.

[5] Andrew Radin *et al*, ***The Future of the Russian Military: Russia's Ground Combat Capabilities and Implications for U.S.-Russia Competition***, RAND Corporation, 2019.

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[7] Army Doctrine Publication 3-0, ***Operations***.

Current ACRs

11th ACR (Active Army)

278th ACR (Tennessee Army National Guard)

Former Active Army ACRs

2nd ACR (now a Stryker BCT)

3rd ACR (now a Stryker BCT)

6th ACR (converted to an U.S. Army Regimental System (USARS) aviation regiment)

14th Armored Cavalry Regiment: Broken up. 1st Squadron was reorganized to 1st BCT, 2nd Infantry Division, Joint Base Lewis-McChord, WA; 2nd Squadron is a Cavalry squadron of 2nd BCT (an infantry BCT), 25th Infantry Division, Schofield Barracks, HI; 4th Squadron is inactive but had been reflagged to 5th Squadron, 1st Cavalry, 1st BCT, 25th Infantry Division; 5th Squadron, inactive, had been reflagged to 2nd Squadron, 14th Cavalry Regiment.

17th Cavalry Regiment (Armored) (now a USARS parent regiment)

Former Reserve Component Guard ACRs (disbanded or redesignated as non-ACRs; most were part of the Organized Reserve Corps)

101st Armored Cavalry Regiment (New York Army National Guard)

102nd Armored Cavalry Regiment (New Jersey Army National Guard)

103rd Armored Cavalry Regiment (Maine Army National Guard)

104th Armored Cavalry Regiment (Pennsylvania Army National Guard)

107th Armored Cavalry Regiment (Ohio Army National Guard)

108th Armored Cavalry Regiment (Mississippi Army National Guard)

111th Armored Cavalry Regiment (California National Guard)

112th Armored Cavalry Regiment (Texas National Guard)

115th Armored Cavalry (Wyoming Army National Guard)

116th Armored Cavalry Regiment (Idaho Army National Guard)

150th Armored Cavalry Regiment (West Virginia Army National Guard)

163rd Armored Cavalry Regiment (Montana Army National Guard)

173rd Armored Cavalry Regiment (Tennessee National Guard)

300th Armored Cavalry Regiment

301st Armored Cavalry Regiment

302nd Armored Cavalry Regiment

303rd Armored Cavalry Regiment

304th Armored Cavalry Regiment

305th Armored Cavalry Regiment

306th Armored Cavalry Regiment

308th Armored Cavalry Regiment

309th Armored Cavalry Regiment

310th Armored Cavalry Regiment

311th Armored Cavalry Regiment

314th Armored Cavalry Regiment

317th Armored Cavalry Regiment

320th Armored Cavalry Regiment

321st Armored Cavalry Regiment

Table 1. The Army's two ACRs are actually only ACRs in name – 11th ACR is NTC's OPFOR, and 278th ACR is an ABCT. Many Army ACRs were inactivated or redesignated. Per the Armor Branch historian, Dr. Robert S. Cameron, the original ACRs, which were created to constitute corps and Army R&S assets, collectively served as a tactical reserve in Europe as the Cold War began. In fact, the first three ACRs organized in Europe were converted from constabulary units, so their focus shifted from stability to combat operations. Between the late 1940s and the 1990s, the ACRs gained in combat power, particularly with the inclusion of an aviation squadron; in the 1990s, 3rd ACR included an HHT, three ground-cavalry squadrons, an aviation squadron and a support squadron. Each 3rd ACR ground-cavalry squadron included a headquarters troop, a tank company, an artillery battery and three cavalry troops (each with two tank platoons, two scout platoons, a mortar section, a maintenance section and a headquarters). The regiment also included organic nuclear-biological-chemical, air-defense artillery, military intelligence and engineer assets.

U.S. 'Snake Squadron' Cavalry Soldiers Integrate with New Zealand Infantry Regiment Recon Units to Train

by SSG John T. Pantalici

The U.S. 25th Infantry Division's reconnaissance troops have historically strengthened international partnerships through repeated training exchanges in the South Pacific. As part of this ongoing initiative, Soldiers of the 2nd Infantry Brigade Combat Team's 2nd Squadron, 14th Cavalry Regiment, have attended courses conducted by New Zealand's army since 2018.

In 2020 the 2-14 Cavalry "Snake Squadron" Soldiers witnessed how the Royal New Zealand Infantry Regiment (RNZIR) 2nd/1st Battalion's reconnaissance (recce) platoon imparted institutional knowledge of reconnaissance operations. American Soldiers were integrated into RNZIR recce detachments during their annual execution of the Dismounted Reconnaissance Patrol Procedures Course.

The 2/1 recce soldiers demonstrated their expertise and professionalism in the execution of light reconnaissance tasks and training. The execution of international operations will continue to

be a crucial component of readiness in the Pacific, and New Zealand's army continues to be a valued and essential contributor to a free and open South Pacific.

New Zealand army background

In the New Zealand army's doctrinal concept, the role of the infantry battalion recce platoon is to provide the commander with information about the enemy and terrain within the area of operations, areas of interest and battlespace. In the RNZIR, the patrol is the fundamental unit: the sensor team fighting for information. Squad sections are the essential element. The emphasis on the application of technical skills and tactical knowledge in the small unit is the foundation of success for the larger organization throughout all phases of war.

The recce-platoon course covers the tactics and techniques that allow its selected soldiers to operate in areas of uncertainty, complexity and ambiguity, the gray areas of the 21st Century. Dismounted Patrol Procedures

Courses are run yearly by the recce platoon at Burnham Military Camp on the Southern Island home of 2/1 RN-ZIR.

The New Zealand army's institutional reconnaissance training was informed by jungle warfare in Vietnam. New Zealand army recce and tracking courses have existed in challenging environments since the 1970s in places such as Malaya and Singapore. The 2/1 Recce's Patrol Procedures Course has existed since the Cold War exploits of New Zealand's "Grey Ghosts." Hard learned-lessons in jungle fieldcraft and survival in the bush have been transmitted through decades. In the jungles of the Southeast Asia, Kiwi soldiers knew they had become one with the environment when the "flies wouldn't even land on them."[1] Throughout the country's history, New Zealand's soldiers have demonstrated a willingness to endure shared hardship on patrol.

Modern operational knowledge within the 2/1's recce platoon has been derived from downrange excursions in East Timor, the Solomon Islands,

Figure 1. Soldiers employ camouflage techniques. *(Photo by SSG John Pantalici)*

Afghanistan and Iraq. Senior course instructors have spent most of their careers within the same units, providing them in-depth institutional and cultural knowledge of their formations. Soldiers, noncommissioned officers and commissioned officers often serve longer-term assignments in their battalions.

New Zealand's army brigade is divided between the Northern and Southern Islands. It is common for recce soldiers to experience Special Air Service selection and service. Though well versed in combat operations, the New Zealand army experience goes beyond the skillful application of military force. The army has also served its citizens well assisting in earthquake-relief efforts in 2011 and Australian brushfires in 2020.

Required course

The successful completion of the patrol-procedures course is a prerequisite for battalion infantry soldiers to serve in the recce platoon and the sniper section. The course is comprised primarily of enlisted soldiers, although officers attend as well. The course is useful for infantry officers to learn the role of reconnaissance elements and for the army to vet future recce-platoon leaders. Soldiers must demonstrate an aptitude for reconnaissance and are assessed on their

personalities and individual discipline. Tactical patience, initiative, detail-oriented observation and the ability to operate in small formations with greater responsibility is crucial for service within the recce platoon.

The course aims to prepare selected

regular-force infantry subalterns and other ranks in the interpretation and applications of the dismounted-reconnaissance platoon standing operating procedures, according to the 2/1 RNZIR joining instruction.

Structure of New Zealand recce platoon

An overview of platoon roles covered in a doctrinal portion of the classroom instruction demonstrated that the detachment is comparable to an American Army squad. The detachment commander is the platoon leader, and the 2IC or "second in charge" is the platoon sergeant. The detachment also consists of a scout, a signalman, a machine gunner and an interchangeable marksman or medic spot.

The New Zealand army recon forces have received changes to their force structure much like the doctrinal adjustments made to platoons, squads and sections in the U.S Army during the last decade. New Zealand recce detachments have fluctuated from between four and six individuals, with three detachments forming a dismounted recce platoon.

Figure 2. RNZIR recce-detachment structure.

Cooperation with U.S. Army

Throughout the decades, the U.S. Army has greatly benefitted from its relationship with the New Zealand defense forces. Fighting formations of both countries worked together during both world wars, the conflict in Vietnam and right through the Global War on Terrorism to present day.

There are interesting parallels between U.S. Apache scouts and native Maori trackers in New Zealand. GEN Donn Starry, former commanding general of U.S. Army Training and Doctrine Command, who was the architect the U.S. AirLand Battle doctrine, specifically mentioned the skill of Maori trackers in the Vietnam jungle-warfare courses: "The soldiers who were teaching at Tracking Wing were New Zealander, native Maori. They were very well educated but retained their traditional skills. The more we watched our Soldiers in 11th Cavalry, the more we tried to train them well in those skills."[2]

The Maori soldiers' experience increased survivability in the Blackhorse Regiment's battlespace.

The 25th Infantry Division has committed to continuing this relationship with the New Zealand army. The division's chief of interoperability and the fusion cell have ensured that training partnerships have flourished. In the past two years, Warrior Brigade of the 25th Infantry's 2nd Brigade Combat Team (BCT) has hosted Kiwi soldiers at the U.S. Joint Readiness Training Center (JRTC) and successfully integrated them into the order of battle.

Warrior Brigade's 1st Battalion, 27th Infantry, integrated the New Zealand recce troops in JRTC Exercise 18-04. The 2-14 Cavalry has completed more than four exchanges in the last two years, sending its Soldiers to patrol-procedures and tracking courses on both the Northern and Southern Islands of New Zealand.

2020 patrol procedures

In February 2020, patrol-procedures students gathered for the initial phase of instruction. American students were introduced to the New Zealand armed-forces structure, including a breakdown of its army's capabilities and history. Weapons classes oriented U.S. Soldiers to the personal weapons carried by Kiwi soldiers. For example, RNZIR forces recently replaced their Steyr rifles with the Modular Ambidextrous Rifle System-Light carbine. The New Zealand army also employed Fabrique National Herstal 240 machineguns with modified barrel releases, increasing the efficiency of hot-barrel changes.

Classroom instruction covered recent New Zealand reconnaissance missions and the latest doctrine. Patrol equipment was covered in depth. Recce soldiers may adjust their kit and make modifications to their gear setup as long as the changes make sense and contribute to platoon survivability and lethality. They use various camouflage patterns such as Disruptive Pattern Material, Army Combat Uniform and the Multi-Terrain Pattern (MTP), which closely resembles the British MTP.

Another notable feature of the recce-platoon loadout is the use of a "grab bag." This bag is smaller than the U.S. standard issue "assault pack" but allows the user to quickly separate a bare-essentials survival kit from the main rucksack. Every soldier carries a survival kit in the event of separation from the detachment.

The 2/1 Recce also had the opportunity to field newly issued rucksacks. Many soldiers were already making modifications to the packs, demonstrating the individual autonomy afforded to detachment members.

Attention to fieldcraft

From the onset of the course, fieldcraft received heavy attention during instruction. The students broke down their ration packs and created tape-sealed bags, which would be familiar to many U.S. Ranger School and Reconnaissance and Surveillance Leader's Course veterans. Rainwater-collection methods were taught to the students. Special attention was paid to water rationing.

After equipment and "stores" were prepared, the movement out west began. The U.S. party enjoyed the scenic movement from Burnham Military Camp and passage through the majestic Arthur's Pass National Park Region. The climate and environment of the training area conjured memories of Joint Base Lewis-McChord, WA, with weather patterns that serve as a mirror world to the gray skies, mist and rain of America's Pacific Northwest. New Zealand's Hochstetter Forest is a challenging environment for the application of small-group patrol procedures.

Patrolling instruction begins with the execution of hand signals and movement in formations such as the corridor formation and several variations of the Australian peel.[3] The importance of identifying and selecting navigation attack points, heel-to-toe movement and other individual movement actions were taught and stressed. Soldiers were taught to set up bivouac sites with their army-issued "hooch" and how to use a simple rainwater-collection method. Many of these techniques were subtly different but familiar to American scouts. Exchange Soldiers focused on and emphasized tactical similarities, not variance.

Demonstration team

One thing that was particularly noteworthy from a training and teaching standpoint was the designation and employment of a demonstration team, referred to as the demo squad. The members of this squad are previous class graduates and therefore more seasoned members of the platoon. In addition to serving as demonstrators, they also took care of the command post and served as the opposing force throughout the course. Being assigned to this cadre is a privilege within the platoon. After receiving instruction and demonstration, battle drills were recorded by the instructors and critiqued with the detachments during after-action reviews.

In the first few days of the course, after repeated execution of battle drills, the instruction moved into scouting techniques. Detachment members learned how to use arcs during the reconnaissance patrol, which is comparable to sectors of fire in American maneuver doctrine. Tracking and counter-tracking methods were also taught during this period.

Figure 3. The patrol-procedures demonstration team evacuates a notional casualty. *(Photo by SSG John Pantalici)*

learning specialized skillsets like visual track."

Due to the use of New Zealand helicopters to assist with the Australian wildfire relief at the time, the air-ground integration and airmobile-drills instruction were unable to be executed. On a positive note, the absence of these enablers was a reminder of how essential defense-force equipment is to crisis management in the region.

Vehicle drop-off and extraction methods were the next phase of the course. Two military trucks used for extraction exercises were the Pinzgauer transport (frequently referred to as a Pinny) and the medium heavy operational vehicle (MHOV) cargo truck. (The MHOV is comparable to the U.S. Army light medium tactical vehicle.) The vehicle drop-off exercises once again highlighted the institutional attention to tailoring tactics and employing creative methods for equipment use at nearly every level.

A heavy emphasis on expedient and stealthy vehicle deployment could pay dividends for light-infantry units using off-road vehicles like the MRZR[4] all-terrain vehicles and the infantry-squad vehicle. Paying careful attention to rapid pick-up procedures could significantly increase survivability during egress or when disengagement criteria has been met.

Pick-up area formations were taught and executed in conjunction with

Land-navigation techniques are executed with Silva Prismatic compasses, and mils are used for orientation as well as fire-support training. Detachment members practiced a memory game common to sniper training.

Camouflage and movement techniques are heavily emphasized. Spot reports were noted if soldiers made too much noise or movement while patrolling; there was heavy emphasis on disciplined movement.

Demonstration team leader LCpl S. Richie explained what drew him and others to battalion reconnaissance: "Working in a recon platoon, the hierarchy I have experienced is a lot flatter. I've worked with a lot more flexibility and freedom to just do what needs to be done, which builds a lot of trust and respect. [I've experienced]

complex taskings, greater responsibilities, high levels of fitness and

Figure 4. The demonstration team executes a patrol movement. *(Photo by SSG John Pantalici)*

ARMOR ⚔

boarding procedures when vehicles were moving to increase survivability while conducting exfiltration.

Observation posts are a point of pride for detachment commanders. Bushnell and Leopold spotting scopes are used for observation. Instructors emphasized how observation nodes can effectively influence and shape an operation's outcome. Rendezvous-point procedures included one of the more complicated movements of the class. The scenario soldiers faced during this training found them separated during enemy contact and given a predetermined link-up point to reach by morning. Challenging night movement in the dark forests of New Zealand's West Coast followed.

Close-target reconnaissance exercises were also executed by all detachments. The platoon practiced ambush techniques as a contingency, and there was instruction on the implementation of Claymore mines.

Another task was the creation and location of sustainment caches.

Members of the reconnaissance patrols had a lot of time to get comfortable with being uncomfortable. Soldiers endured the rain, terrain and swarms of sandflies/mosquitos to demonstrate their aptitude and willingness to serve as the commander's eyes and ears.

The culminating event in the course was an observation mission of an objective. The demo team occupied a farmhouse, while soldiers in the course observed their patterns of life and compiled their collection notes in logbooks. Rendezvous procedures were executed at the conclusion of the observation.

Future of conflict

A role within the reconnaissance and security (R&S) platoon is truly earned; only five of 15 students were selected for posting to the R&S platoon at the conclusion of the Dismounted Reconnaissance Patrol Procedures Course. The American I Corps Soldiers successfully adapted New Zealand tactics, techniques and procedures (TTPs) and

standing operating procedures (SOPs), and it was a truly formative experience. RNZIR CPL R. Herewini summed it up nicely: "Having Coalition partners always brings a different dynamic, and [it] is great for interoperability."

Lightning Division Soldiers were successful in their primary task: interpreting and applying dismounted reconnaissance-platoon SOPs.

Leaders within the New Zealand defense forces presented their ideas about what the future of conflict might look like. Like U.S. reconnaissance platoons, doctrinal change is a constant. New Zealand recce platoon SSG M. Lodoviko explained how the course has evolved through the decade: "The content remains the same, but with the changing environment, equipment and SOPs, we have to test and apply a few procedures moving forward. What I've seen change is the patrol numbers being pushed up to six-person patrols, which has [required] us to refine how we operate and include a sixth person in the patrols. With that is also a good chance

Figure 5. Patrol-procedures students execute break-contact drills. *(Photo by SSG John Pantalici)*

for us to test and adjust our SOPs to solidify how we operate in the future."

Patrol Procedures Course Manager SGT B. Ta'ala was part of a guest rotation at JRTC in Louisiana and described how the experience influenced platoon systems: "Having a free-play enemy that has armored and air assets really keeps you on your toes with no room for complacency! Having enemy unmanned aerial vehicles constantly follow us and being on the receiving end of indirect fire highlighted shortfalls in our TTP/SOPs."

Military formations in the 21st Century have multiple emerging threats on the battlefield to consider. Drones, swarm tactics and electronic warfare – combined with deadly precision fires – are all threats facing Pacific forces. Shared training experience in courses and at combat-training centers may be difficult to facilitate, but they are essential.

In the new decade, joint training through network-linked augmented-reality systems may become standard. New Zealand's reconnaissance soldiers are developing ways to meld new technology with decades of tried-and-true fieldcraft. Leaders within the New Zealand military recognize the challenge of serving in an era of rapid and persistent innovation.

Though New Zealand's forces are forward-leaning, they do a superb job of retaining knowledge of institutional and operational history. Burnham Camp produces an excellent publication called *The Rifleman* that captures training, photos and other historical data.

Takeaways

The patrol-procedures course served as an excellent example of a how a platoon can build, maintain and continue to cultivate a solid foundation of knowledge for reconnaissance Soldiers and leaders. Multinational partnerships must continue to be a priority across all operational environments. International partnership among junior Soldiers expands knowledge and

allows Soldiers to share their knowledge in new settings. The Kiwi approach to combat is tailor-made for the warfare of an expeditionary nature across Pacific island crucibles.

A shared language is a big part of shared knowledge. As GEN Robert B. Brown, LTC R. Blake Lackey and MAJ Brian G. Forester wrote in *Military Review*, "Procedural interoperability involves agreed-upon terminology [and TTP] that minimize doctrinal differences."[5]

The 25th Infantry Division has brought leaders and lessons from New Zealand and Australia to combat-training centers across the United States and must continue to do so. This type of training exchange must remain nested in higher organizational objectives. Presence in these training arenas ensures that knowledge is continually exchanged across formations. Committing forces to regional interoperability creates a shared body of doctrinal knowledge.

Likewise, New Zealand soldiers will benefit from participation in events like the U.S. Army's Gainey Cup and Best Sniper Competition. Bringing Kiwi troops into the fold at these international events will strengthen ties between our nations and sustain an expeditionary spirit in both countries. Continued cooperation will be essential to the success of any future multidomain operations task force.

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Division. SSG Pantalici's military schools include the Advanced Leader's Course, Army Combatives Levels 1 and 2, Mountain Warrior Leader's Course, Cold Weather Leader's Course, Northern Warfare Training Center and the Air-Assault Course.

Notes

[1] Dr. Deborah Challinor, *Grey Ghosts: New Zealand Vietnam Vets Talk About Their War,* New Zealand: Hodder Moa Beckett, Jan. 1, 1998.

[2] Mike Guardia, *Crusader: General Donn Starry and the Army of His Times*, Havertown, PA: Casemate, 2018.

[3] As explained on Wikipedia, the "Australian peel," "center peel" or simply "peel" for short is a type of retreat practiced by infantrymen. This particular tactic is more specifically designed for situations where smaller groups of infantry withdraw from an engagement with a much larger force. In general terms, it is a sloped or diagonal retreat from the enemy. The slanting motion of the tactic gives the impression of increasing numbers of infantry joining the battle, a psychological move designed to deter the opposition. The slanting motion also has the benefit of keeping open one's field of fire. Retreating directly backward would put the soldier too closely behind his/her own men, severely limiting his/her field of fire.

[4] MRZR is not an acronym but a designator.

[5] GEN Robert B. Brown, LTC R. Blake Lackey and MAJ Brian G. Forester, "Competing with China for a Free and Open Indo-Pacific," *Military Review*, September-October 2019 edition.

ACRONYM QUICK-SCAN

BCT – brigade combat team
JRTC – Joint Readiness Training Center
MHOV – medium heavy operational vehicle
MTP – Multi-Terrain Pattern (uniform camouflage)
R&S – reconnaissance and security
RNZIR – Royal New Zealand Infantry Regiment
SOP – standing operating procedure
TTP – tactics, techniques and procedures

Developing Effective Priority Intelligence Requirements for Brigade Combat Teams in Large-Scale Combat Operations

by CPT David Tillman

Developing and managing tactical-level information requirements is a challenging and dynamic process that is supported by scarce, even occasionally conflicting, doctrine. This article will focus exclusively on the development of priority intelligence requirements (PIRs), which when aggregated with friendly-forces information requirements (FFIR), form the overarching commander's critical information requirements.[1]

Although PIRs are typically managed by the brigade S-2 and tasked down to the brigade information-collection (IC) manager, they are ultimately approved and owned by the brigade commander. Therefore PIR development is a commander-driven process and occurs in perpetuity. It requires a foundational understanding of both past and present doctrine, but, more importantly, it necessitates a holistic understanding of how the commander visualizes employing his/her brigade combat team (BCT) in a Joint contested environment.

Rather than rewrite doctrine to create more requirements, such as targeting-intelligence requirements in the new Army Techniques Publication 2-01, the definition of PIR should be broadened and enhanced from its current state. After all, to find the high-payoff targets (HPTs) in PIR, one need not look any further than the "indicator" column of the IC matrix. PIRs are best defined as information requirements pertaining to the enemy or operational environment, deemed critical to either 1) reaching a commander's decision point (DP)[2] or 2) achieving a specific desired effect.[3] This definition ultimately provides a spectrum to frame PIR-development methodology. The first part of this definition is what intelligence professionals grapple with the most – directly tying PIR to decision points at echelon.

However, the second part of the
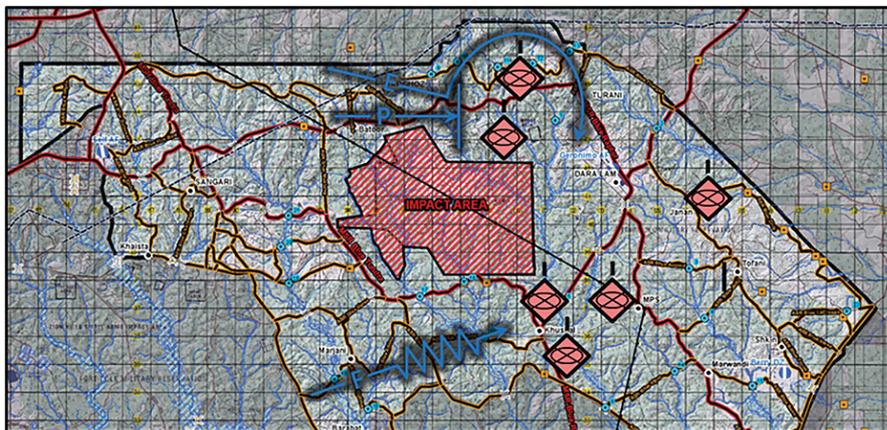
Figure 1. DP 1A. *(Graphic by author)*
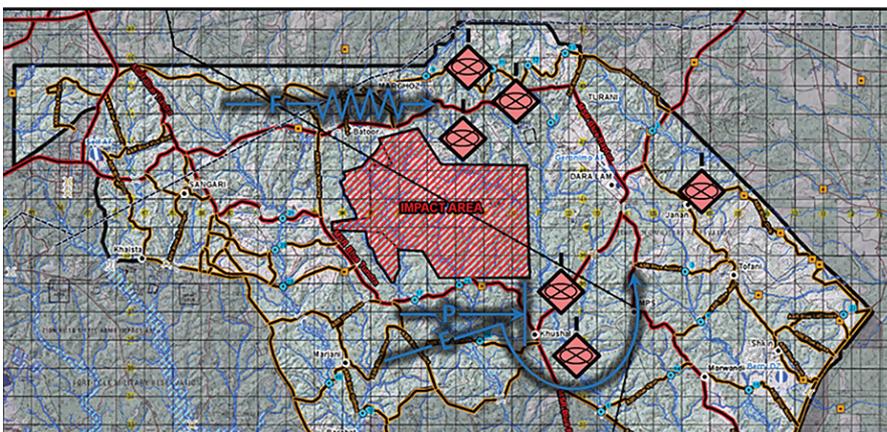
Figure 2. DP 1B. *(Graphic by author)*

definition is often overlooked by those outside the fires and targeting community. This is where the commander's operational visualization comes into play and directly influences the types of PIR he/she considers to be most effective during that specific phase.

To support a dynamic commander in a complex operational environment, effective PIR will provide three symbiotic functions: driving the commander's DPs, supporting shaping efforts by enabling the targeting cycle and applying classical game theory.

DP tactician

On the far-left limit of the spectrum, you have commanders who prefer to employ their organization using DP tactics, which in football would be the equivalent of running an option play.[4] The commander directs the staff to develop a single robust plan consisting of multiple branches and sequels at each identified DP of the operation. The goal is to provide the commander with the greatest amount of operational flexibility while also maximizing tempo.[5]

For example, a commander may direct the brigade staff to plan an offensive operation with the desired endstate of successfully enveloping the remaining two mechanized-infantry battalions (MIBN) of 111th Brigade Tactical Group (BTG). The operational environment will influence when and where these

offensive operations can occur, but so will the enemy. Factors such as the enemy's composition, capability, array and higher headquarters' desired endstate will all bear some influence on the development of the Blue Force course of action (CoA).

This first DP 1 will also serve as the first branch in the operational plan, and it will ultimately provide the commander with two distinguishable options. Each of the two options will include three tactical tasks, each of which will be executed by one infantry battalion simultaneously.

The primary distinguishing feature between these two branch plans will be the designated avenue of approach (AoA) to which the main effort will be committed. DP 1A includes one infantry battalion fixing the enemy on the southern AoA while simultaneously committing one infantry battalion to conduct a penetration. Another battalion serves as the main effort to conduct an envelopment of the enemy on the northern AoA. DP 1B includes one infantry battalion fixing the enemy on the northern AoA while committing one infantry battalion to conduct a penetration, and another battalion as the main effort to conduct the envelopment on the southern AoA.

While both options are feasible, only one will be optimal based on how the supporting PIR are answered at that time.

Both proposed branch plans will require unique operational conditions, answered by PIR and FFIR, which must be met to achieve that DP. The information requirements associated specifically with the enemy and terrain will ultimately become brigade PIR.

Since weather and terrain are perpetual considerations, this example will drive DP 1 with an enemy-focused PIR.

To do so, we need to have an accurate understanding of the relative combat power our BCT is able to impose upon the enemy – an FFIR. Also, we must be aware of the minimum forces required to achieve each of the tactical tasks, based on the correlation of forces and means.

Classical correlation-of-force theory posits that an enemy in a deliberate defense can effectively defend against up to three times its combat power.[6] Based on the task-organization of a standard infantry BCT (IBCT), we are able to commit one infantry battalion to fix the enemy, one to penetrate the enemy's defensive positions and a third to envelop the enemy in sector.

After accounting for all the preceding information, we now know that the enemy is likely to mount a successful defense against the penetration and envelopment with any formation greater than two mechanized-infantry companies (MICs) supported by complex obstacle belts. One example of an effective PIR that supports this DP is: **Will the remnants of 111th BTG commit and retain less than or equal to two MICs to defend any single avenue of approach?**

By integrating this minimum-force requirement into PIR development, we can more precisely define the information requirements needed to achieve that commander's DP, which will allow for IC planning and synchronization. With each commander at echelon having a shared understanding of DP 1A and 1B, the brigade commander is able to call an audible (keeping in line with the earlier football example) that his subordinate commanders are then able to execute rapidly while maintaining a high operational tempo.

This concept is best illustrated using one of the most important products

generated during the military decision-making process: the decision-support matrix (Table 1).

Conditions-setter

On the other end of the spectrum are commanders who prefer a more proactive shaping effort that applies center-of-gravity analysis to systematically dismantle the enemy's order of battle.[7] They tend to prefer plans that consist of a multitude of condition-based triggers and innovative efforts intended to flatten the kill chain by accelerating the sensor-to-shooter sequence.

Rather than employing collection assets to determine the composition and disposition of the enemy, they prefer employing them to target the enemy's critical capabilities via its critical vulnerabilities. This effectively allows the commander to artificially achieve the minimum-force requirements through the successful reduction in the enemy's relative combat power.

In this scenario, PIR are intended to directly enable the targeting process, shape the battlespace and set conditions for maneuver elements to rapidly seize a position of relative advantage. One such example would be taking the preceding plan and replacing DP 1 with a trigger to commit the main effort to the northern AoA. This conditions-based trigger is distinguishable from DP 1 because it is a predetermined action independent of the enemy's array of forces.

Through a deliberate-targeting process, the staff identifies the specific conditions required to meet this trigger. Rather than attempt to directly reduce the enemy's total combat power by targeting its maneuver formations, the staff recommends targeting the enemy's counter-mobility assets (mine layers, ditch-digging assets, etc.).

Decision point	IF (PIR)	AND (FFIR)	THEN (action)
DP 1A	Remnants of 111th BTG commit less or equal to 2x MICs to northern AoA (PIR 1)	Friendly forces retain greater than 80 percent total combat power across all formations	Fix enemy forces on southern AoA and conduct penetration and envelopment on northern AoA
DP 1B	Remnants of 111th BTG commit less than or equal to 2x MICs to southern AoA (PIR 1)	Friendly forces retain greater than 80 percent total combat power across all formations	Fix enemy forces on northern AoA and conduct penetration and envelopment on southern AoA

Table 1. Decision-support matrix for DPs 1A and 1B.

Targeting these engineer elements would reduce the enemy's relative combat power by neutralizing assets that are deemed critical to defensive operations – the desired effects.

These desired effects account for the latter half of our definition of PIR. If successful, achieving these desired effects would deny the enemy the ability to establish a deliberate defense supported by obstacles and force the enemy to establish a hasty defense with minimal obstacles. If all other variables remain the same, the shift from a deliberate to a hasty defense consequentially reduces the minimum-force requirement from a 3:1 to 2:1 force ratio.[8]

Once the need to neutralize these critical protection assets is identified, they will be analyzed in the target working group, added to the HPTs list and validated by the brigade commander during the target-approval board.

For a collection plan to effectively support the *decide*, *detect*, *deliver* and *assess* targeting cycle, HPTs (much like DPs) must be directly supported by PIR. An example of a PIR that supports these HPTs is: **Where will the enemy employ the predominance of its counter-mobility assets?**

In this example, the term *counter-mobility assets* in the PIR will focus collection efforts specifically on the enemy's MDK-2M (ditch-digging vehicle) and GMZ-2 (minelayer). Due to the high level of specificity, the IC matrix, which refines PIR into essential elements of information (EEI), indicators and specific information requirements, will be far more concise.[9]

Game theorist

The science of strategic reasoning, commonly known as classical game theory, can be traced back to the 1950s, when it was first used to study the decision-making process of rational players in a zero-sum game. Since then, history has provided us with multiple military case studies in which game theory may be applied in retrospect: the Battle of Midway,[10] Battle of Bismarck and Battle at Tannenberg[11] between Russia and Germany in 1914, to name a few.

The concept of applying game theory, in its original zero-sum form, to PIR development may seem novel, but it is far from it. Unlike current doctrine, historical doctrine incorporated this framework of strategic reasoning into PIR development.[12] A review of Army Field Manual (FM) 34-2, *Collection Management and Synchronization*

Planning, circa 1994 provides several ancillary examples of how classical game theory can be used to develop PIR.

This framework of strategic reasoning is well represented in each example of effective PIR while remaining absent in the following examples of ineffective PIR, excerpted from Appendix D of FM 34-2, that demonstrate this point.[13]

Example of poor PIR

"Will the enemy attack? If so, where, when and in what strength?"

- This PIR is obviously not a result of staff wargaming. There are several specific criticisms we can make.

- This PIR actually contains four significantly different questions. Which of these four questions is the priority? Unless given more guidance, collection assets must decide for themselves which part of the PIR to collect against.

- It assumes the intelligence staff knows absolutely nothing about the enemy situation. Actually, they probably know more about the situation than "the enemy might attack sometime, somewhere and in some strength." Using the intelligence preparation of the battlefield process, they can provide more focused PIR than this.

- Finally, when wargaming potential friendly and enemy CoAs, the staff should find some aspects of this PIR to be irrelevant to the friendly CoA. For example, your defense may be fully capable of defeating the enemy regardless of when they actually attack. Perhaps the focus need be only where they will attack, supporting a decision on employment of the friendly reserve.

Examples of good PIR

Just as there are no standard situation templates or friendly CoAs that will serve in all situations, there is no standard set of PIRs. Good PIRs, however, have some things in common:

- They ask only one question.

- They focus on a specific fact, event or activity.

- They provide intelligence required to support a single decision. Examples:
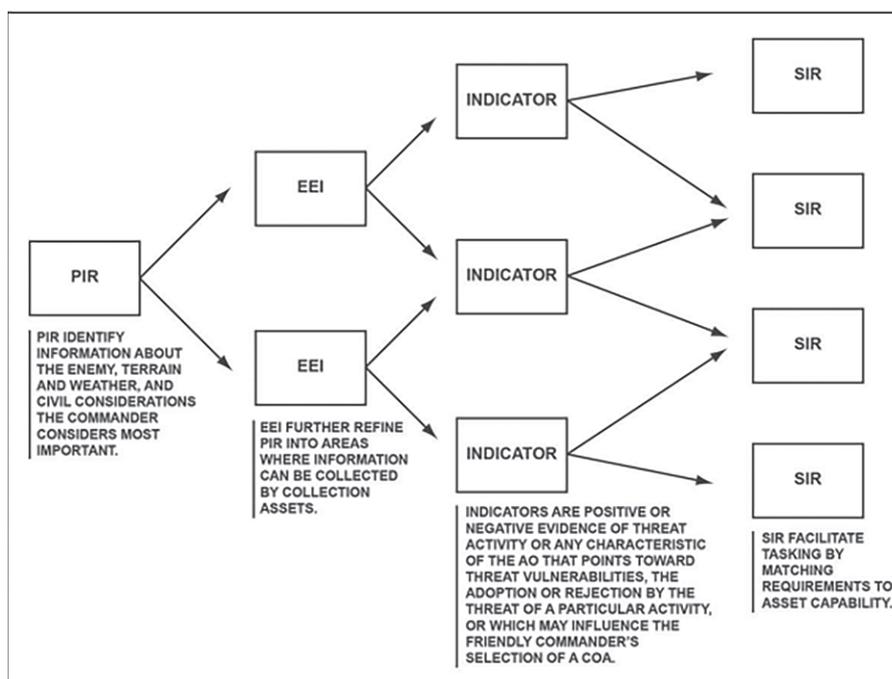
Figure 3. Relationship of specific information requirement (SIRs) to indicators to EEIs to PIR. *(Adapted from Figure 4-5, FM 3-98)*
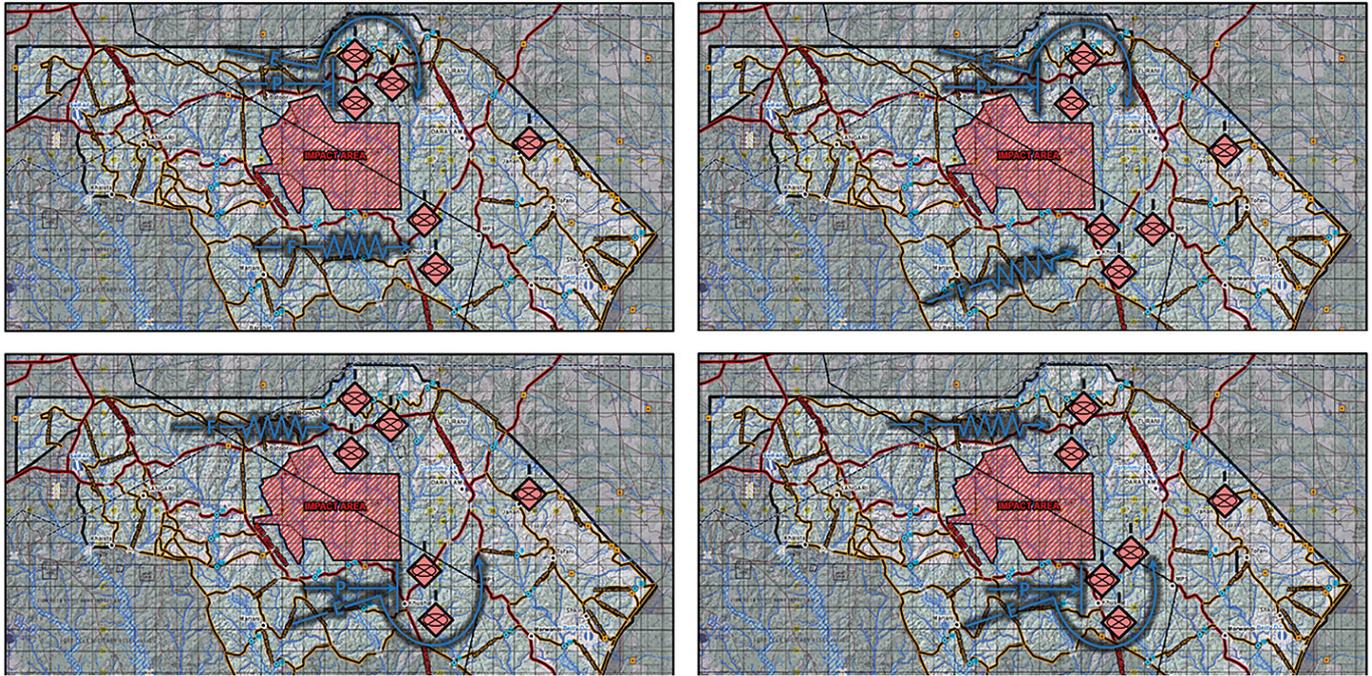
Figure 4. Four game-theory CoAs.

"Will the enemy use chemical agents on our reserve force before it leaves AoA Jean-Marie?" "Will the enemy defend Objective Kevin using a forward-slope defense?" "Will 43rd Division send its main attack along AoA 2?"

As you can see, all examples of good PIR are framed as "yes" or "no" questions, simplifying the information requirement into the positive or negative presence of an independent variable (similar to EEIs as defined in Figure 4-5 of FM 3-98). Initially, this approach may seem too binary for a complex operational environment, but further analysis indicates that if used correctly, it can be an effective methodology at the tactical level. This is particularly apparent when a commander is unable to obtain the critical information needed to reach a DP or achieve a desired effect.

In our preceding scenario, this would imply that the brigade's ability to answer PIR in a timely manner has been compromised by either environmental constraints or resourcing limitations. In other words, Blue Force does not have the capacity to identify the enemy's composition along both the northern and southern AoA (for DP 1) or to detect and target all remaining counter-mobility assets in the area of operations (conditions-based trigger).

To apply classical game theory to this scenario, the staff must first identity the four possible outcomes of the preceding operation. For simplicity, let us assume there is an absolute parity (1:1) in combat power at echelon between these two opposing formations. In its most basic form, each commander essentially has two options. For the Blue Force commander, the first option is to commit the main effort to the northern AoA, and the second option is to commit the main effort to the southern AoA. For the opposing-forces (OPFOR) commander, Option 1 is to commit the defensive main effort to the northern AoA, and Option 2 is to commit the defensive main effort to the southern AoA.

To calculate the probability and payoff in this zero-sum game, we must also apply a universal point system. One point will be awarded to a commander who achieves opposing minimum force with the main effort, and a second point will be awarded to a commander whose main effort is committed to an engagement area with advantageous terrain for that specific element. This scenario posits a Blue Force IBCT conducting offensive operations against two OPFOR MIBN. The severely restricted terrain in the southern AoA is ideal for the primarily dismounted Blue Force elements. Conversely, the two high-speed mobility corridors in the northern AoA are advantageous to the primarily mechanized formation of the OPFOR.

Figures 4 and 5 are graphic depictions of the four potential options, along with a payoff matrix accounting for the points earned by the commanders in each of the four outcomes.

In these examples, both players have a clear dominant strategy, with an apparent Nash Equilibrium in the lower-left quadrant of the payoff matrix. The Blue Force commander's dominant strategy is to commit the main effort to the southern AoA. Using this strategy, Blue Force will certainly have advantageous terrain for a dismounted formation and will have a modest 50-percent chance of achieving the minimum-force requirement with its main effort.

The OPFOR commander's dominant strategy is to commit the defensive main effort to the northern corridor. With this strategy, the OPFOR will have both advantageous terrain and will achieve the minimum-force requirement with its main effort.

Bearing this in mind, the staff is able to determine the most favorable option to each commander, as well as how Blue Force can increase the probability of achieving minimum force with its dominant strategy.

OPFOR commander
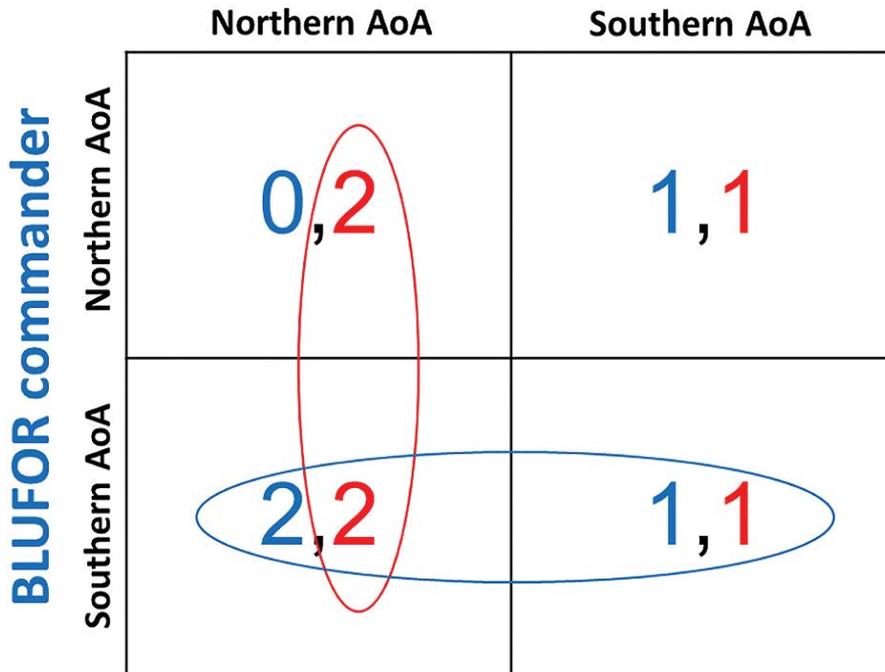
Figure 5. Scorecard for game-theory approach.

Our final PIR will synthesize all the preceding elements (DPs, targeting and classical game theory) to support a dynamic commander's operational visualization: **Will the enemy commit two or more counter-mobility assets to the southern AoA?**

This PIR is ideal because, while it supports the BCT shaping efforts and commander's DPs, it also provides Blue Force with the highest likelihood of achieving the minimum-force requirement with its main effort. If able to neutralize the enemy's counter-mobility assets in the southern AoA, the minimum-force requirement will be effectively reduced from a 3:1 to a 2:1 ratio, which will then change the score in the lower-right quadrant of Figure 5 from "1,1" to "2,0", further improving the Blue Force commander's already dominant strategy.

Conclusion

In the preceding examples, I provided both commanders and their staffs with a cognitive framework to generate tactical-level PIR that are effective in complex operational environments. This framework is based on both past and present doctrine, as well as lessons-learned while I served as IC manager during two combat-training-center rotations.

Large-scale combat operations require commanders and staff personnel who are dynamic, fluid and integrated in their operational approach. When enacting their operational visualization, dynamic commanders are likely to use all three cognitive frameworks, each at a different phase of the operation:

- Initially, the *game theorist* will seek to lessen the volume of operational variables during a time when information is limited.

- Next, the *conditions-setter* will aim to reduce the enemy's ability to generate combat power while also preserving his/her own.

- Lastly, the *DP tactician* will maximize operational flexibility by planning against a degraded enemy and fewer operational variables.

To support this dynamic progression, the staff must ensure that all three symbiotic functions of effective PIR are represented throughout the planning process. In doing so, this approach will produce PIRs that are ultimately capable of mutually supporting DPs, the targeting cycle and the conceptual application of classical game theory.

CPT David Tillman, a student in the Military Intelligence Captain's Career Course, was the brigade IC manager, 1st BCT "Bastogne," 101st Airborne Division (Air Assault), Fort Campbell, KY, when he wrote this article. Previous assignments include IC platoon leader and brigade IC manager, 3rd Armored BCT (ABCT), 4th Infantry Division, Fort Carson, CO; and assistant S-2 and intelligence, surveillance, reconnaissance manager, 4th Squadron, 10th Cavalry Regiment, 3rd ABCT, 4th Infantry Division, Fort Carson. CPT Tillman's military schools include the Defense Intelligence Agency (DIA) Collection-Manager Basic Course; Signals Intelligence/Electronic Warfare Officer Course; DIA Primary, Alternate, Contingency and Emergency Essentials
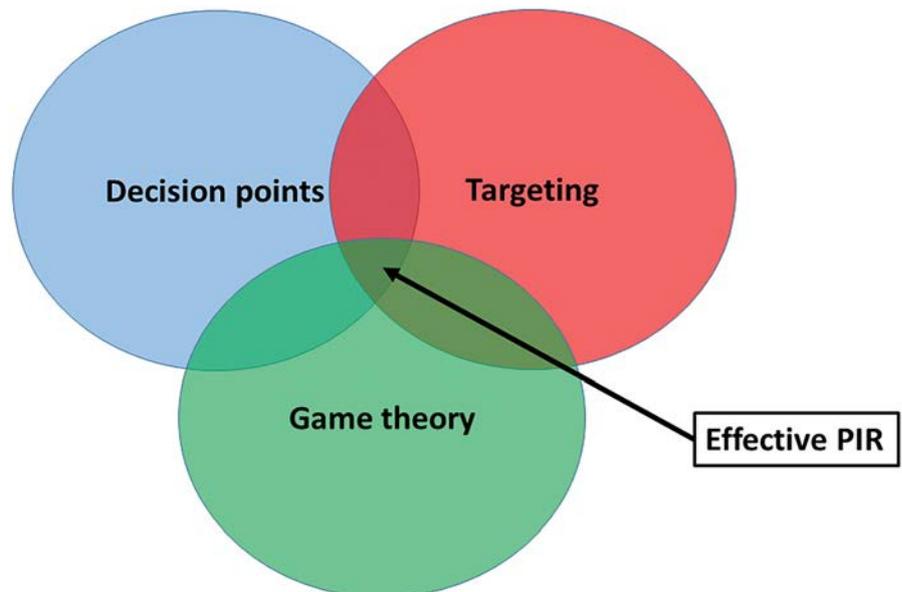
Figure 6. DPs, targeting, game-theory nexus.

Course; DIA Joint Intermediate-Targeting Course; Intelligence, Surveillance, Reconnaissance Manager Course; and the Military Intelligence Basic Officer Leadership Course. He has a bachelor's of arts degree in criminal justice from Southern Illinois University, and he is currently a graduate student at Northeastern University College of Professional Studies for a master's of arts degree in strategic intelligence and analysis. CPT Tillman has completed one rotation at the National Training Center, one rotation at Joint Readiness Training Center and one deployment in support of Operation Spartan Shield.

Notes

[1] FM 3-55, *Information Collection*, 2013.

[2] COL Thomas M. Feltey and CPT Matthew Mattingly, "Initial Commander's Critical Information Requirements and the 5 Common Command Decisions," *ARMOR*, Fall 2017 edition.

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[4] Eric Slater, "Decision-Point Tactics: Elevating Intelligence Preparation of the Battlefield in a Decisive-Action Training Environment," *Small Wars Journal*, Sept. 30, 2015.

[5] FM 3-90-1, *Offense and Defense*, 2013.

[6] John J. Mearsheimer, "Assessing the Conventional Balance: The 3:1 Rule and Its Critics," *International Security 13*, No. 4 (1989), accessed Dec. 16, 2020.

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[8] Dale Spurlin and Matthew Green, "Demystifying the Correlation of Forces Calculator," *Infantry*, January 2017.

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[10] Carl H. Builder, Steven C. Bankes and Richard Nordin, "Command Concepts: a Theory Derived from the Practice of Command and Control," Santa Monica, CA: *RAND*, 1999.

[11] William P. Fox, "Applied Game Theory to Improve Strategic and Tactical Military Decisions," *Journal of Defense Management 6*, No. 2 (2016).

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A Force-Management Approach for the Division Cavalry Squadron

by MAJ Greg Marsh

As the Army transitions from a counterinsurgency focus to a multi-domain/large-scale combat operations (MD-LSCO) focus, it's imperative for commanders at all echelons to gain and maintain an accurate picture of their organization's operational environment.

The problem is that current Army force structure doesn't provide division commanders with an organic all-weather force able to conduct information collection (IC) that will support division planning; the division is the only tactical-level unit without a specialized all-weather organization that's dedicated to conducting reconnaissance, security and economy-of-force (EoF) operations.

A significant change in focus and efforts within the doctrine, organization, training, materiel, leadership and education (DOTMLE) domains are required to rapidly correct this egregious deficiency.

Functional-area analysis

The Army Strategy 2018 outlining the Army's operating concept of multi-domain operations (MDO) states: "[U]nits from brigade through corps must have the ability to conduct sustained ground and air intelligence, surveillance and reconnaissance, electronic warfare and cyber operations to shape the battlefield across all domains."

However, U.S. Army divisions are not meeting this requirement with their current force structure. Nor does Army doctrine address reconnaissance and security (R&S) in the division deep area. Army training institutions do not effectively support the complexity or specialization of R&S missions.

Divisions **must** have an organic organization able to conduct reconnaissance, security and EoF operations. This organization **must** be able to fight for information and survive a multi-domain battlefield. The organization **must** contain the organic capabilities and systems to conduct IC across all operational domains. Why? Because the Army is the dominant land force for the United States to seize, secure, retain and exploit the initiative to achieve battlefield success.

Army Doctrine Publication (ADP) 3-0, **Unified Land Operations**, states: "Operational initiative is the setting of tempo and terms of action throughout an operation. Army forces seize, retain and exploit operational initiative by forcing the enemy to respond to friendly action. By presenting an enemy force multiple dilemmas across multiple domains, commanders force the enemy to react continuously until driven into an untenable position."

To do this, certain tasks are required of Soldiers. Table 1 lists the operations required by the Universal Joint Task List (UJTL). Table 2 shows the Army's mission-essential tasks (METs).

Questions to answer

Seeing how the Army is focusing on the division deep fight, how can a

Required operations from Universal Joint Task List	
ART 1.2.2.4	Provide a screen
ART 2.3	Perform intelligence, surveillance and reconnaissance
ART 2.3.3	Conduct reconnaissance
ART 2.3.3.1	Conduct route reconnaissance
ART 2.3.3.2	Conduct zone reconnaissance
ART 2.3.3.3	Conduct area reconnaissance
ART 2.3.3.4	Conduct reconnaissance-in-force
ART 7.5.7	Conduct counter-reconnaissance

Table 1. Required operations from the UJTL.

Required Army METs	
17-SQDN-9314	Conduct zone reconnaissance
17-SQDN-9315	Conduct area reconnaissance
17-SQDN-9222	Conduct guard
17-SQDN-9225	Conduct screen

Table 2. Army METs.

division commander gain and maintain fundamental operational initiative without an all-weather R&S force dedicated as the division commander's eyes and ears on the battlefield? How can a division commander maneuver the division to present an enemy commander with multiple dilemmas if the commander cannot visualize the battlefield?

ADP 6-0, *Mission Command: Command and Control of Army Forces*, states that for effective command and control, commanders must "employ the operations process to drive the conceptual and detailed planning necessary to understand, visualize and describe their operational environment; make and articulate decisions; and direct, lead and assess military operations."

However, if the division commander and staff do not have a clear operational picture derived from a division-level IC organization, how is the intelligence driving maneuver? Will the division be able to mass its combat power effectively and efficiently at the decisive point in support of the decisive operation? An answer to these questions must be addressed as divisions prepare to conduct MD-LSCO.

That answer is the division cavalry (DIV CAV) squadron.

Functional-needs analysis
To reiterate, division commanders don't have an organic all-weather organization whose primary mission is to conduct reconnaissance, security and EoF operations. As division staffs use the military decision-making process to plan, prepare and execute division-level operations, division staffs and commanders commit forces to operations with limited ability to gather essential elements of information about the terrain and threat to support their planning efforts.

Division commanders assume tactical risk by preparing and executing conceptual plans instead of detailed operations where the intelligence warfighting function (WfF) is driving the movement-and-maneuver WfF. This results in a higher potential for operations becoming desynchronized due to unknown or unforeseen battlefield effects or conditions against a free-thinking enemy who may not fight the way a division staff wants them to fight. This places a higher stress on the brigade combat teams' (BCTs) organic cavalry organizations to support their respective BCTs' operations, as well as to provide information needed at the division level.

Divisions lack an organic all-weather capability to answer the commander's priority intelligence requirements. These are information requirements commonly associated with a decision the unit commander must make. If the organization does not have a way to accurately answer these information requirements, then division commanders assume the risk of making decisions based on circumstantial, unconfirmed and/or incomplete intelligence.

This also requires more time for division information requirements to be answered because the BCTs must gain and maintain enemy contact instead of a division-level organization doing so. This further requires the division commander to assume risk by not identifying and bringing combat power against the division's high-value targets (HVTs) and high-payoff targets (HPTs) to shape the battlefield in support of the division's operation or plan. It forces the commander to accept limited engagements with little payoff in the division's deep fight.

Divisions do not have enough organic ability to support the targeting process: *decide*, *detect*, *deliver* and *assess*. Outcomes of Steps 3 and 4 of intelligence preparation of the battlefield involve identifying enemy HVTs. This in turn enables the organization to develop courses of action and HPTs. This is *decide* in the targeting process. The organization assesses and allocates the best asset(s) to locate and identify HVTs and HPTs. This is *detect* in the targeting process. The organization determines the best asset to action to inflict the desired effects. This is *deliver* in the targeting process. The organization then assesses the performance or effectiveness of its targeting process. This is *assess* in the targeting process.

The division lacks an organic organization beyond the MQ-1C Grey Eagle unmanned aerial system (UAS) or the RQ-7B Shadow UAS in the maneuver enhancement brigade to support this process. This prevents the division from suppressing, neutralizing or destroying HVTs and HPTs. These targets are now left for BCT commanders to manage, severely reducing the division's effectiveness in the reconnaissance fight.

Functional-solution analysis
A division echelon R&S organization is essential in maintaining security and situational awareness while conducting MD-LSCO. A division commander's ability to see the operating environment facing the division will enable that commander to maintain the initiative and to increase lethality, speed and mobility.

The solution is to reintroduce the DIV CAV. Reintroduction of the DIV CAV would affect the DOTMLE domains.

Doctrine domain
Current Army doctrine does not address R&S operations for a division. The Army's doctrinal reference for R&S is Field Manual (FM) 3-98, *Reconnaissance and Security Operations*, which states: "This publication provides doctrinal guidance for all formations assigned to the armored brigade combat team, the infantry brigade combat team and the Stryker brigade combat team."

Unfortunately, the R&S cornerstone does not address R&S operations to support LSCO at division level. The superseded FM 17-95, *Cavalry Operations*, addresses R&S operations at echelon from the platoon through corps. This publication could be reviewed, updated and implemented as a solution to this problem.

Organization domain
The DIV CAV is a proven organization in peace and combat – cavalry squadrons had exceptional success in Operations Desert Storm and Iraqi Freedom. The DIV CAV is also the premier division-level R&S organization with the proper manning, equipment, training and force structure to shape the division fight.

FM 17-95 best describes the armored
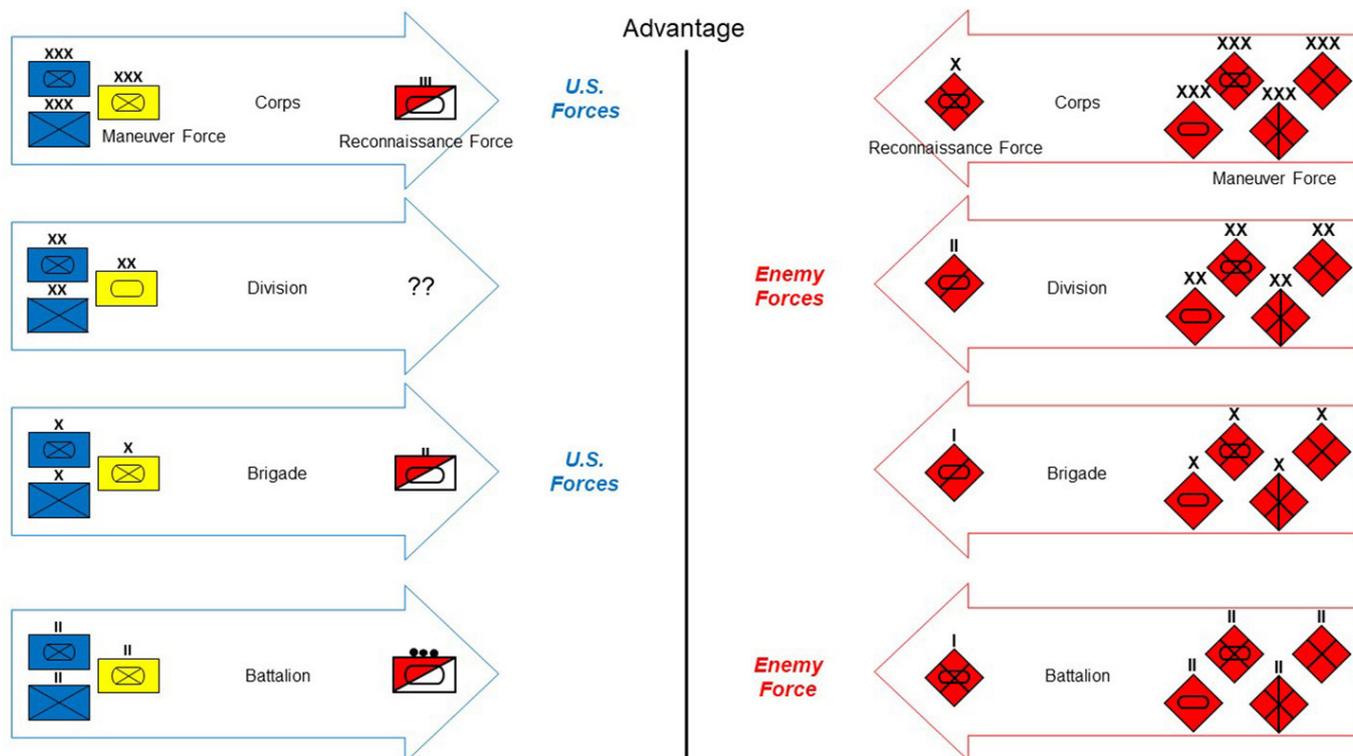
Figure 1. American and enemy R&S force structure by echelon.

DIV CAV's mission: "The armored [DIV CAV] squadron is a highly mobile, armor-protected force organized as part of the armored and mechanized-infantry divisions. The squadron operates primarily in the environmental states of war and conflict. It may deploy into a theater as part of a division, brigade or joint task force. The light/airborne [DIV CAV] squadron is a highly mobile, lightly armed force organized as part of light-infantry divisions. As part of the light-infantry division, it may operate in any environmental state from peace to war. The squadron is deployable by air or sealift to a theater of operations as part of the division, or in support of a brigade or joint task force. This squadron possesses a significant tactical mobility advantage over the infantry battalions in the division."[1]

When comparing U.S. Army R&S force structure by parent echelon to doctrinally templated enemy forces, the enemy has a capability overmatch. The enemy retains an organic organization at battalion through corps levels, where the United States does not.

Figure 1 compares U.S. and enemy R&S force structure by parent echelon.

Enemy forces retain an R&S advantage over U.S. forces at battalion level because the enemy uses a company-sized force to conduct its R&S operations. This is not a specialized R&S organization, but it has triple the combat power of a U.S. battalion's scout platoon. U.S. forces retain an R&S advantage over enemy forces at brigade level by employing a cavalry squadron – compared to the enemy's brigade reconnaissance company.

At division level, the enemy retains the advantage by employing a reconnaissance battalion – compared to a U.S. division, which has no organic organization. U.S. forces gain the advantage at corps level by employing a cavalry regiment especially designed to conduct R&S operations – compared to the enemy's use of an organic infantry or armor brigade tactical group to conduct its R&S operations.

The enemy's overmatch also enables it to win the counter-reconnaissance fight. Counter-reconnaissance is active and passive and includes action to destroy or repel enemy reconnaissance elements and to deny the enemy information about friendly units. Counter-reconnaissance keeps enemy reconnaissance forces from observing the main body by defeating or blocking them.[2]

The force that wins the counter-reconnaissance fight has a significantly greater advantage over its opponent. The enemy's ability to control R&S gives the enemy commander a marked advantage in controlling the tempo of the battlefield; maximizing combat power and battlefield effects; and retaining the initiative, specifically at division level.

Requiring division commanders to accept tactical risk by not having combat power to shape the division deep fight reduces the reaction time and maneuver space for the division. This is a violation of the Army's fundamentals of security and prevents the division commander from setting the required conditions for BCTs to be successful.

Structure needs change

The DIV CAV force structure must allow for semi-autonomous and self-sustaining R&S and EoF operations. A solution to prevent an increase in manning requirements would be to reduce BCT cavalry squadrons to a brigade reconnaissance troop. The squadrons' guidon, remaining personnel and equipment could then be used to build each DIV CAV squadron. The DIV CAV will eliminate the enemy's current R&S overmatch.
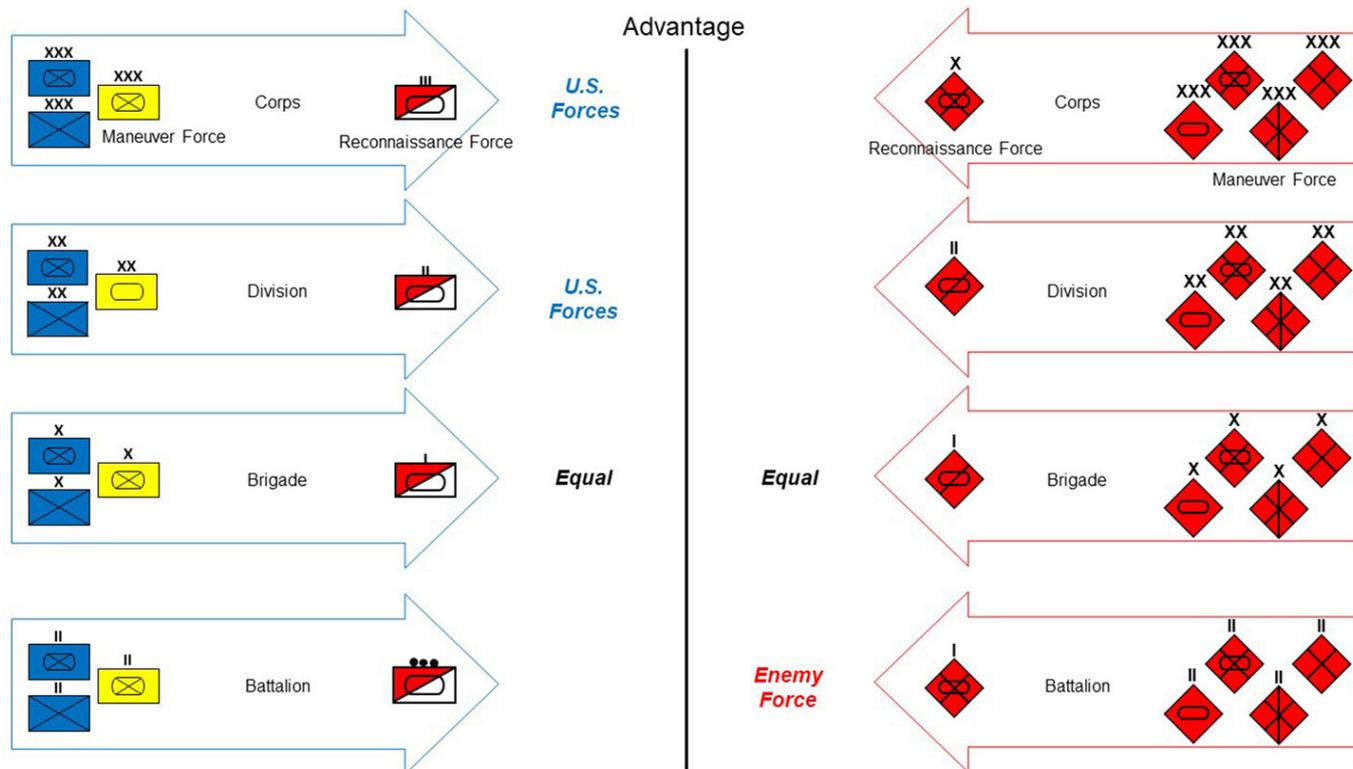
Figure 2. The proposal for each echelon to have DIV CAV.

Figure 2 shows this reorganization compared to templated enemy forces.

The DIV CAV structure would depend on its parent division. Figure 3 shows the task-organization for DIV CAV squadrons of armor and mechanized-infantry divisions. This pertains to 1st Cavalry Division, 1st Infantry Division, 1st Armored Division, 2nd Infantry Division, 3rd Infantry Division and 4th Infantry Division.

Figure 4 shows the task-organization for light-infantry divisions. This pertains to 10th Infantry Division (Mountain), 25th Infantry Division, 82nd Infantry Division (Airborne) and 101st Infantry Division (Air Assault). DIV CAV squadrons would contain organic small-caliber fires (mortars); anti-armor capability; extended-range communication; chemical, biological, radiological and nuclear (CBRN) detection; UAS; and sustainment. Fires would be provided by the division-artillery brigade with the soon-to-be-fielded "extended-range cannon artillery." These organic capabilities ensure the squadrons would sustain MDO.

To maximize the three-dimensional battlefield, the division's combat-aviation brigade would provide one air-cavalry troop (ACT) and one aviation-assault platoon under the DIV CAV commander's operational control. The ACT would extend the DIV CAV's operational reach beyond its ground systems. ACTs would extend the DIV CAV's range to detect, identify, locate and report HVTs, HPTs and enemy movement; and to destroy targets of opportunity.

Aviation-assault platoons would add an enhanced level of rapid mobility for movement and maneuver, personnel recovery, casualty evacuation and sustainment operations. Aviation-assault platoons can stealthily emplace dismounted scouts over extended ranges; conduct aerial resupply; extend line-of-sight communications; and rapidly move casualties to the squadron's main aid station or to the division-support area.

Training

Cavalry organizations must be removed from under the Armor Branch and made their own independent branch. Cavalry operations are a specialized field. The nature of the missions cavalry troopers conduct require unique individual training and specialized schools with their own training pipeline.

However, BCT cavalry squadrons and troops are commanded by infantry and armor officers. Cavalry scouts in light-infantry divisions are filled predominately with infantry Soldiers. This results in light-infantry BCTs using their cavalry squadrons as another infantry battalion rather than as a specialized R&S organization.

As mentioned, cavalry troopers require specialized training in R&S. The 19D (cavalry scout) military-occupation specialty (MOS) pipeline will need to produce more cavalry scouts because there will be a shortage due to removing previous 11B (infantry MOS) Soldiers from the light-infantry BCTs.

Current non-19D cavalry scouts in all enlisted ranks require an MOS reclassification course. R&S operations require a range of additional training to support the complexity and unique operational environment of a DIV CAV squadron.

Table 3 is the recommended additional skill identifiers (ASIs) with respective training courses for DIV CAV squadrons.

Over-the-horizon communications are an emerging training deficiency within the cavalry community. This must be

Figure 3. Proposed DIV CAV task organization for armor and mechanized infantry.
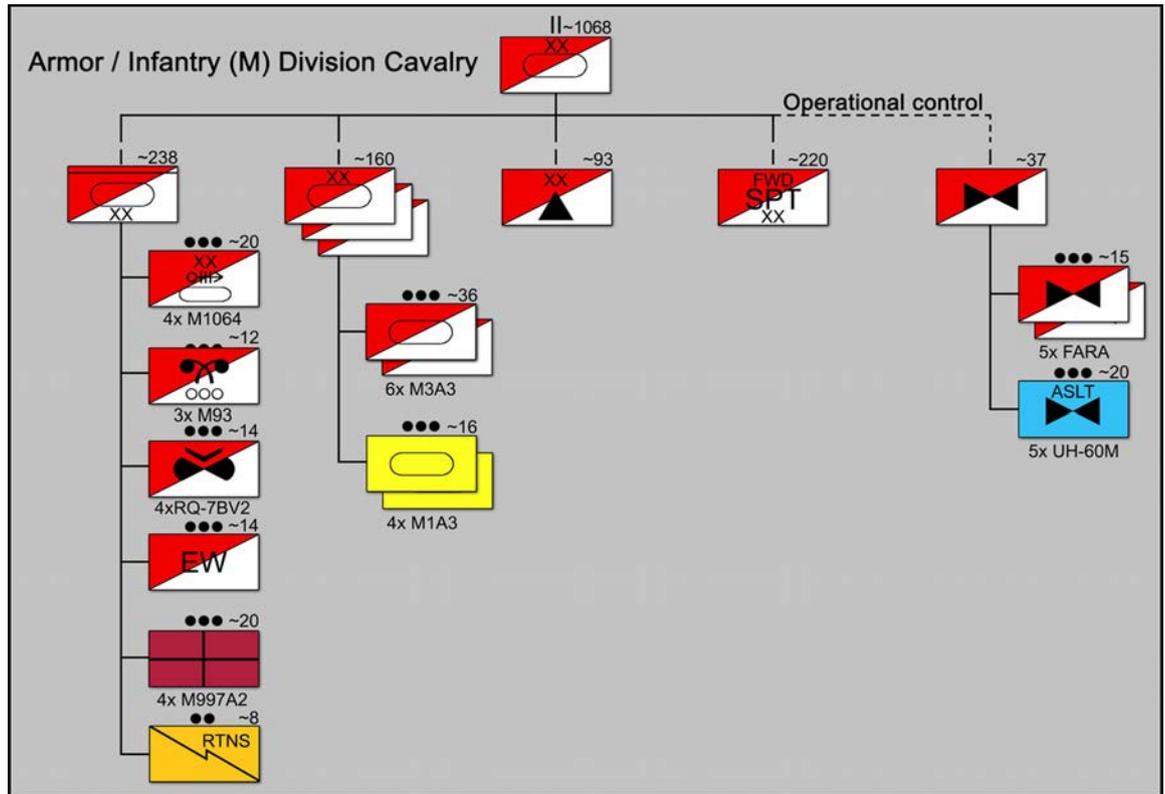
Figure 4. Proposed DIV CAV task organization for light infantry.
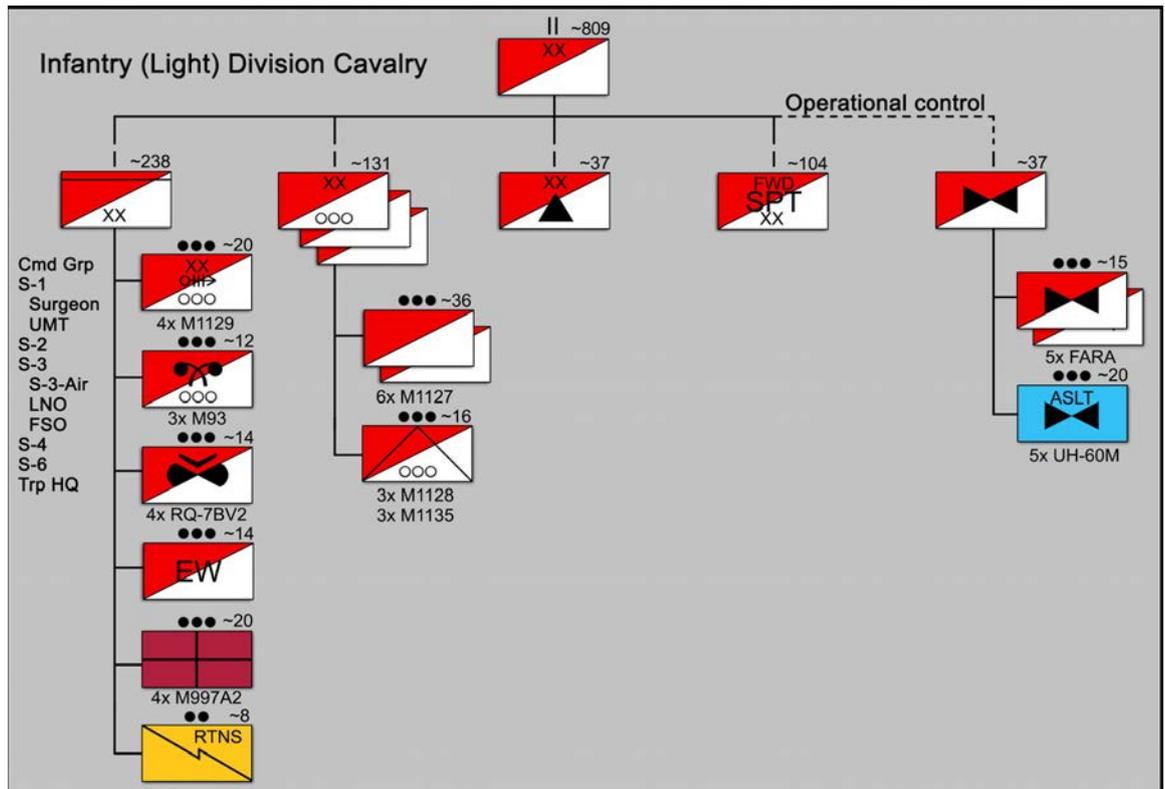
an area of concentration for cavalry troopers – up to and including troop level – to ensure consistent communication with the squadron main command post in MDO.

Materiel

Generating the DIV CAV ground-combat power is possible by reallocating equipment from existing BCT cavalry squadrons as they change to brigade reconnaissance troops. The M3A3 Bradley Cavalry Fighting Vehicle has proven to be a viable platform for the armored reconnaissance troop (ART). This would be an interim solution until a more viable and tactically sound platform is available.

Division	ASI	Description	Eligible Population
82nd Infantry	5P	Parachutist	All
All	1G	Joint Terminal Air Controller	Staff sergeants and above
10th Infantry, 101st Infantry	2B	Air assault	All
All	2C	Javelin gunnery	All
All	2S	Battle staff	All staff noncommissioned officers in charge (NCOICs)
All	5U	Tactical air operations	All staff sergeants and above
82nd Infantry	5W	Jumpmaster	All platoon leaders / platoon sergeants; company commanders / first sergeants; squadron commanders / command sergeants major
All	6B	Reconnaissance and Surveillance Leader's Course	All staff sergeants and above
All	8L	Master resilience instructor	All platoon sergeants and above
All	B4	Sniper	Four per troop
All	C6	Cavalry leader	All platoon sergeants
All light infantry	F7	Pathfinder	All sergeants and above
All	L7	Joint fires observer	All platoon forward observers
All	Q7	Intel, surveillance, recon synch manager	All squadron S-2 officers in charge (OICs) and NCOICs
All	S9	Joint spectrum manager	Squadron S-6 OICs and NCOICs
All	U7	UAS instructor-operator	All staff sergeants and above 15W

Table 3. Recommended ASIs.

A possible solution is the M1127 Stryker Reconnaissance Vehicle. The M1A2 System Enhancement Package V3 Abrams tank and the soon-to-be-fielded M1A3 Abrams tank are the best platforms for the armor platoons in the ART.

The future armed reconnaissance aircraft (FARA) would be the airframe of choice for the ACT. This new aircraft design will take significant time to mature to support the air-ground integration that doctrine requires. There are more viable, adaptable and cost-effective solutions (off-the-shelf aircraft) for FARA than a first-built airframe.

The M93 Fox CBRN Reconnaissance Vehicle is sufficient for the DIV CAV's CBRN reconnaissance platoon. The RQ-7BV2 Shadow will provide the requisite organic UAS for the DIV CAV.

Sustaining the DIV CAV will require a forward-support troop (FST). Current FSTs within each brigade-support battalion configured to support the BCT cavalry squadrons can be reallocated to the division's sustainment brigade to sustain the DIV CAV. Detailed analysis of Class III bulk and Class V requirements are required to ensure each FST has the necessary transportation assets.

Leadership and education

Professional military education (PME) remains the cornerstone of institutional knowledge. Cavalry troopers require specialized PME and a larger pipeline to sustain manning requirements.

Table 4 shows the PME required for cavalry leaders.

The focus on cavalry operations and doctrine would require a separate cavalry career path and PME.

Components 1, 2 and 3. The DIV CAV should be assigned to the 10 Component 1 and eight Component 2 divisions. Component 3 does not have division-level combat-arms organizations. MD-LSCO will require equal R&S capabilities at all echelons regardless of Army component.

Operations Enduring Freedom and Iraqi Freedom demonstrated the need to employ all combat formations at echelon, regardless of Army component.

How solution fits operations

Having an organization with a specialized focus, craft and branch would ensure division commanders have a critical capability the U.S. Army hasn't had for more than 20 years. The reintroduction of DIV CAV will give division commanders a robust, dynamic and flexible IC asset.

Course	Eligible population	Remarks
Cavalry Basic Officer Leader's Course (CBOLC)	All ground cavalry lieutenants; all air-cavalry lieutenants after completing FARA aircraft-qualification course	SLC included with CBOLC
Scout Leader's Course (SLC)	All platoon leaders (air and ground), platoon sergeants (ground), troop commanders (air and ground), troop first sergeants (ground)	Platoon leaders and platoon sergeants complete prior to assuming position
Cavalry Leader's Course	Troop commanders (air and ground), squadron S-2 OICs / NCOICs (air and ground), squadron commanders (air and ground)	Troop and squadron commanders complete prior to assuming command; squadron S-2 completes prior to assuming position
Air Cavalry Leader's Course (ACLC)	Troop commanders (air), squadron S-2 OIC / NCOIC (air and ground), squadron S-3 (air and ground), squadron S-3-Air (ground), squadron commanders (air)	Troop and squadron commanders complete prior to assuming command; squadron S-2 OIC completes prior to assuming position
19D Advanced Leader's Course	All 19D sergeants selected for promotion to staff sergeant	Attendance follows Select, Train, Educate, Promote (STEP) methodology
19D Senior Leader's Course	All 19D staff sergeants selected for promotion to sergeant first class	Attendance follows STEP methodology

Table 4. Specialized cavalry PME.

The DIV CAV would also enable divisions to develop and shape operations in the division deep area, supporting the division commanders' objectives. It would also enable subordinate BCT commanders' success in assigned missions.

Furthermore, the DIV CAV's ability to conduct EoF missions would enable preservation of the division's decisive operation's combat power. The combat power within a DIV CAV would enable the squadron commander to solve the division commander's problems before they become bigger problems.

MAJ Greg Marsh is a course developer assigned to Company A, 1st Battalion, 145th Aviation Regiment, Fort Rucker, AL. Previous assignments include small-group leader, Aviation Captain's Career Course, A/1-145 Aviation, Fort Rucker; observer/coach/trainer (O/C/T), Joint Readiness Training Center, Fort Polk, LA; commander, Troop B, 6th Squadron, 6th Cavalry Regiment, Fort Drum, NY; J-3 aviation officer, U.S. Forces-Afghanistan Detachment South/Southwest, Kandahar Air Base, Afghanistan; and platoon leader, Troop C, 4th Squadron, 6th Cavalry Regiment, Fort Lewis, WA. MAJ Marsh's *military schools include the Command and General Staff Course, ACLC, O/C/T academy, Maneuver Captain's Career Course, Cavalry Leader's Course, Joint Firepower Controller Course, Warrant Officer Basic Course, OH-58D Aircraft Qualification Course, Scout-Platoon Leader's Course, Tank Commander Certification Course and Armor Officer Basic Course. He has an associate's of arts degree in liberal arts and military history from New Mexico Military Institute, a bachelor's of science degree in liberal arts from Excelsior College* *and a master's of arts degree in management and leadership from Webster University. Among MAJ March's awards are the Defense Meritorious Service Medal, the Meritorious Service Medal with oak-leaf cluster, the Air Medal (third award) and the Combat Action Badge.*

Notes

[1] FM 17-95, *Cavalry Operations*, 1996.
[2] FM 3-98, *Reconnaissance and Security*, 2015.
[3] Maneuver Center of Excellence, Army Reconnaissance Council, Oct. 2, 2020.

ACRONYM QUICK-SCAN

ACLC – Air Cavalry Leader's Course
ACT – air-cavalry troop
ADP – Army doctrine publication
ART – armored reconnaissance troop
ASI – additional skill identifier
ASLT – assault
BCT – brigade combat team
CBOLC – Cavalry Basic Officer Leader's Course
CBRN – chemical, biological, radiological and nuclear
DivCav – division cavalry
DOTMLE – doctrine, organization, training, materiel, leadership and education
EoF – economy-of-force
EW – electronic warfare
FARA – future armed reconnaissance aircraft
FM – field manual

FSO – fire-support officer
FST – forward-support troop
FWD – forward
HPT – high-payoff target
HVT – high-value target
IC – information collection
LNO – liaison officer
MD-LSCO – multi-domain/large-scale combat operations
MDO – multi-domain operations
MET – mission-essential task
MOS – military-occupation specialty
NCOIC – noncommissioned officer in charge
O/C/T – observer/coach/trainer
OIC – officer in charge
PME – professional military education
R&S – reconnaissance and security
RTNS – retransmission

SLC – Scout Leader's Course
SPT – support

STEP – Select, Train, Educate, Promote (methodology)
UAS – unmanned aerial system

UJTL – Universal Joint Task List
UMT – unit ministry team
WfF – warfighting function

Honoring our Armor and Cavalry Medal of Honor Heroes

Derived from Center of Military History information provided at https://history.army.mil/html/moh/civwaral.html. Listed alphabetically. Note: Asterisk in the citation indicates the award was given posthumously.

HEERMANCE, WILLIAM L. CPT
Unit: Company C, 6th New York Cavalry. Place and date of action: Chancellorsville, VA, April 30, 1863. Entered service: Kinderhook, NY. Born: Feb. 28, 1837, Kinderhook, NY. Date of issue: March 30, 1898. Citation: Took command of the regiment as its senior officer when surrounded by Stuart's cavalry. The regiment cut its way through the enemy's line and escaped, but Heermance was desperately wounded, left for dead on the field and was taken prisoner.

HICKEY, DENNIS W. SGT
Unit: Company E, 2nd New York Cavalry. Place and date of action: Stony Creek Bridge, VA, June 29, 1864. Born: Troy, NY. Date of issue: April 18, 1891. Citation: With a detachment of three men, tore up the bridge at Stony Creek, being the last man on the bridge and covering the retreat until he was shot down.

HIGBY, CHARLES PVT
Unit: Company F, 1st Pennsylvania Cavalry. Place and date of action: Appomattox Campaign, VA, March 29 to April 9, 1865. Entered service: New Brighton, PA. Born: Pittsburgh, PA. Date of issue: May 3, 1865. Citation: Capture of flag.

HILLS, WILLIAM G. PVT
Unit: Company E, 9th New York Cavalry. Place and date of action: North Fork, VA, Sept. 26, 1864. Born: June 26, 1841, Conewango, NY. Date of issue: Sept. 26, 1893. Citation: Voluntarily carried a severely wounded comrade out of heavy fire by the enemy.

Deploying Armor:
A Transportation Battalion's Perspective and Lessons-Learned

by MAJ Matthew T. Mosteiko

The deployment of 1st Armored Brigade Combat Team (ABCT), 3rd Infantry Division, Fort Stewart, GA, and the redeployment of 2nd ABCT, 1st Infantry Division, Fort Riley, KS, brought unique challenges to both ABCTs and to 833rd Transportation Battalion, which conducted port operations at the Port of Tacoma, WA, for both rotational-force brigades within a three-month timeframe. This article will separately discuss pre-deployment activities, port operations and lessons-learned from each armor brigade.

1/3 ABCT: pre-deployment

Deploy and redeploy are tasks within nearly every unit's mission-essential task list, but successful deployments often rely on separate sustainment units to set conditions by conducting pre-deployment checks for the deploying unit. The 1/3 ABCT took advantage of a key service that Military Surface Deployment and Distribution Command (SDDC) offers: pre-movement technical advice from deployment and distribution support teams (DDSTs).

DDSTs are teams of subject-matter experts who assist deploying units by checking the hazardous-material declarations, inspecting containers and certifying placards for containers and rolling stock. These pre-movement checks help units avoid suffering "frustrated" cargo at the port and prevent cargo left on port after the vessel departs the seaport of embarkation.

The 1/3 ABCT received pre-movement technical advice from two of the 1182nd's DDST teams at Fort Stewart Aug. 2-28, 2020, more than one month before the vessel's arrival. This support helped the unit identify tie-down procedures for secondary loads, review hazardous-materials documentation and confirm equipment data. The DDSTs also assisted the unit with its

containers, ensuring blocking, bracing, packaging, crating and tie-down were done correctly. As a result, 1/3 ABCT was well prepared to arrive at the port.

In-progress reviews (IPRs) are essential to the smooth synchronization of multiple units working together. The 1/3 ABCT and 833rd Transportation held monthly IPRs via Internet on-line meeting software to synchronize timelines, working space and due-outs leading up to the deployment. Communication between the two units permitted flexibility as changes occurred in vessel dates and type, rail timelines and port-support-activity (PSA) composition. IPRs included representation from the 1/3 ABCT mobility warrant officer, PSA representatives, 833rd Transportation S-3, operations supervisor and team lead. IPRs helped identify reception windows for line-haul trucks arriving at the Port of Tacoma, rail timelines, staging areas at the port and PSA composition.

Transportation battalions require a final unit-density list (UDL) at least 60 days before the available-to-load date. The UDL is the main document that drives port-staging-area selection and vessel stow plans, and it can influence vessel selection. Without an accurate and timely UDL, transportation battalions have an increased level of difficulty in managing the port operation, thereby amplifying friction points for the deploying unit.

In the 1/3 ABCT's deployment, a planning UDL was sent well in advance, but it contained far more pieces of cargo than the brigade deployed. This created uncertainties in vessel capacity because ABCTs often come extremely close to cubing and weighing out most vessels. A 10-percent variance in cubing and weighing factors could potentially push the ABCT's requirements from a one-vessel solution to a two-vessel solution. Transportation

battalions and Military Sealift Command use a 14,000-commercial-tons planning factor to account for dunnage, fuel, unit loads, etc., to develop a stow plan for unit equipment and extreme variances in planning UDLs. Accurate and timely UDLs decrease the probabilities of delays in loading and sail dates.

Transportation battalions create the pre-stow plan, but the final stow plan is approved by the vessel's captain. The delay in a final and accurate UDL forced 833rd members to create several inaccurate pre-stow plans prior to vessel arrival. Units can help prepare for deployment by submitting accurate and timely UDLs with validated dimensions and weights. This simple act can help alleviate many loading delays when the vessel arrives and ensure a smooth deployment from the seaport of embarkation (SPoE).

Port operations

Reception operations at the SPoE include the arrival of deploying cargo, PSA, total-force-integration (TFI) Soldiers and port opening by 833rd Transportation Battalion. An advance party from the deploying unit is also included in the reception window. The 1/3 ABCT elected to send a small number of its leadership as the advance echelon. This was a welcomed and appreciated decision to ensure leaders were present to get the lay of the land and conduct a terrain walk before the main body arrived.

The 833rd operations team conducted a two-day train-up at the Port of Tacoma to ensure PSA and TFI personnel knew emergency procedures, port layout, staging areas and reception flow. They also presented the concept-of-operations (CONOP) briefing that is normally presented to deploying unit leadership. Briefing the CONOP to all PSA and TFI personnel ensured a shared understanding during recep-

tion and loading operations.

Setting up for success via virtual terrain walks and conducting a successful reception go a long way in preparing to load a 656-foot vessel with nearly 800 pieces of equipment. The 1/3 ABCT and 833rd Transportation Battalion preparation was commendable; however, our efforts did not prevent "Murphy" from making an appearance at the port. The major issue that arose during the 1/3 ABCT deployment could not have been predicted, but it may have been prevented.

There are bound to be maintenance issues in a brigade with more than 250 tracked vehicles. One of 1/3 ABCT's Abrams tanks had transmission shifting issues at the Port of Tacoma, creating a safety issue with loading the tank onto the vessel. Due to the close quarters the ground guides need to work in, a tank with transmission problems is not safe to load. The trouble with repairing this issue before loading was that the Class IX maintenance parts were already loaded in a 20-foot container-express (CONEX) box inside the vessel.

The labor contract with the stevedoring company at the Port of Tacoma mandates that union personnel handle, load and unload equipment and unit cargo, thereby preventing unit personnel from accessing materials as easily as the unit would have liked. Considering that the CONEX was already loaded on the vessel, 833rd would incur more charges to unload several containers to gain access to the maintenance parts, then unpack, repack and reload the container as well as the other containers moved in the process. The minimum cost was about $30,000 but could have increased to as much as $75,000 per day if the operation caused the vessel to delay its set sail date.

The 833rd commander made a fiscal decision by leveraging the National Security Strategy (NSS). The NSS states that in the Indo-Pacific, the United States will "maintain a forward military presence capable of deterring and, if necessary, defeating any adversary. We will strengthen our long-standing military relationships and encourage the development of a strong

defense network with our allies and partners. For example, we will cooperate on missile defense with Japan and South Korea to move toward an area defense capability. We remain ready to respond with overwhelming force to North Korean aggression and will improve options to compel denuclearization of the peninsula."

This paragraph in the NSS made for an easy argument to absorb the additional cost in retrieving the Class IX parts, repairing the non-mission-capable Abrams tanks and ensuring that more than 250 tracks roll off the vessel under their own power in the Republic of

Korea. Any prying eyes would witness our nation's resolve to an area-defense capability on the Korean peninsula.

Lessons-learned

As mentioned previously, preparation can only go so far during port operations. With only one track non-mission-capable, 1/3 ABCT boasted a 99-percent operational readiness rate. The lesson-learned from this issue is not in preventing the vehicle from being non-mission-capable but rather in how to use force packaging to prevent a delay in the maintenance operation.

Deploying units have two viable

Figure 1. 833rd Transportation Battalion Soldiers load tracked vehicles onto rail cars at the Port of Tacoma with Washington's Mount Rainier visible in the background. The 833rd Transportation Battalion is one of 12 worldwide battalions in the SDDC. It is based at Joint Base Lewis-McChord (JBLM), WA. *(U.S. Army photo by MAJ Matthew Mosteiko)*

solutions to the Class IX (repair parts) issue. First is to have the maintenance CONEX as part of the support package that stays with the rear detachment and redeploys to Fort Stewart. PSA packages include both personnel and equipment. A Class IX CONEX could have been part of the 1/3 ABCT PSA package. This would have prevented the unpacking and repacking of the maintenance container. A significant downside to this option is that the full-up power pack and other Class IX repair parts would not be shipped to the Republic of Korea.

The other option would have been to load the maintenance CONEX last. The stow plan used during the 1/3 ABCT deployment called for CONEX boxes to be loaded concurrently with the tracked vehicles. This maximized use of stevedore assets and allowed for a quicker vessel load, but the container was never identified as a priority item.

CONEX boxes are commonly segregated by sensitive items, hazardous material and general cargo. They are also prioritized by category. Unfortunately, the maintenance CONEX was only categorized as general cargo for this move. Had 1/3 ABCT and 833rd personnel identified it as a priority item, it would have been loaded last on/first off. Loading the maintenance CONEX last would have ensured it remained in the staging area until the last day of loading, making the retrieval of repair parts much easier.

2/1 ABCT redeployment
Redeploying is not simply the reverse of deploying. There are many factors that have changed during deployment to both equipment and personnel, affecting both the mental status of Soldiers and the readiness levels of equipment. During the 2/1 ABCT redeployment, many factors contributed to a frustrating sequence of events. Factors such as rail-loading and block-leave scheduling were within 833rd's and 2/1's ability to change, while others were outside our control.

Pre-deployment activities
The 833rd Transportation Battalion had deployed 2/1 ABCT to Korea nine months prior. The UDL used for the deployment was not identical to redeployment. The 833rd received the UDL

as soon as the vessel departed Korea from 837th Transportation Battalion. While the ideal timeline is 60 days prior to operations, the vessel sail time of three weeks permitted ample time for 833rd to prepare at the Port of Tacoma.

PSA personnel for 2/1 ABCT was more than adequate in size and composition. They provided 75 Soldiers, including a mix of leadership, medics, unit-mobility officers, drivers and maintenance personnel. The PSA arrival timeline allowed adequate time for a port orientation, introductions and a CONOP brief.

The 833rd Transportation Battalion conducted weekly IPRs during the planning phase of this operation, although attendance was a challenge due to different time zones and Reserve Component involvement. In addition to IPRs, communication with 837th Transportation Battalion in Korea was used early and often. This permitted coordination with both the "pitch and catch" battalions. There was also a virtual pre-deployment site survey conducted four weeks before the vessel arrived.

Port operations
The 2/1 ABCT intentionally placed their maintenance package at the stern of the ramp in a priority CONEX. This container held the tools required to connect all batteries swiftly upon lowering the ramp. Since U.S. Customs and Border Protection must clear all containers before they can be opened, this caused all equipment to be held fast, leading to a frustrating delay. Redeploying units should consider having maintenance parts and tools available as part of their PSA equipment to avoid download delays.

Another issue that arose during discharge operations occurred when 16 pieces of equipment failed the Customs and agricultural-inspection process. This particular incident led to more costs for agricultural cleaning. Although agricultural cleaning and inspection is conducted in Korea, shipping across the Pacific Ocean loosened some phytosanitary debris. This cost remains the deploying unit's responsibility to link its division G-8 and SDDC G-8 points of contact to reconcile lines

of accounting allotted for the exercise to prevent delays in disposition operations.

Disposition is the onward movement of all unit equipment via multiple means of conveyance. For ABCTs, rail is often used for as many pieces as possible, especially the heavy tracked vehicles. Some containers and wheeled rolling stock are commercial line-hauled to their destination. SDDC owns a contract for rail assets, but timeliness and availability are affected by many variables such as railcar availability and serviceability.

Sensitive items can include weapons, optics, computers and other critical items with a serial number. The 833rd Transportation had trouble acquiring line-haul trucks for both sensitive items and general cargo during 2/1 ABCT's redeployment. This led to increased costs for security and a delay in reaching Fort Riley. The delay put Soldiers at risk of missing holiday block leave following deployment, as the brigade commander directed that there would be no block leave until all containers containing sensitive items were received at Fort Riley.

Rail operations created more issues because there was a significant delay in all four trains' arrival at the Port of Tacoma. The 833rd Soldiers had transit visibility tools and attended daily conference calls with the rail companies, but they had no control over their timeliness because they are in constant competition with commercial rail requirements. Rail operations encountered more delays due to a high rate of "bad order" rail cars and cars requiring repair. The bad-order cars were deemed unusable, while other cars were repaired on-site and used after a delay.

A final issue with the rail load was that 833rd relied on UDL weights instead of the actual weights for the variants of the M2A3 Bradley Fighting Vehicle. The marine-cargo specialists instructed PSA drivers to load three Bradleys per rail car. It was revealed the next day that incorrect UDL weights put the rail cars overweight. With the PSA personnel already on a flight back home, 833rd used port labor to lift the middle M2A3 from each rail car instead of

driving them. Port labor used top-loading lift assets and slings to move the Bradleys onto additional cars in accordance with rail standards.

Lessons-learned

The 2/1 ABCT redeployment brought up three preventable items to improve upon. One is that we at 833rd Transportation Battalion need to do our homework to better understand what we are receiving and what we are sending. The UDL was received with enough time to react, but it was provided by 837th Transportation Battalion in Korea instead of by the supported unit. While the UDL timeliness may not have prevented rail delays, it would have added fidelity to the planning effort.

Another issue to improve upon is not to be in a rush. Getting the PSA back in time for block leave became a planning factor one week into the mission. PSA leadership needs to be on the ground to make the difficult decisions if temporary duty needs to be extended to meet the mission requirements. While it worked out in the end, it was apparent that Soldiers had holiday leave on their mind as a distraction.

Agricultural cleaning can be fickle. Units do their best to clean all items to standard, but often some items do not pass inspection on the other side of the ocean. On this redeployment, agricultural cleaning seemed like an afterthought. The Port of Tacoma set up a hasty cleaning point to react, but prior planning and higher expectations would have set this mission up for smoother inspections and cleaning processes.

In all, the 2/1 ABCT redeployment was a success. All equipment arrived at home station, no injuries occurred and Soldiers were able to take holiday leave.

In fact, both the 1/3 and 2/1 BCT missions were successful. This article simply brings to light some of the issues that may be encountered during deployment or redeployment activities. With information from a transportation battalion's perspective, ABCTs may be able to prevent common missteps on their future movements and increase communication between the sustainers and our maneuver brethren.

MAJ Matthew Mosteiko is the executive officer, 833rd Transportation Battalion, JBLM, WA. His previous assignments include transportation officer, 593rd Expeditionary Sustainment Command, JBLM; movements control officer, 371st Theater Opening Element, Fort Sheridan, IL; operations officer, 645th Regional Support Group, Southfield, MI; commander, 952nd Quartermaster Company, Livonia, MI; and platoon leader, 724th Transportation Company, Bartonville, IL. His military schools include the Command and General Staff College, Theater Sustainment Planner's Course, Ordnance Captain's Career Course, U.S. Army Reserve Pre-Command Course, Ordnance Basic Officer's Course, Basic Noncommissioned Officer's Course and Primary Leadership Development Course. MAJ Mosteiko has a bachelor's of science degree in meteorology and a master's of science degree in public administration, both from Central Michigan University. Among his awards are the Bronze Star Medal and the Meritorious Service Medal. MAJ Mosteiko served 18 years in the U.S. Army Reserve before being called to active duty in July 2019.

ACRONYM QUICK-SCAN

ABCT – armored brigade combat team
CONEX – container, express
CONOP – concept of operations
DDST – deployment and distribution support team
IPR – in-progress review
JBLM – Joint Base Lewis-McChord
NSS – National Security Strategy
PSA – port-support activity
SDDC – Military Surface Deployment and Distribution Command
SPoE – seaport of embarkation
TFI – total-force integration
UDL – unit-density list

Armor School Announces Sullivan Cup 2022

The Sullivan Cup, the competition for the title of "Best Armor Crew in the U.S. Army," is slated April 24-May 6, 2022, at Fort Benning, GA. The competition is open to the public and is hosted by the Maneuver Center of Excellence, the U.S. Army Armor School and 316th Cavalry Brigade.

The event is held over a grueling 13-day period that rigorously tests U.S. Army Soldiers in physical fitness and gunnery skills, as well as tank and Bradley Fighting Vehicle crew tasks.

"This year's competition promises to be a rigorous event experienced by the top qualified crews in the U.S. Army," said BG Thomas M. Feltey, Chief of Armor/commandant of the U.S. Army Armor School, in announcing the competition. "The title of 'most lethal tank and Bradley crew' can be achieved only by two crews that demonstrate the highest excellence in their craft. Each armored/mechanized division throughout the Army will provide their best tank and scout Bradley crews to compete for the honor of this distinction. We look forward to hosting this world-class event."

The competition was named for retired GEN Gordon R. Sullivan. GEN Sullivan was commissioned as an Armor officer and commanded many Armor formations throughout his storied career. GEN Sullivan retired from the Army in 1995 after more than 36 years of service, which culminated as the 32nd Chief of Staff.

As the Chief of Staff of the Army, he created the vision and led the team that transitioned the Army from its Cold War posture. In August 1993, President Bill Clinton assigned the duties and responsibility of acting Secretary of the Army to GEN Sullivan, who continued to serve as Chief of Staff.

During his Army career, Sullivan also served as vice chief of staff; deputy chief of staff for operations and plans; commanding general, 1st Infantry Division (Mechanized), Fort Riley, KS; deputy commandant, U.S. Army Command and General Staff College, Fort Leavenworth, KS; and assistant

Figure 1. SPC Michael Adams, tank gunner, Company C, 1st Battalion, 77th Armor Regiment, 4th Brigade Combat Team, 1st Armored Division, prepares to disassemble and reassemble a M240 machinegun as part of the gunnery-skills competition during the 2012 Sullivan Cup precision tank-gunnery competition at Fort Benning, GA. *(Photo by SPC Brandon Bednarek, 4th Brigade Combat Team, 1st Armored Division)*

commandant, U.S. Army Armor School, Fort Knox, KY. His overseas assignments included four tours in Europe, two in Vietnam and one in Korea.

Figure 2. 1LT John Dupre, a tank commander with the North Carolina Army National Guard's Company C, 1st Battalion, 252nd Armored Regiment, directs his crew's fire from the hatch of their M1A1 Abrams tank while engaging targets on the range during the GEN Gordon Sullivan Cup best-tank-crew competition at Fort Benning, GA, May 2, 2016. The Sullivan Cup tests tank crews from throughout the Army on everything from gunnery to mounted land navigation, maintenance and combat-casualty care in a variety of physically and mentally challenges to determine the Army's best armor crew. *(U.S. Army photo by SFC Jon Soucy, National Guard Bureau)*

Left of the Boom: Letters to Myself

by CPT John Mahood and
Chaplain (MAJ) Jared L. Vineyard

Dear (younger) John,
Congratulations. You are about to take command and begin one of the most rewarding experiences of your career. The lessons you learn, the people you meet and the places you go will stick with you for a lifetime. I caution you to take this assignment seriously and deliberately. It will be tempting and easy for you to trade your moral values for quick and easy decisions – decisions that when viewed individually will seem insignificant, but later on, could cause you some regrets.

You will feel pressure to perform at high levels because of the incredible peers you see on a daily basis. You will believe you are nowhere near as good as they are. These feelings are normal and should drive you to perform at a higher level. Remember, you will not see their shortcomings, nor will they let them be known. Regardless, you may make bad decisions because you

think you have to compromise your morals to "keep up." You will inevitably mishandle some situations, and you will not make everyone happy.

Honest and regular communication between you and your higher headquarters is critically important. I often made compromising decisions based on a perceived lack of time available. You will have enough time to execute the priorities. Your battalion and brigade commanders are smart and understanding. If you feel like there is not enough time to accomplish all they ask of you, you must communicate that with them immediately. They will be able to reprioritize the tasks they have for you or even underwrite the risk associated with not accomplishing all the tasks on time.

Do not allow yourself to cut corners or outright lie about completing tasks. Do not shy away from failing. Failure will grow your character and reinforce your morals and ethics. Do not make a habit of failing, but do

so gracefully. Ask for forgiveness, learn and move on.

Above all else, be the person you are. Do not try to change to play the role of a commander. You are who you are based on your upbringing, and that is more than enough for you to be a good commander. Have fun and enjoy the ride!

Whereas all young officers begin their career with a baseline understanding of the Army as a profession,[1] most young officers haven't come to the point of truly knowing what being an Army professional means. And while it might be presumptuous to believe that anyone can ever completely grasp this concept, it is true that it usually takes time, experience and further education to come to terms with the professional status of a U.S. Army officer. That said, a little extra intentionality can go a long way at every level.

This article is designed to remind all officers, both young and old, of the expectations in ethically leading our force today. To help, we will use the famous "be, know, do" mantra the Army adopted and relate it to three topics: the leader as a professional, the character of a leader and the awareness of a leader. Putting it all together, the leader needs to "be" an

Army professional, "know" the Army standard for character and live morally aware in his or her operating environment, which is the "do" requirement.

Be: profession of leader

Every Army leader is a professional and doctrinally every Army professional must be ethical. The very first page of Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession*, clearly addresses the topic: "The Army has a dual nature as both a military department of government and a trusted military profession. The character of the Army as an institution and a profession are both essential to accomplishing the Army's mission. However, it is the American people's trust and confidence in the Army as an ethical profession that grants it the autonomy to exercise the disciplined initiative critical to accomplishing missions under diverse conditions around the world."[2]

The ethical nature of the Army professional is key in the Army profession's mission accomplishment. The leader's ethics grant him or her autonomy as a professional in American society. This autonomy allows the Army to carry out its tasks with confidence. What is the professional task of the Army? What is its expertise in? The Army's collective expertise is the "ethical design, generation, support and application of landpower."[3] Therefore, the job of the Army, simply put, is the ethical application of land power and the duties and responsibilities that go along with it.

And while seemingly at a very high level of terms and theory, ethics for the Army professional are more than just a matter of definition. It is a matter of being right vs. being wrong. An Army leader cannot be right unless he or she is ethical. And while this may sound a bit strange, this is exactly how the Army profession has defined the term "right" in the past. The definition is "a decision or action is right if it is ethical (consistent with the moral principles of the Army ethic), effective (likely to accomplish its purpose, accept prudent risk) and efficient (makes disciplined use of resources)."[4] While Army Doctrine Reference Publication (ADRP)

1, *The Army Profession*, now stands as a legacy document, it is supported today in the current publication of ADP 6-22 with 13 specific references.[5]

So, doing right means being ethical, effective and efficient. But what does this mean for an Army professional? It means that being right incorporates all three. For example, doing right must take into consideration getting the job done or accomplishing the mission (effective), but must also factor in how the job is accomplished (ethically and efficiently). It means that while a professional may feel the press of time (efficiency), he or she must also feel the press of morality and legality (ethical). It means that cutting corners is not acceptable for a professional (ethical) even while keeping the goal in mind (effective). And while it is true that there will probably be tension among being ethical, effective and efficient, the Army professional cannot drop the first word in the sequence.[6] Being an Army professional means being ethical, and being ethical means, among other things, being right.

Know: character of leader

Every Army leader must know the standard for character if he or she expects to live that standard. Ethics, doing and being right, are all wrapped up in the idea of character. While the Army gives no formal definition of character, it states that character relates to the moral and ethical qualities of a leader.[7]

The Army continues: "A person's character affects how they lead. A leader's character consists of [his or her] true nature guided by his or her] conscience, which affects [his or her] moral attitudes and actions. A leader's personal reputation is what others view as character."[8]

Character relates to the past, which includes all the education, beliefs and experiences that make us who we are, which relates to the present. And while it is true the issue of character is vast, the Army is concerned with its leaders' character in the present so they will lead well, both now and into the future. Specifically, the "character attributes that are of special interest to the Army and its leaders are Army

Values, empathy, the Warrior Ethos and service ethos, discipline and humility."[9] These are five attributes that the Army specifically and especially looks toward as a standard in the realm of character.

Out of these five attributes, one might argue that empathy and humility are two of the least talked about or understood in and by Army leadership.[10] One could say they are two different lenses that leaders should look through when focusing on people: empathy, the lens one should use when leaders look at others around them, and humility, the lens one should use when a leader looks at himself or herself.

Empathy is the "propensity to experience something from another person's point of view; (the) ability to identify with and enter into another person's feelings and emotions, enabling clearer communications and better guidance (and) the desire to care for and take care of others."[11] Empathy should extend to those under one's leadership, those to the left and right, and even to those in leadership positions above oneself.[12] Empathy looks outward.

Humility on the other hand should look inward. Humility in its simplest form is "the absence of arrogance," which is associated with putting mission goals ahead of self-serving ones in which leaders are eager for input and feedback from others to gain a more accurate self-understanding.[13] Army leaders need the mantra that they are here to serve and not be served, a service that involves honest and accurate output and input.

The lenses of empathy and humility are vital as leaders look at both themselves and others.

Army leaders need to be men and women of character. It is important that every leader knows the standard to live it, to "do" what is right.

Do: moral awareness of leader

While it may seem odd to put awareness, a noun, under the "do" mantra, it is a reminder that all leaders must actively work to gain personal, situational and moral awareness. Moral

awareness is quite simply understanding one's environment to ensure that all is right within that environment. This idea gets at the heart of Army leadership; for instance, the eighth step in troop-leading procedures is supervise. Supervising ensures the right job is accomplished by the right people in the right manner for the right reasons.

While moral awareness should be second nature to an Army leader, the institution has struggled with this concept in the past. A glaring example of this struggle came out six years ago in the monograph **Lying to Ourselves**. Authors Dr. Leonard Wong and Dr. Stephen Gerras stated in the summary: "This study found that many American officers, after repeated exposure to the overwhelming demands and the associated need to put their honor on the line to verify compliance, have become ethically numb. As a result, an officer's signature and word have become tools to maneuver through the Army bureaucracy rather than being symbols of integrity and honesty."[14]

Thus, instead of finding that Army leaders, and in this case officers, were morally aware of their situations, it found they were instead the exact opposite, ethically numb. The Army can and must do better than this. Leaders at echelon must know what is and what is not going on in their organizations. And when leaders identify gaps, steps must be taken to honestly and wholeheartedly rectify situations, retrain personnel, repair equipment or do whatever needs to be done because that is what professionals with character do.

America's Soldiers get to wear the jersey of the greatest team in the world, the American Army.[15] Being on this team means something. It means everyone who wears this uniform is a professional and ethical. It means that everyone who wears this uniform is a leader of character. It means everyone who wears this uniform is morally aware of their operating environment, at home or deployed.

It means we can be better today than we were yesterday, and it means we must be better tomorrow than we are today.[16] This is what we ought to be,

this is what we can be, and this is what we will be when we are intentional about refocusing on the basics.[17]

Dear (older) John,
Congratulations! If you are reading this, things have obviously gone well for you, and you made it through your years as a major in one piece. No doubt you are nervous (as you always have been) about taking on this new role and assignment. Trust in the Army's decision to place you where you are and know that you are going to enjoy it.

There are three things I want you to think about before taking command: humility, empathy and moral courage. You have been shown these traits in the past by former battalion and brigade commanders, and you know what it feels like to have someone lead with those qualities in their heart. You need to give that same experience to your subordinates now. They deserve to have someone lead them with their best interest in mind.

You're not infallible. You are human and so are the people in your battalion. Extend them the grace you want from your leaders. Let them know you make mistakes and you encourage them to happen. We can grow as a team by trusting each other to own our mistakes and fix them.

The Soldiers in your battalion do not have easy jobs. They have lives outside the military that will affect their job performance. You have had experiences where you weren't at your best due to stress not related to the Army. Always ensure your people are mentally and emotionally OK before assuming they failed a task due to laziness or apathy. By asking how your Soldiers are doing, you will show them you care. It goes beyond accomplishing the mission of the day to caring for them as a person. Each Soldier is an individual and unique.

There will be hard decisions to make and you won't want to

make them. Remember your Soldiers and their families. Do not allow yourself to be blinded by the urgency of now. The Army will continue to move forward if you and your unit are not perfect all the time. If the hard decision is the result of your lack of guidance and foresight, then do not shy away from taking the blame. Do not allow your subordinates to feel they failed because of something you did or failed to do. It is never easy to fall short of expectations, but if we learn and grow as a team, there is good to be taken from that experience.

I hope you (we) are doing well. Have fun, don't take yourself too seriously, and don't forget to smile.

CPT John Mahood is the Maneuver Captain's Career Course (MCCC) team chief, assigned to Command and Tactics Directorate, Maneuver Center of Excellence (MCoE), Fort Benning, GA. Previous assignments include MCCC small-group leader; commander, Headquarters and Headquarters Company, 1st Battalion, 77th Armor Regiment, 3rd Brigade Combat Team (BCT), 1st Armored Division, Fort Bliss, TX; and commander, mechanized-infantry company, 1-77th Armor, 3rd BCT, 1st Armored Division. CPT Mahood's military schools include MCCC, Cavalry Leader's Course, Armor Basic Officer Leader's Course and Airborne School. He has a bachelor's of arts degree in criminal justice from Marshall University.

Chaplain (MAJ) Jared Vineyard is the ethics instructor and writer at MCoE. Previous assignments include chaplain, Headquarters and Headquarters Battalion, 25th Infantry Division, Schofield Barracks, HI; chaplain, 225th Brigade Support Battalion, 2nd Brigade, 25th Infantry Division; chaplain, 743rd Military Intelligence Battalion, Buckley Air Force Base, CO; and chaplain, 2nd Battalion, 506th Infantry Regiment, 4th Brigade, 101st Airborne Division (Air Assault), Fort Campbell, KY. Chaplain Vineyard's military schools include Field Artillery Basic Officer Leader's Course, Chaplain Basic Officer Leader's Course, Chaplain Captain's Career Course, intermediate-level education,

Air-Assault School and Airborne School. He has a bachelor's of science degree in political science from the U.S. Military Academy, West Point, NY; a master's of divinity degree from Southwestern Baptist Theological Seminary, Fort Worth, TX; and a master's of sacred theology degree in ethics from Yale Divinity School, New Haven, CT. Chaplain Vineyard's awards include the Bronze Star Medal, Purple Heart Medal and the Meritorious Service Medal with two oak-leaf clusters.

Notes

[1] Every commissioned officer is required to receive 16.25 hours of training related to the profession, ethics and leadership through Basic Officer Leadership Course A and B, according to the Fiscal Year 21 Master Common-Core Task List.

[2] ADP 6-22, *Army Leadership and the Profession*, Washington, DC: Government Printing Office, July 2019.

[3] ADP 6-22.

[4] ADRP 1, *The Army Profession,* Washington, DC: Government Printing Office, June 2015.

[5] ADRP 1 is included on these pages of ADP 6-22: 1-2, 1-4, 1-5, 1-6, 1-7, three times on 1-8, 1-10, twice on 1-11, 1-23, 6-5.

[6] Not only do specific words have specific meaning, but the placement of words is also significant. It is more than interesting to note that in all 13 appearances of "ethical," "effective" and "efficient," this is the order in which they always appear. Thus "ethical" always appears first.

[7] ADP 6-22.

[8] Ibid.

[9] Ibid.

[10] This can easily be seen by the emphasis on Army Values and the Warrior Ethos in most unit areas as well as on what is taught in professional military education at institutional level. Also, one could go to just about any unit in the Army and hear a discussion about discipline in one form or another.

[11] ADP 6-22.

[12] An interesting topic for Army leaders to think about is extending empathy toward his or her own family. Oftentimes leaders immediately think of those in the workplace as recipients of empathy, which is appropriate, but very often fail to see how this attribute can and should be used in the leader's own home.

[13] Ibid.

[14] Leonard Wong and Stephen Gerras, *Lying to Ourselves: Dishonesty in the Army Profession*, monograph published by U.S. Army War College Press, February 2015.

[15] GEN Paul Funk, "Ethical Leadership with General Ham," discussion at U.S. Army Training and Doctrine Command headquarters, Fort Eustis, VA, Jan. 13, 2021.

[16] This idea is the premise found in the preamble of the U.S. Army's founding legal document, the Constitution of the United States, which states, "We the people of the United States, to form a more perfect Union. …"

[17] Loosely based on GEN Douglas MacArthur's "Duty, Honor, Country" speech upon receiving the Sylvanus Thayer Award at the U.S. Military Academy, 1962.

Honoring our Armor and Cavalry Medal of Honor Heroes

Derived from Center of Military History information provided at https://history.army.mil/html/moh/civwaral.html. Listed alphabetically. Note: Asterisk in the citation indicates the award was given posthumously.

HILTON, ALFRED B. SGT
Unit: Company H, 4th U.S. Colored Troops. Place and date of action: Chapins Farm, VA, Sept. 29, 1864. Born: Harford County, MD. Date of issue: April 6, 1865. Citation: When the regimental color bearer fell, this soldier seized the color and carried it forward, together with the national standard, until disabled at the enemy's inner line.

HOFFMAN, HENRY CPL
Unit: Company M, 2nd Ohio Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: Germany. Date of issue: May 3, 1865. Citation: Capture of flag.

HOLLAND, MILTON M. SGM
Unit: 5th U.S. Colored Troops. Place and date of action: Chapins Farm, VA, Sept. 29, 1864. Entered service: Athens, OH. Born: 1844, Austin, TX. Date of issue: April 6, 1865. Citation: Took command of Company C after all the officers had been killed or wounded and gallantly led it.

HOLMES, WILLIAM T. PVT
Unit: Company A, 3rd Indiana Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Entered service: Indianapolis, IN. Born: Vermilion County, IL. Date of issue: May 3, 1865. Citation: Capture of flag of 27th Virginia Infantry (CSA).

HOLTON, CHARLES M. 1SG
Unit: Company A, 7th Michigan Cavalry. Place and date of action: Falling Waters, VA, July 14, 1863. Entered service: Battle Creek, MI. Born: May 25, 1838, Potter, NY. Date of issue: March 21, 1889. Citation: Capture of flag of 55th Virginia Infantry (CSA). In the midst of the battle with foot soldiers, he dismounted to capture the flag.

COBRA COMMENTS

Logistical-Status Report in Doctrine

by CPT John W. Briley

CPT Andrews is a forward-support-troop commander for a cavalry squadron. He is co-located with CPT Evans, the squadron S-4, at the combat-trains command post (CTCP). It's 9 a.m., and CPT Evans has yet to receive Alpha and Bravo Troops' logistical-status (LOGSTAT) reports despite the fact that they were due at 7 a.m. CPT Evans is out of frequency-modulation (FM) radio range but has sent several messages over his Joint Battle Command-Platform (JBC-P) to LTs Harris and Jones, the executive officers of Alpha and Bravo Troops.

Regardless of the communications challenge, CPT Andrews has a logistics package (LOGPAC) to deploy to the squadron's templated logistical release point (LRP) because his distribution platoon is expected to be there at 2 p.m. with fuel and water.

CPT Evans grimaces as he reviews the LOGSTATs he received from Delta Tank Company and Charlie Troop. Based on those reports, he attempts to forecast the fuel and water requirements for both Alpha and Bravo Troops. Clearly frustrated, he tells CPT Andrews, "Just take all the fuelers; we don't want to miss an opportunity to resupply them."

CPT Andrews nods his head, concurring with CPT Evans, but he is also frustrated that he's about to backhaul fuel and water once again.

Value of LOGSTATs

Thorough and accurate LOGSTATs facilitate forecasting commodity consumption.[1] A maneuver unit at troop echelon that thoroughly completes a LOGSTAT builds situational understanding for logistical planning and execution.[2] Timely submission also gives the distribution platoon the time it needs to understand the requirements and build the LOGPAC in a way that accommodates the requirements. Moreover, good LOGSTATs give logistical planners foresight in projecting commodity requirements for future operations.

When done properly and in requisite detail, a unit will save valuable time while meeting the unit's commodity requirements through resupply at LRPs.

Predictive logistics is vital to sustainment planning and execution; it begins with the LOGSTAT. There is one example LOGSTAT in Army doctrine: Field Manual (FM) 4-0, **Sustainment Operations**, Appendix E-1. However, maneuver leaders at troop echelon typically do not review this FM during planning; when a troop executive officer plans sustainment for his or her troop's mission, he or she likely refers to Chapter 7 of Army Techniques Publication (ATP) 3-20.97, **Cavalry Troop**.

There the executive officer learns he or she must submit the report daily to the squadron S-4 (ATP 3-20.96, **Cavalry Squadron**, 7-8). The troop first sergeant is required to track expenditure rates by commodity (ATP 3-20.96, 7-9). Platoon sergeants submit LOGSTATs as outlined in troop standing operating procedures (SOPs) (ATP 3-20.96, 7-11). Unfortunately, these ATPs lack an example of a LOGSTAT.

The LOGSTAT encompasses critical classes of supply that the commander determines to provide the situational understanding required to forecast future consumption and meet immediate requirements while meeting operational-tempo demands.[3] It designates between what can be reapportioned vs. what is a "sunk cost" commodity, unable to be recovered once issued.

Here are a few examples of the level of detail needed. First, fuel: a troop should highlight its fuel requirements as the amount required to fill the vehicles and the amount of fuel needed for fuel cans separately. This is

Figure 1. Soldiers on a National Training Center (NTC) rotation conduct a logistics-synchronization meeting.

		On Hand	Request/NMC
Unit/PAX count		**Line 1**	
Location		**Line 2**	
(8 digit grid/ graphic control measure)			
CLI		**Line 3**	
A	MRE CASES		
B	WATER (GALLONS)		
CL III (B)		**Line 4**	
A	JP8 G/A/R/B		
B	DF-2		
C	AV GAS		
D	FULL FUEL CANS		
CL III (P)		**Line 5**	
A	15W40 ENGINE OIL		
B	COOLANT (GAL) RADIATOR FLUID		
C	GEAR OIL 80/90W		
D	TRANSMISSION FLUID		
E	OTHER		
CL IV		**Line 6**	
A	C-WIRE		
B	METAL STAKES		
C	SANDBAGS		
D	4X4, 2X4, PLYWOOD		
E	NAILS		
H	SCREWS		
I	WOODEN CHOCK BLOCK		
J	WOODEN LATERAL		

		On Hand	Request/NMC
CL V		**Line 7**	
A	9mm		
B	5.56 loose		
C	5.56 link		
D	7.62 link		
E	.50 CAL		
H	40mm LINK		
I	40mm LOOSE		
J	AT-4		
K	JAVELIN		
L	120mm HE		
M	120mm SMOKE		
N	120mm ILLUM		
O	120mm IR		
P	120mm WP		
Q	SMOKE GRENADE		
R	FRAG GRENADE		
S	FLASH GRENADE		
T	ILLUM FLARE		
U	60mm		
V	M3 CARL GUSTAV		
W	STINGER		
X	CLAYMORE		
AC	TOW		
CL VIII		**Line 8**	
CL IX		**Line 9**	
OTHER		**Line 10**	

Figure 2. A "how to" LOGSTAT for the troop-echelon level. *(Developed by 3rd Cavalry Regiment during NTC Rotation 20-02, November 2019)*

important because fuel cans can be re-apportioned to another troop in the event of an emergency. However, fuel in a vehicle cannot be reapportioned.

Second, water: reporting the gallons of water required to fill individual-Soldier carrying devices should be separated from the requirements for filling water cans and water buffalos when submitting a LOGSTAT.

SOPs define reporting

The unit SOP must articulate reporting requirements. The unit must outline a primary, alternate, contingency and emergency plan to provide the platform for LOGSTAT submission in a dispersed and contested environment.[4] A best practice includes submission using JBC-P and incorporating voice submission via FM and high-frequency radio as an option.

A unit must plan to deliver an analog, hand-filled LOGSTAT directly to the CTCP if the situation requires.

The SOP must provide the frequency of LOGSTAT reporting. A best practice is for two LOGSTATs to be submitted per day, providing logistical planners adequate time to accurately forecast commodity consumption rates.[5] Time of submission should remain flexible and be informed by the squadron S-2's analysis of likely enemy contact.

Another best practice is to schedule LOGSTAT submissions during periods when enemy direct and indirect-fire contact is projected to be at its lightest.

Takeaway

LOGSTATs drive sustainment planning and execution, impacting the probability of success or failure of mission. This underscores the importance of a comprehensive LOGSTAT that addresses all commodities and is published in the unit SOP. With it, units can expect to receive timely and adequate resupply.

It also provides logistics planners time and foresight to meet their demands and plan future operations. An example of a best practice for a detailed LOGSTAT can be found on this page, ready for use at the troop echelon.

CPT John Briley is an observer/coach/trainer (O/C/T), Operations Group, NTC, Fort Irwin, CA. His previous assignments include combat-sustainment-support battalion S-3 O/C/T, Operations Group, NTC; cavalry forward-support-company O/C/T, Operations Group, NTC; commander; Troop D, 1st Squadron, 89th Cavalry Regiment, 2nd Brigade Combat Team, 10th Mountain Division (Light), Fort Drum, NY; battalion S-4, Headquarters and Headquarters Battalion, 10th Mountain Division, Fort Drum; and brigade assistant S-4; 2nd Armor Brigade Combat Team, 2nd Infantry Division, Camp Hovey, Republic of Korea. CPT Briley's military schools include the Quartermaster Basic Officer Leadership Course, Logistics Captain's Career Course, Air-Assault School and Pathfinder School. He has a bachelor's of arts degree in political science from the University of Tennessee. His awards include the Meritorious Service Medal.

Notes

[1] FM 3-96, *Brigade Combat Team*, October 2015.

[2] Ibid.

[3] FM 4-0, *Sustainment Operations*, July 2019.

[4] FM 3-96.

[5] Ibid.

LEGENDS OF ARMOR

"TALIK"

Major General Israel Tal
Israeli Defence Forces

"Steel" Division Commander
Six Day War - 1967

Commander of the Armour Corps

Assistant Minister of Defence
Government of Israel

Father of the MERKAVA Tank

TACTICAL DECISION EXERCISE

by LTC Ben Ferguson

The following tactical vignette serves as the first in a new series of scenarios focused on large-scale combat operations. *ARMOR* publishes tactical vignettes, or tactical decision exercises, to generate professional dialogue. Scenarios may seem vague and lack pertinent information to mimic the confusion of battle. There are no "right" or "wrong" answers. Use your doctrinal knowledge and educated assumptions to determine "What's Your Next Move?" The author's solution, along with the best solutions from the field, will be published in a subsequent issue of the magazine.

Situation

You are the commander of A Team (tank heavy), Task Force (TF) 3-8. You are the TF's advance guard as it conducts a movement-to-contact. The TF's mission is to fix and then destroy the advance guard of a mechanized-rifle division that is moving east toward the international airport. The TF's movement will allow the rest of the brigade to maneuver and destroy the regimental main body, with enough combat power left to block the rest of the enemy division.

Scenario

While conducting resupply in Tactical Assembly Area Blast, intelligence, surveillance and reconnaissance reports locate large groups of enemy tracked vehicles 15 kilometers away from Command Post (CP) 1. The TF commander has directed you via Joint Capabilities Release (JCR) to occupy Battle Position 1 and delay the enemy force until the rest of the battalion can arrive.

Your team consists of two M1A2 tank platoons and one mechanized-infantry platoon. Your company has tactical control of the battalion scout-platoon section toward the forward-line-of-own-troops and the mortar platoon follows in support; you have priority of fires, but your fire-support officer has limited contact with the lead firing battery.

The terrain is mostly open, lightly forested prairie with little undulation, but with some higher terrain in the center of the zone. As you approach the intersection at CP 6, the easternmost scout platoon's observation post (OP) reports visual contact with about 30 vehicles, which are moving east and starting to deploy vicinity CP 1, and a wheeled vehicle moving just north of CP 7. A moment later, your other mounted scout OP reports they have identified what they assess are threat-vehicle sections north of Hill 560, moving east toward CP 3 and in the vicinity of CP 2.

What's your next move? Decide what
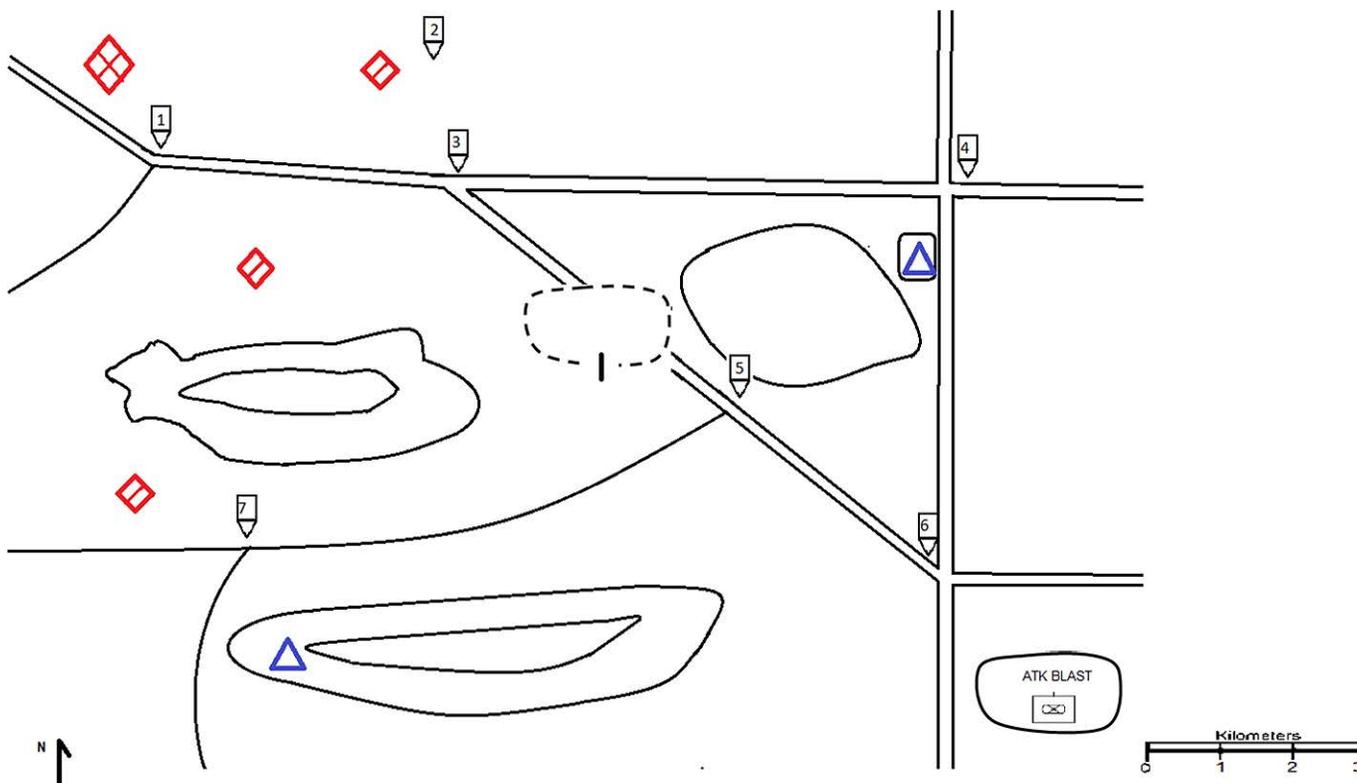
to do and issue your fragmentary order (FRAGO) as if you were speaking on the radio or via JCR message. Following your initial FRAGO, take time and clearly define the problem(s) as you see it/them. Submit both your initial FRAGO and discussion of the problem, assumptions and rationale for your solution to **ARMOR**. Submit solutions to usarmy.benning.tradoc.mbx.armor-magazine@army.mil no later than Jan. 7 to be considered for the Spring 2022 edition.

From the Maneuver Center of Excellence "Fundamentals of Reconnaissance" poster series, https://www.benning.army.mil/armor/fundamentals/RF-1.html

There is No Conflict between Maintenance and Training: How to Establish an Effective Unit Maintenance Culture

by LTC Colin P. Mahle and
LTC Charles L. Montgomery

Serving as an organizational leader in the most powerful army in the world represents an incredible opportunity! Based on our experiences as battalion commanders within an armored brigade combat team (ABCT), we outline in this article the most important building blocks to assist organizational leaders in establishing and fostering a maintenance culture.

Preparation prior to assuming positions of this magnitude is paramount, especially from an intellectual perspective. The last time battalion commanders *commanded* was likely 10 years previously at company level. This divide in time and space is massive, and your attention to detail can help rapidly shape success in your organization.

The most earth-shattering epiphany during command is the realization that you as battalion commander, along with your battalion command sergeant major, are the most experienced leaders in the organization. Therefore commander's dialogue and directives demand precision and clarity to ease friction for subordinates during execution. Although clear commander's intent is often thought of in relation to field training, it's just as impactful in home-station functions such as establishing a maintenance culture.

There is never conflict between maintenance and training. Conducting maintenance is training, and its effect when properly implemented will pay significant dividends toward increasing operational readiness (OR) in support of decisive-action operations. Unfortunately, based on competing operational priorities, maintenance operations can be underprioritized or largely delegated to sustainment leadership. This lack of an established unit-maintenance culture translates over time to reduced leader involvement, inefficient processes and long-term impact on equipment readiness.

The goal of this article is to highlight key foundational processes and intellectual approaches designed to shape the deliberate establishment of a maintenance culture in any type of organization within our Army.

Establishing effective maintenance culture

The sustainment warfighting function exists to extend the commander's operational reach, sustain operational tempo and enable freedom of action. The brigade command team maintenance and logistics synchronization meetings are the most powerful executive-level assemblies that provide detailed synchronization of resources and organizational priorities. The brigade-support battalion (BSB) commander serves as chief of sustainment, with a distinct responsibility to chair these meetings. The brigade executive officer and support-operations officer serve as facilitators.

Production of executive-level notes allows the brigade combat team (BCT) commander the ability to leverage or reprioritize resources to address identified gaps. The published notes serve as a key progression or regression indicator, with the goal to move the readiness needle forward continuously. The battalion executive officers and the maintenance warrant officers, combined with forward-support company (FSC) commanders and company executive officers, represent the preponderance of the audience and intellectual body of executioners.

BCT leaders must take full advantage of division and external resources designed to provide a range of technical/supply assistance. Most of these entities include:

- Division/corps G-4;
- Sustainment brigade;
- Army field-support brigade;
- Defense Logistics Agency; and
- Army Materiel Command (AMC) lifecycle-management commands.

Resources are finite. As organizational leaders, it's our responsibly to understand available resources to stay ahead of potential resourcing shortfalls which may hinder OR. The goal is to establish a maintenance culture that effectively transitions to any operational environment. This mandates continuous leader involvement with a detailed task and purpose, which adds holistic credibility to the maintenance program. The standard is to maintain equipment at the 10/20 level, which requires equipment fully-mission-capable – all faults properly identified, installed or ordered; services performed and up to date; modification work orders applied; and authorized basic-issue items and components of end items present and serviceable. The goal is to *prevent* mechanical failures by establishing a disciplined and deliberate service program committed to identifying impending failures.

The second aspect involves minimizing the amount of time that equipment is non-mission-capable to ensure the unit maintains the highest possible OR rate. This structure allows the highest levels of OR, thus bringing to bear maximum levels of destruction on the enemy in combat.

Recommendations: Make implicit standards explicit and highly encourage leader involvement at all levels. Overdue services, delinquencies and failure to secure supplies/equipment/oil samples are key indicators that leaders are not involved. Publish maintenance standards early and implement the appropriate forecasting tools to avoid future failure. Finally, establish positive relationships with sustainment professionals who are echelons above your assigned organization. The established relationships will provide valuable assistance reaching prescribed Army maintenance standards.

ARMOR ✕   Fall 2021

Establishing clear battalion-level expectations

Like other parts of unit culture, a culture of maintenance begins with leaders establishing clear expectations and setting priorities. One shouldn't assume that leaders in your unit have experience with effective maintenance programs. Whether mounted or dismounted, leaders and Soldiers arrive at your unit with diverse backgrounds and varied experience. This is a true strength of our military, but not all these skills are directly applicable to building an effective maintenance culture. Clearly articulating foundational guidance such as motorpool uniform standards, formation requirements and maintenance battle rhythm will help ensure shared understanding.

Outlining leader expectations is also important. Where do you expect commanders and first sergeants during maintenance operations? What are the unit standards for Form 5988E completion, submission and fault validation? Further, how can Soldiers and leaders be right if there is not a published standard to emulate? Delegating these decisions solely to executive officers or maintenance technicians could cause subordinates to misunderstand your prioritization of maintenance operations.

Executive officers, warrant officers and motor sergeants are critical as the execution arm of maintenance operations. However, their actions are not a substitute for clear commander's intent. Remember, it's your (the commander's) maintenance program, and it's your responsibility to set the tone and culture of the organization. Simply put, identify foundational unit standards and clearly articulate principles across the organization to shape the establishment of a maintenance culture.

Recommendations: Start with a maintenance terrain walk with battalion leadership and determine the status of your maintenance program, including pride, ownership, leader involvement and process efficiency according to division and brigade standards. Determine your shortfalls and conduct a subsequent terrain walk with

Figure 1. SPC Godspower Okoroh (left) and SPC Phillip Hutto, both with Headquarters Support Company, 615th Aviation Support Battalion, 227th Aviation Regiment, 1st Air Cavalry Brigade, 1st Cavalry Division, perform maintenance. A culture of unit maintenance moved this unit to Army-award-winning level. *(U.S. Army photo)*

company and platoon leadership to clearly articulate expectations.

Supporting companies through synchronized battalion programs

In addition to setting expectations, commanders should resource and synchronize battalion-level maintenance programs. Leveraging battalion systems to track requirements and increase awareness can empower subordinates and increase efficiency. Although programs such as the Army Oil Analysis Program (AOAP), test and measurement diagnostic equipment (TMDE) and overaged repairable-item list are generally thought to be the domain of company-level executive officers to navigate. However, company programs can suffer in silence if not

resourced and monitored at battalion level. Field-training exercises and leader transitions make continuity for company programs challenging.

The Global Combat Support System-Army (GCSS-A) is the Army's system of record. Using this system as a forecasting tool to identify future requirements and decision points can add tremendous value to your program. Looking ahead toward projected requirements is always better than looking behind at delinquencies.

An example of a company-level action having battalion-readiness implications are weapons gauges from the FSC armament section. Although clearly within the FSC commander/executive officer responsibilities, delinquent armament gauges could leave the battalion without the ability to conduct annual weapons gauging and impact weapons qualification, live-fire exercise requirements and rapid deployability. With battalion-level forecasting through GCSS-A, the battalion executive officer or the battalion maintenance officer could recommend early calibration or adjacent unit coordination as a mitigating measure before losing a critical battalion capability. Although, in this specific example, we recommend having two sets of weapons gauges with six months offset calibration to never lose the ability to gauge weapons.

Recommendation: Use GCSS-A as a forecasting tool and publish future requirements to increase awareness of upcoming services, AOAP, TMDE, etc. This resource provides companies the necessary information to execute company maintenance programs and reduces delinquencies.

SSA operations
The supply-support activity (SSA) is unequivocally the nucleus of logistical operations. This single BCT entity serves as the catalyst to improve OR and is governed by Army Techniques Publication 4-42.2, *Supply Support Activity Operations*. The SSA is comprised of the following sections: stock control, receiving, issue, storage and turn-in.

Commanders at echelon must devote time and personal energy into SSA operations to ensure that the return on

this precious investment permeates throughout the entire formation. Commanders must instill discipline into the following daily activities:

- Clearing unit SSA bins;
- Company commander and first sergeant weekly visits;
- Eliminating free issue through responsible supply ownership; and
- Operationalizing SSA operations (executing operations with a tactical-logistics-package mindset).

AMC owns the SSA, which is operated by American tax dollars through the Defense-Wide Working Capital Fund. As Soldiers we have a fiduciary responsibility to safeguard resources, combined with responsible financial execution. Commanders must ensure that their unit-level military-occupation specialty 92As (automated logistical specialists) are properly trained on GCSS-A functions, with appropriate supervision in parts ordering.

Finally, the supply-chain management decision/execution loop must be properly closed through the execution of post goods issue and post goods receipt. This execution displays prudent management of supplies, which affects tactical-, operational- and strategic-level operations. Battalion commanders play an integral role in the preservation of our national supply system. The inability to deliberately manage this system will produce detrimental effects within our Army over time.

Recommendation: Conduct maintenance meetings at the SSA monthly meeting and execute BCT-level SSA terrain walks with the BCT commander. In addition, develop a certification for 92As and publish VL06I reports, which display supplies at the SSA that are ready for pick up. It's also important to operationalize SSA pick-ups by using operations orders and mission briefs to improve tactical operations in field environments.

Maintenance reporting: how to reinforce culture and unit priorities
There are many ways to establish internal reporting requirements that reinforce maintenance culture and unit

priorities. We recommend against structuring your battalion reporting or commander's critical information requirements solely with OR rates and the equipment-status report (ESR) in mind. In fact, we believe it's difficult to build an effective battalion maintenance culture using only the ESR and OR rates, as these tools do not accurately evaluate the building blocks of maintenance culture such as leader involvement and maintenance-efficiency rates.

With a little creative thinking, commanders can establish maintenance reporting that gauges the maintenance culture while actively supporting leader development. We recommend reporting that highlights high-payoff resources, which impacts all entities such as a shop office. If the Very-Small-Aperture Terminal (VSAT) is non-mission-capable, the battalion has lost the ability to dispatch vehicles, order Class IX parts and update the ESR.

How long do you want your battalion executive officer to work the issue before he/she makes you aware? 12 hours? 24 hours? Further, when do you notify your brigade commander that you have a critical sustainment shortfall and discuss a shift in resources? Whatever the answer, this example helps to show how critical maintenance reporting supports commander decision points.

There are obviously other battalion-level resources that can impact daily maintenance operations such as welding, fabrication and armament capabilities. With the help of your maintenance leadership, identify mission-critical organic resources and determine a reporting framework that support unit priorities.

Let's shift to how maintenance reporting also supports leader development. A good example is the decision points surrounding controlled substitutions. Although your warrant officer is routinely first to identify a potential controlled substitution, the discussion and decision should involve both the gaining and losing company commanders. This small step requires the commanders to understand and articulate the maintenance action and develop a recommendation based on battalion-readiness priorities.

Whatever the decision, the knowledge and shared understanding gained facilitates leader development and helps to reinforce the unit maintenance culture.

Recommendation: Establish a battalion maintenance reporting framework that is aligned with critical capabilities and use routine maintenance actions as opportunities for leader development in your formation. As an example, we would recommend aligning maintenance reporting with assets unique to your formation or that do not have redundancy such as the VSAT, overhead lift and armament capabilities.

Ethical ESR management

The ESR epistemology correlates the methodology associated with the development of tactical plans, specifically up-to-date equipment/resources available to maneuver commanders they can employ against the enemy. Thus the ESR represents a binary contract between higher- and subordinate-level commanders, which stimulates a tangible level of trust that assigned equipment is prepared or unprepared for combat.

So when does prolonged troubleshooting or failure to correctly report the operational status of assigned equipment becomes unethical? This boils down simply to communication at echelon. Certainly, there are faults which may not seem prudent to place on the ESR – for instance: controlled substitutions, parts on hand or active troubleshooting. However, there must be a published timeframe that all leaders understand at echelon. Most units incorporate a 72-hour timeline; we would argue that this is too long, as it relates to pace and tempo in combat.

Regardless of the established timeline, leaders must have the fortitude to report what's truly non-mission-capable without fear of reprisal or retribution from superior leaders. Some potential indicators of inaccurate reporting are:

- Severe degradation of OR rate within the first 36 hours of a field exercise;
- The inability to perform rollout exercises; and
- The lack of in-transit visibility of Class IX parts flow.

The establishment of an effective and efficient maintenance system takes the proactive involvement of every leader in the organization. Once the organization has established a true maintenance culture, its ability to wage effective combat operations will significantly increase.

The battalion commander is the only leader who can establish organizational culture and climate. If maintenance and sustainment are commander priorities, the behavior and actions of the formation will reflect it. Therefore the commander must also certify the formation on maintenance practices just as he/she does for battle drills and live-fire scenarios. Although the BSB commander serves as the BCT's chief of sustainment, every commander plays a vital role in establishing an effective maintenance culture that supports operational requirements. The effectiveness of your formation to execute the assigned mission depends on the durability of the equipment and Soldiers within the formation.

Recommendation: Establish a binding contract within your organization that is easily understood and simple to execute at the lowest level. Implementing the six-hour rule is prudent

technique. This rule includes the following guidelines:

- Equipment that requires more than six hours to troubleshoot must enter the ESR.
- If troubleshooting occurs under six hours and the equipment can be repaired within 24 hours, equipment does not enter the ESR.
- If the part is on hand, can be installed and repaired within 24 hours, the equipment does not enter the ESR.
- Repairs longer than 24 hours will always enter the ESR.

The standard 72 hours of troubleshooting is unrealistic, and it provides significantly less clarity on the ESR. This detracts from the power this document is designed to portray to commanders.

LTC Colin Mahle is attending the Senior Service College as part of the George C. Marshall Scholars program at the School of Advanced Military Studies (SAMS). Previous assignments include executive officer to the commanding general of the Combined Arms Center, Fort Leavenworth, KS; commander, 4th Battalion, 6th Infantry Regiment, 3rd ABCT, 1st Armored Division, Fort Bliss, TX; commander, Regimental

Figure 2. A Soldier assigned to 1st Battalion, 12th Cavalry Regiment, pulls maintenance on an armored vehicle to ensure things are in good order after arriving in Korea from Fort Hood, TX, for a nine-month deployment. The unit, a combined-arms battalion, is assigned to 2nd Infantry Division's 1st Armored Brigade Combat Team. It deployed to Korea with about 800 Soldiers, 20 M1A2 Abrams tanks and 30 M2A3 Bradley Fighting Vehicles. The Soldiers are stationed at Camp Stanley and Camp Hovey. *(U.S. Army photo)*

Headquarters and Headquarters Company, 75th Ranger Regiment, Fort Benning, GA; and commander, Company A, 1st Battalion, 66th Armored Regiment, 1st ABCT, 4th Infantry Division, Fort Hood, TX. LTC Mahle's military schools include the Engineer Officer Basic Course, U.S. Army Ranger School, Pathfinder School, Jumpmaster School and Joint Firepower Course. He is a graduate of the Virginia Military Institute with a bachelor's of arts degree in history. LTC Mahle also has a master's of military arts and science degree in history from the U.S. Army Command and General Staff College.

LTC Charles Montgomery is the senior sustainment trainer at the Joint Multinational Readiness Center, Hohenfels, Germany. His previous assignments include commander, 123rd Brigade Support Battalion, 3rd ABCT, 1st Armored Division, Fort Bliss, TX; assignments manager (majors), Human Resources Command, Fort Knox, KY; support-operations officer, 2nd Infantry Brigade Combat Team (IBCT), 3rd Infantry Division, Fort Stewart, GA; brigade S-4, 2nd IBCT, Fort Stewart; and G-5 SAMS planner, 3rd Infantry Division, Fort Stewart. LTC Montgomery's military schools include the Transportation Officer Basic Course, Airborne School, Pathfinder School, Joint Planner's Course, Joint Firepower Course and SAMS. He holds a master's degree in military operational art and science from SAMS, a master's of science degree in human-resource management from Tarleton State University and a master's of science degree in history from the University of Southern Mississippi. Among LTC Montgomery's awards are the Bronze Star Medal with oak-leaf cluster and the Meritorious Service Medal with five oak-leaf clusters.

Field Hygiene: Intersection of Training, Readiness, Leadership and Caring for Soldiers

by MAJ Robert W. Stillings Jr.

Field hygiene for the most part is an individual Soldier responsibility. Not to be conflated with field sanitation or handwashing before chow, field hygiene often occurs as the fourth priority of work. However, it frequently consists of hoping to have time to brush your teeth and shaving with uncomfortably cold water – primarily so the command sergeant major does not find you unshaven in the field. These activities normally take place after three hours of sleep, while your meal-ready-to-eat is heating up and just before the range or training area goes hot.

This scenario reflects reality for many of our Soldiers in a high-operational-tempo training environment; it is also hospitalizing our Soldiers. Relegating field hygiene to an afterthought unnecessarily reduces readiness, degrades training value and undermines Army senior leaders who prioritize preserving our No. 1 resource, the Soldier.

While tough, realistic training is a top priority, simple solutions can dissolve the fictitious zero-sum game that has been created between tough, realistic training and Soldier well-being.

I'm interested as an Army leader in addressing this subject for the protection of our Soldiers – and because it almost cost my life.

I was part of National Training Center (NTC) Rotation 19-05 in March 2019. I began experiencing symptoms on Training Day 11, and within four hours I was evacuated to Weed Army Community Hospital, Fort Irwin, CA, with a 104-degree fever. Within 12 hours I became septic and needed emergency surgery. The on-call Army surgeon saved my life.[1] I was infected with necrotizing fasciitis (flesh-eating bacteria) – accompanied by its 30-percent fatality rate.[2] I was air-transferred to a civilian hospital and underwent multiple surgeries and operations, including a skin graft.

My chain of command was incredibly supportive. The brigade commander personally ensured that my wife was on an airplane within 12 hours out of fear I would not recover. For 17 days I was an inpatient, being treated with three of the strongest intravenous antibiotics available. In the end I survived, but with permanent disability in my dominant hand. I was fortunate; that same year one service member (SM) died and another lost his leg from the same bacterial threat.[3, 4]

After two years of reflection on these three cases, I was left with four questions: Is this a subset of a larger issue? What is the cost to the Army? Are we missing this in our risk management? How can we mitigate the risk without impacting training?

Is there an issue?

Necrotizing fasciitis is a severe bacterial infection, one of many skin and soft-tissue infections (SSTIs). From 2013 to 2016, there were 282,571 SSTIs reported by medical providers across the active-duty military.[5] That number accounts only for those SMs who sought treatment and amounted to 558 infections per 10,000 SMs per year, or 5.6 percent per year.[6] There were 10,904 more infections in the deployed environment, which amounted to 460 infections per 10,000 SMs per year or 4.6 percent per year.[7]

Stated more clearly, each year 5.6 percent of home-station SMs and 4.6 percent of deployed SMs developed an infection requiring treatment. Of those, 238,925 required treatment by a medical provider (as opposed to a combat medic).[8] Those 238,925 cases of SSTIs resulted in 395,361 office visits and

Figure 1. Chronology of the author's bout with flesh-eating bacteria. Far left: Following initial surgery, 36 hours after first symptom. Left: 24 hours later, upon arrival at Sunrise Hospital, Las Vegas, NV. Right: 10 days later, before final surgery, debridement and skin graft. Far right: two hours following surgery and skin graft. *(Far left photo courtesy of Dr. P.J. Chandler. Others: Family photos)*

19,213 hospital-bed days.[9]

In a separate data analysis, from 2017 to 2020 there were 90,251 infections across all U.S. Army components. Those infections resulted in 123,698 doctor visits and 7,240 hospital-bed days.[10] In the active-duty Army, that amounted to 337 infections per 10,000 SMs a year or 3.4 percent.[11]

These numbers account only for reported incidents and do not account for where the infections took place. SSTIs are more likely to occur where infrequent hand-washing and bathing, abrasions, environmental contamination and close Soldier proximity are more frequent. This suggests that SSTIs are more likely to occur in a field environment among maneuver forces.

This assertion is supported by the study's finding that eight of the top 10 sites for SSTI rates house brigade combat teams (BCTs): Fort Benning, GA (one); Fort Bragg, NC (two); Fort Hood, TX (three); Fort Campbell, KY (six); Fort Bliss, TX (seven); Fort Sill, OK (eight); Fort Carson, CO (nine); and Fort Stewart, GA (10). These installations were all in the top 10 for case rates in the Army.[12]

Considering environmental factors and duty-station infection rates, it is likely the problem for active-duty maneuver forces in a field-training environment is well above 3.4 percent.[13]

What is the cost?

As I considered potential costs, I began to realize how complicated the issue is. I identified the following categories of cost:

- Treatment dollars;
- Readiness while deployed;
- Soldier well-being;
- Duty days/training days and unit medical readiness; and
- Schoolhouse dollars and certifications.

Treatment dollars: A typical outpatient medical visit can range anywhere from $200-$700 per visit.[14] Based on 2017-2020 statistics, there were 123,698 outpatient visits across all U.S. Army components for SSTIs.[15] Using a low-end figure of $250 to avoid any argument, that translates to a cost of $30.9 million. This number does not

account for any SMs who were treated without military knowledge outside the military-healthcare system. Also, among that same population, there were a total of 7,240 hospital-bed days (meaning patients admitted overnight).[16]

A search of a variety of reputable Websites yielded a low-end cost for a hospital-bed day of about $3,000. The low-end total for hospital-bed days is $21,720,000. The cumulative cost for treatment of military-healthcare-system reported infections from 2017 to 2020 was $52.64 million. These low-end estimates are further supported by a peer-reviewed journal that determined the four-year cost at initial-entry-training sites alone was $48 million.[17] Based on the previous discussion, estimates should slant toward the active-duty maneuver force, meaning high-end estimates may be closer to accurate than the low-end estimate of $52.6 million.

Readiness of deployed units: From 2013 to 2016 there were 10,906 cases of SSTIs in the deployed population, which amounted to a 4.6 percent infection rate per year.[18] If a maneuver company with 100 Soldiers deployed for a year, they would have roughly four Soldiers off-mission due to SSTIs alone. Many of these cases will require seven to 10 days of open-wound care and antibiotics.[19] The four off-mission Soldiers would also each require an average of two doctors' visits to the battalion surgeon.

Soldier well-being: Although this cost is not quantifiable, it is equally important. In my case, I lost the use of part of my hand, can't grip a golf club any longer, have permanent nerve damage and will inevitably qualify for disability. Also immeasurable were the psychological effects on my extended family, as they feared the worst for several days as I recovered in the hospital. The same can be said for the Gold Star family of the less-fortunate SM mentioned earlier in this article.

All leaders should endeavor to do what they can to ensure our Soldiers exit the service as close as possible to the health conditions in which they entered. Any Soldier who leaves the service with degraded health, or even

has a temporary degradation in health, is a cost that should be considered and avoided.

Duty days/training days: From 2017 to 2020 there was a 3.4-percent case rate per year across Army components.[20] In a company of 100 Soldiers, the commander will train without three or more Soldiers per year for an undetermined period of time.[21] Those may be platoon leaders, gunners or squad leaders. These leaders will likely be precluded from field environments for seven to 10 days, may have open sore(s), require antibiotic treatment and require two doctors' visits. If each patient has seven limited-duty days, the U.S. Army loses 631,757 training days to SSTIs every four years, or 157,939 days per year. Also, each of these SSTIs will carry either a temporary or permanent profile and will impact medical readiness and deployability to varying degrees.

Schoolhouse dollars and certifications: Reconsider the top 10 installations for case rates and consider the schoolhouses that are represented (Benning, Bragg, Hood, Jackson, Leonard Wood, Campbell, Bliss, Sill, Carson and Stewart).[22] If a Soldier is unable to graduate due to missing seven to 10 field days, there is an associated cost.

Any of the following are possible:

- The Soldier is missing from his/her unit longer due to recycle, causing more funding and time for a new course slot;
- The Soldier is returned to his/her unit without qualification;
- A lieutenant is late in arriving at his/her first BCT, hindering the unit and professional development;
- There is a requirement to send a replacement Soldier to gain certification;
- There are gaps in additional-skill identifier coverage in a unit; and
- There is temporary loss of promotion readiness pending school completion.

When a Soldier lost his leg at Fort Benning in 2019, medical personnel there identified that the streptococcus bacteria that caused it had spread to 60 other Soldiers. In addition to the financial cost of treating those 60

Soldiers, there was an additional cost in time and money when leaders decided to preventively treat 10,000 Soldiers at Fort Benning with antibiotics.[23]

What about risk management?

Some leaders view more constraints and risk mitigation as obstructions to their training efforts – they are wrong. Risk management is an enabler to organizational readiness, and the third principle of risk management is "accept no unnecessary risk."[24] As the 40th Chief of Staff of the Army (CSA), GEN James C. McConville, stated, "People are always my No. 1 priority: our Army's people are our greatest strength and our most important weapons system."[25] It is worth the time and effort to invest in his priorities.

There is clearly a risk associated with SSTIs; the next question is how to address it. First, identify the hazard. Using specific language from Army Techniques Publication (ATP) 5-19, *Risk Management*, the hazard or source in this case is bacteria. The mechanism is cuts, abrasions, trauma or germ spread. The outcome is SSTIs in troops. Assessing the hazards according to ATP 5-19, this would be classified as frequent; the severity would be moderate resulting from the likelihood of losing duty days due to injury/illness. Based on Table 1-1 in ATP 5-19, the risk of SSTI carries a high risk.

That classification should frighten leaders, or at the very least cause hesitation and reflection. How many training events have I supervised with a high-risk hazard and without controls or mitigation in place? I immediately think back to every risk assessment I've seen in the last 15 years. I am certain I never saw SSTIs on a risk-assessment or risk-management worksheet.

How do we mitigate without impacting training?

In the case of SSTIs, hazard controls fall neatly into "educational (awareness) controls" and "hazard-elimination controls." There is a noncommissioned-officer (NCO) professional development (NCOPD) and combat-medic responsibility associated with SSTI prevention. NCOs and combat medics share a responsibility to educate and enforce good field hygiene. This not only involves brushing teeth and shaving but also cleaning your body, changing socks and undergarments, and cleaning your hands.

Most SSTIs occur on extremities. NCOs checking socks, boots and feet used to be commonplace, and medical experts agree that catching these infections early is key. There is no reason why NCOs and combat medics cannot ensure that Soldiers are taking the time to use baby wipes and hand sanitizer and to change undergarments. Incorporation into medic training, NCOPD and risk-management planning will help ensure those things happen.

Within the hazard-elimination controls in ATP 5-19 are engineering, administrative and personal protective equipment (PPE). Showers would fall within engineering. In some training environments, showers are feasible; in some, they are not. If they are available, leaders should not view them as a luxury; they should view them as a risk-control mechanism. A squad leader should ensure his or her Soldiers are showering to prevent risk to the Soldier, but more importantly to prevent the spread of bacteria like streptococcus and staphylococcus within the formation.[26] If showers are not available, then wipes and hand sanitizer fall into the PPE category.

Wipes should be an enforced item on a packing list; their daily usage in the field should be enforced as well. For long-duration training environments (for example, NTC, Joint Readiness Training Center (JRTC) and Ranger School), units should consider budgeting for hygiene kits. I recommend that every NTC and JRTC rotation purchases 10,000 hospital bathing-wipe kits. That is roughly two kits per Soldier and would allow them to bathe twice during rotation, cleansing themselves entirely with wipes that provide enhanced protection. National stock numbers for products such as Medline™, Readybath™ and Theraworx™ are already in the Army supply system. Brooke Army Medical Center at Fort Sam Houston, TX, is currently issuing the "Medline Ready Bath Select Bathing Clothing" available at $45 per 30-pack.[27]

Issuing two packs per Soldier for 20 continental-United-States training-center rotations per year for four years would cost $1.8 million. That cost is considerably less than the low-end treatment cost of $46.4 million … and notably is less than the combined cost associated with myself, the Soldier who lost his leg and the Soldier who lost his life. Army hospitals issue wipes like these frequently because their patients are at higher risk and cannot shower.

As evident throughout this article, our Soldiers are at higher risk the longer they are in the field. In fact, Soldiers are at a 21 percent higher risk than civilians in general.[28] In light of this, it could be negligent to not provide an on-hand, improved product for our Soldiers and to enforce usage, as risk increases over time at combat-training-center rotations. Future studies should consider broadening this recommendation to include high-risk populations like basic trainees. Usage of wipes transitions to the administrative controls to SSTIs.

As part of "making risk decision," commanders determine how to integrate this. At a gunnery density, as an example, it can be as simple as "after 72 hours, we will conduct a 30-minute pause. No activities are permitted during that time other than field hygiene. Leaders will ensure all Soldiers clean themselves and change undergarments."

Each commander has either a senior line medic, physician's assistant or physician. Those individuals can advise the commander on when to take precautions, how often, if precautions are necessary and the risk level based on training duration and environmental conditions.

Regardless of what advice commanders receive, the important part is that it is their risk decision to make until they delegate it.

NTC already has breaks in training. There are safety stand-downs, maintenance stand-downs, after-action reports and live-fire transitions. The operations group and rotational unit

have a variety of condition checks that are communicated over radios. There would be no impact to training to issue two sets of hospital wipes to each Soldier in the rotational unit's bivouac area and to use an already-scheduled training pause and conditions check to enforce their usage.

Would mitigation measures work?

In conducting research for this article, I interacted with multiple health professionals. Each of them in his or her own way said this question was not worth researching because it was already answered. The conversations went something like this:

Me: "Will cleaning your body prevent SSTIs?"

Doctor: "Yes, that's not even a question."

Me: "How do you know?"

Doctor: "Really? Because cleaning yourself reduces bacteria, and bacteria cause infection."

Me: "Is that common knowledge?"

Doctor: "Yes."

In 1917 the French army had already mandated standards for daily cleaning of feet and hands, daily bathing, weekly showering and frequent washing and changing uniforms.[29] These standards were proper then and should be integrated and enforced now. Given the medical advances since the early 1900s, if the Army has gone 100 years in reverse with regard to field hygiene, we are probably doing it wrong.

Per ATP 5-19 the risk is high, and these solutions meet the requirements of being feasible, acceptable and suitable. The support is available, controls are explicit, and standards are clear. Training can be conducted in-house, leaders should be ready and willing, and individual Soldiers should be disciplined to execute.

Conclusion

SSTIs affect more than 22,500 Soldiers per year, which costs the government more than $12 million per year.[30] Deployed forces consistently operate at a 4.6-percent degradation due to SSTIs, while separating many "Soldiers for Life" with degraded quality of health. The Army hemorrhages 157,939 limited-duty days per year, along with other unquantifiable training and schoolhouse costs attributed to SSTIs.

The CSA's No. 1 priority is the Soldier, as mentioned previously. This article has identified SSTIs as an often unaddressed, expensive and preventable risk to his No. 1 priority. There are only three reasons to overlook the threat that SSTIs pose in risk management: ignorance, apathy or negligence. (If the reader made it this far in the article, then ignorance is no longer an option.)

Field hygiene is where leaders, training, readiness and caring for Soldiers intersect. In a training environment, caring leaders set and enforce standards, which builds and maintains readiness and keeps our Soldiers safe. Maneuver leaders owe their Soldiers hospital-free training exercises.

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Notes

[1] This was Dr. P.J. Chandler, Weed Army Community Hospital. Chandler did the initial surgery and administered medication immediately, saving my life. He fought through bureaucracy to get me flown and admitted to a civilian hospital. His follow-on actions saved my arm and my career.

[2] Current mortality estimates are 24-34 percent, according to the Centers for Disease Control, although they can be as high as 74 percent if treatment is delayed.

[3] Meghann Myers, "Basic trainee got strep, then lost his leg to flesh-eating bacteria. Now his treatment is under investigation," *Army Times*, May 14, 2019. Retrieved Feb. 25, 2021, from https://www.armytimes.com/news/your-army/2019/04/04/basic-trainee-got-strep-then-lost-his-leg-to-flesh-eating-bacteria-now-his-treatment-is-under-investigation/.

[4] Meghann Myers, "Her son died of a flesh-eating infection. Now a Marine mom wants justice," *Military Times*, Nov. 15, 2019. Retrieved Feb. 25, 2021, from https://www.militarytimes.com/news/your-military/2019/11/15/her-son-died-of-a-flesh-eating-infection-now-a-marine-mom-wants-justice/.

[5] Dr. Shauna Stahlman, Valerie F. Williams, Gi-Taik Oh, Dr. Eugene V. Millar and Dr. (LTC) J.W. Bennett, "Skin and soft-tissue infections, Active Component, U.S. Armed Forces, 2013-2016," *Medical Surveillance Monthly Report*, Vol. 24 No. 7, July 2017.

[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] Ibid.

[10] Armed Forces Health Surveillance Division, Defense Medical Surveillance System, as of Jan. 25, 2021.

[11] Ibid.

[12] Ibid.

[13] Ibid.

[14] It is impossible to develop hard numbers because costs vary based on the facility, location, medications required, X-ray requirement, labs and severity. This range was developed based on searches of reputable insurance and hospital sites.

[15] Armed Forces Health Surveillance Division, Defense Medical Surveillance System, as of Jan. 25, 2021.

[16] Ibid.

[17] Stephanie M. Morrison, "Cost-effectiveness Analysis of Hygiene-based Strategies Aimed toward Prevention of SSTI and MRSA-Associated SSTI among U.S. Active-Duty Army Trainees," dissertation for doctorate of public health, Uniformed Services University of the Health Sciences, May 2015. Retrieved from https://apps.dtic.mil/sti/pdfs/AD1012734.pdf.

[18] Stahlman, Williams, Oh, Millar and Bennett.

[19] Also, the follow-up care, which is often invisible in cost analysis, cannot be overemphasized. Nancy Estocado, my physical therapist and wound-care specialist, passionately cared for me; her expert wound care saved my finger.

[20] Armed Forces Health Surveillance Division, Defense Medical Surveillance System, as of Jan. 25, 2021.

[21] The three-Soldier approximation is significantly underestimated due to service in a maneuver unit with long-duration field-training time.

[22] Ibid.

[23] Myers, "Basic trainee got strep, then lost his leg to flesh-eating bacteria. Now his treatment is under investigation."

[24] ATP 5-19.

[25] 40th CSA's initial message to the Army team.

[26] Elias B. Chahine and Allana J. Sucher, "Skin and Soft-Tissue Infections," *Public Safety Answering Points*, 2015.

[27] Cost is based on open market and does not account for bulk contract pricing.

[28] Stahlman, Williams, Oh, Millar and Bennett.

[29] Thorndike Saville, "Military Sanitation in the Present War," June 1917, *American Journal of Public Health,* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1361830, posted Aug. 30, 2011.

[30] Derived from four-year statistics mentioned earlier in the article.

ACRONYM QUICK-SCAN

ABCT – armored brigade combat team
ACR – armored cavalry regiment
ATP – Army techniques publication
BCT – brigade combat team
CSA – Chief of Staff of the Army
JRTC – Joint Readiness Training Center
NCO – noncommissioned-officer
NCOPD – noncommissioned officer professional development
NTC – National Training Center
PPE – personal protective equipment
SM – service member
SSTI – skin and soft-tissue infection
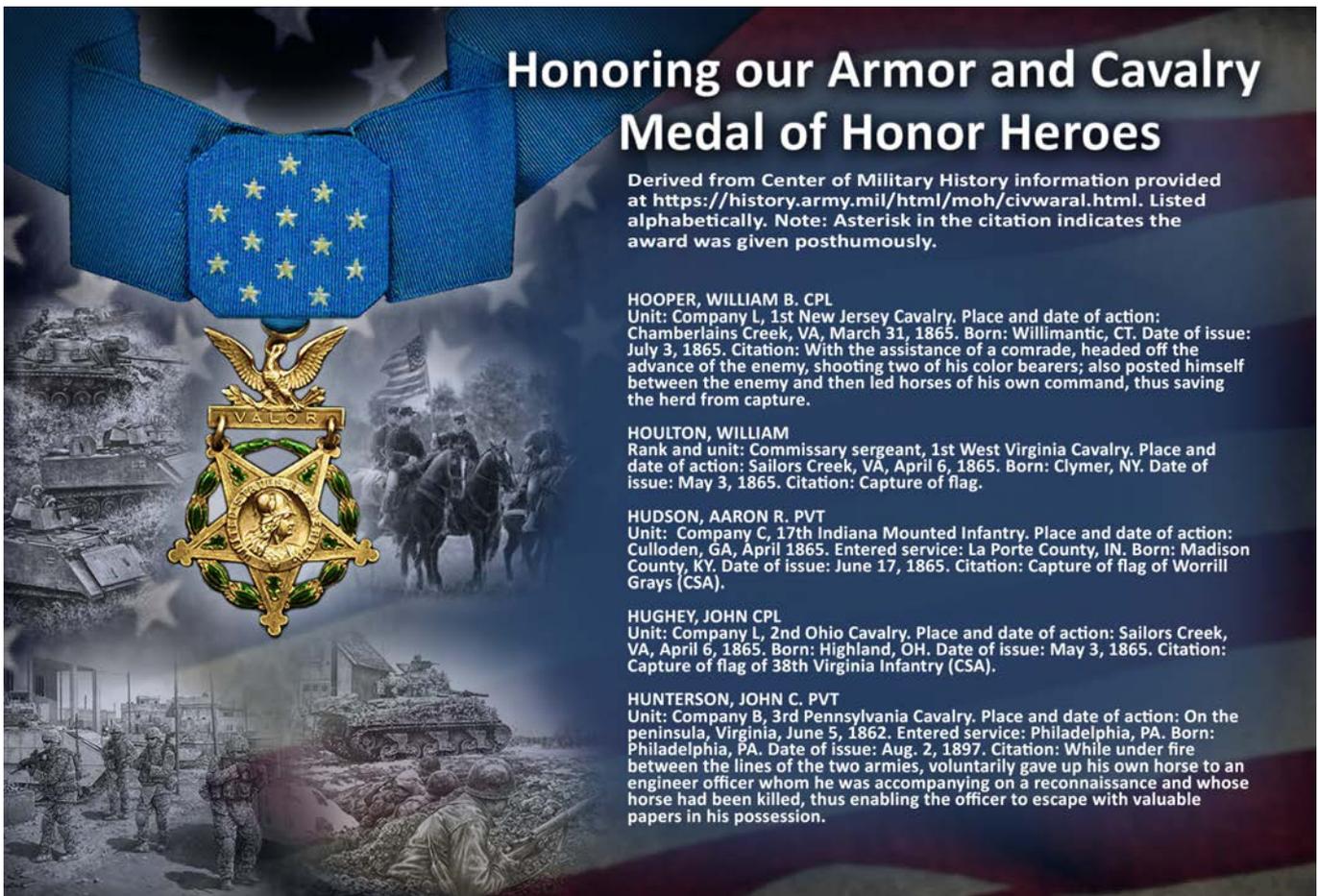
Honoring our Armor and Cavalry Medal of Honor Heroes

Derived from Center of Military History information provided at https://history.army.mil/html/moh/civwaral.html. Listed alphabetically. Note: Asterisk in the citation indicates the award was given posthumously.

HOOPER, WILLIAM B. CPL
Unit: Company L, 1st New Jersey Cavalry. Place and date of action: Chamberlains Creek, VA, March 31, 1865. Born: Willimantic, CT. Date of issue: July 3, 1865. Citation: With the assistance of a comrade, headed off the advance of the enemy, shooting two of his color bearers; also posted himself between the enemy and then led horses of his own command, thus saving the herd from capture.

HOULTON, WILLIAM
Rank and unit: Commissary sergeant, 1st West Virginia Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: Clymer, NY. Date of issue: May 3, 1865. Citation: Capture of flag.

HUDSON, AARON R. PVT
Unit: Company C, 17th Indiana Mounted Infantry. Place and date of action: Culloden, GA, April 1865. Entered service: La Porte County, IN. Born: Madison County, KY. Date of issue: June 17, 1865. Citation: Capture of flag of Worrill Grays (CSA).

HUGHEY, JOHN CPL
Unit: Company L, 2nd Ohio Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: Highland, OH. Date of issue: May 3, 1865. Citation: Capture of flag of 38th Virginia Infantry (CSA).

HUNTERSON, JOHN C. PVT
Unit: Company B, 3rd Pennsylvania Cavalry. Place and date of action: On the peninsula, Virginia, June 5, 1862. Entered service: Philadelphia, PA. Born: Philadelphia, PA. Date of issue: Aug. 2, 1897. Citation: While under fire between the lines of the two armies, voluntarily gave up his own horse to an engineer officer whom he was accompanying on a reconnaissance and whose horse had been killed, thus enabling the officer to escape with valuable papers in his possession.

Lessons-Learned from Assignment to the Least-Known Component of the Security-Assistance Enterprise

by MAJ Mike Kiser

U.S. military forces need capable partners today and, more importantly, in tomorrow's multinational battlespace. There is precedence for this partnering, as the Army has joined with allies and partners for operations and training around the globe for more than 245 years.

Most officers are familiar with the more conventional forms of security assistance as conducted through traditional military transition teams (MiTTs) or the recently established security-force-assistance brigades (SFABs). In addition, Special Forces detachments have long played a role in the larger security-assistance and co-operation environment.

A lesser known but long-serving component of the security-assistance and cooperation enterprise is the Security Assistance Training Management Organization (SATMO), headquartered at Fort Bragg, NC. SATMO has served as a force provider for more than 50 years to every combatant command (COCOM) and is the assigned brigade-level headquarters under the U.S. Army Security Assistance Command (USASAC) and the Army Materiel Command.

SATMO's mission is to help develop partner capacity and promote interoperability in every geographic combatant command (GCC). SATMO supports, resources and manages more than 70 forward-stationed teams that provide a mixture of technical, tactical and academic assistance to partner nations based on requirements from foreign military sales (FMS) cases or GCC-generated security-cooperation education and training (SCET) team requests.

TAFT teams

Most teams are filled with senior non-commissioned officers (NCOs), senior warrant officers and post-key-developmental-billet captains or higher officers. The SATMO mission of training partner forces and interacting with foreign military leaders requires a high level of maturity to operate independently out of an embassy with much lower levels of supervision than is common in the Army – the Army assumes that people holding senior rank have the requisite maturity to succeed in this assignment.

The most common of these teams that Army officers will serve on are the technical assistance, fielding and training (TAFT) teams. SATMO currently operates more than 40 TAFTs distributed throughout every COCOM, with officers serving as detachment commanders or advisers in the Caribbean or in countries as varied as Colombia, Georgia, Taiwan, Estonia and Saudi Arabia.

A broadening assignment to SATMO provides officers the chance to develop as leaders in unique multinational and joint operating environments while serving at the operational level. This article will provide lessons-learned on some of those challenges to help prepare officers headed to an assignment with SATMO.

One of the toughest challenges in a SATMO assignment is adapting one's leadership style to best suit the environment. The size of a TAFT can vary dramatically but is generally between two and 10 Soldiers. Unlike more conventional SFABs or MiTTs, where everyone generally has the same occupation specialty or background, TAFTs are composed of technical experts and are almost always tailored to support the COCOM's desired outcomes, priorities and objectives for that country based on the COCOM's respective campaign plan.

As an example, the Guatemala TAFT, by its approved table of organization, includes an Armor Branch major, a Special Forces captain, an automotive-maintenance warrant officer, a water-craft-engineer warrant officer, a light-wheeled-vehicle mechanic sergeant, a radio operator/maintainer sergeant, an infantry sergeant and a watercraft-operator sergeant. The warrant officers are generally between chief warrant officer two and chief warrant officer four in rank, and the NCOs are all typically sergeant first class or master sergeant.

The small size of the typical TAFT team and the senior ranks of all the members require a different leadership style than what the typical officer uses while serving as a company commander, battalion-operations officer or executive officer. Large organizations naturally tend toward a more formal approach, but the training-meeting formats used in a conventional brigade combat team, for instance, tend to be more cumbersome when leading a small team of senior NCOs and officers.

The ground TAFT in Columbia, for example, consists of only two field-grade officers: one Armor Branch lieutenant colonel and an Infantry Branch major. Synchronizing training and operations for them can occur through simple conversations and does not require a battle-rhythm event with a fixed agenda or slide presentation.

Finding the balance between the formal and the informal in a small-team environment is not something the conventional officer track normally prepares an officer for, but it is essential in a SATMO assignment.

Since TAFTs are designed to work for a COCOM, this creates some natural tensions within the organization as well, as a team's priorities in support of the campaign plan are set by the local Office of Security Cooperation (OSC) or equivalent, but the team's administrative priorities – such as the requirements in Army Regulation 350-1, ***Army Training and Leader Development*** – remain under the purview of SATMO and USASAC. This can lead to

situations in which a team leader has to negotiate more with his/her superiors than is normal in the Army to help the leadership at Fort Bragg and Redstone Arsenal, AL – where USASAC is based – understand the country team's priorities and for the country team to understand SATMO and USASAC priorities. When conflicting priorities and deadlines exist, it is up to the team leader to facilitate negotiations between organizations to shift deadlines and ensure that all aspects of the mission can be accomplished.

Being forward-stationed on an unaccompanied tour in a COCOM is not the same as a deployment. TAFT team members typically live in close quarters, with some TAFTs all living in the same house and normally without amenities, such as a post exchange, that "war on terrorism" veterans would associate with a deployment. Life support comes almost exclusively off the local economy – meaning the quantity, quality and diversity of products differs from what a service member typically expects.

Soldiers will often be tempted to act out given the remoteness of both family and the immediate chain of command during a SATMO tour. There is easy access on the local economy to both potential sexual partners and alcohol. In most of the partner nations, the U.S. dollar has more purchasing power compared to what Soldiers are used to, and this tends to increase the sense of temptation. Team leaders must be aware of any risky situations and hold violators of the Army Values immediately accountable. Any senior leader not showing the required maturity needs to be dealt with and reassigned immediately.

To be successful, team leaders need to find a way to maintain the right amount of professionalism while still giving subordinates and peers space to relax and be away from work, despite literally living in the room next door. The personalities on the team will play a large role in determining what the balance looks like for each TAFT.

Command, support relationships

Another challenge for officers is adjusting to the joint and interagency environment that embassy teams are normally built from. The command relationships for a TAFT are much more complicated than the traditional line and block charts at divisional units. As an example, Figure 1 illustrates the command and support relationships for the Guatemala TAFT.

Often the team's in-country priorities will be set by the OSC for that country and based on FMS or SCET training requirements, but SATMO and USASAC remain the organizational
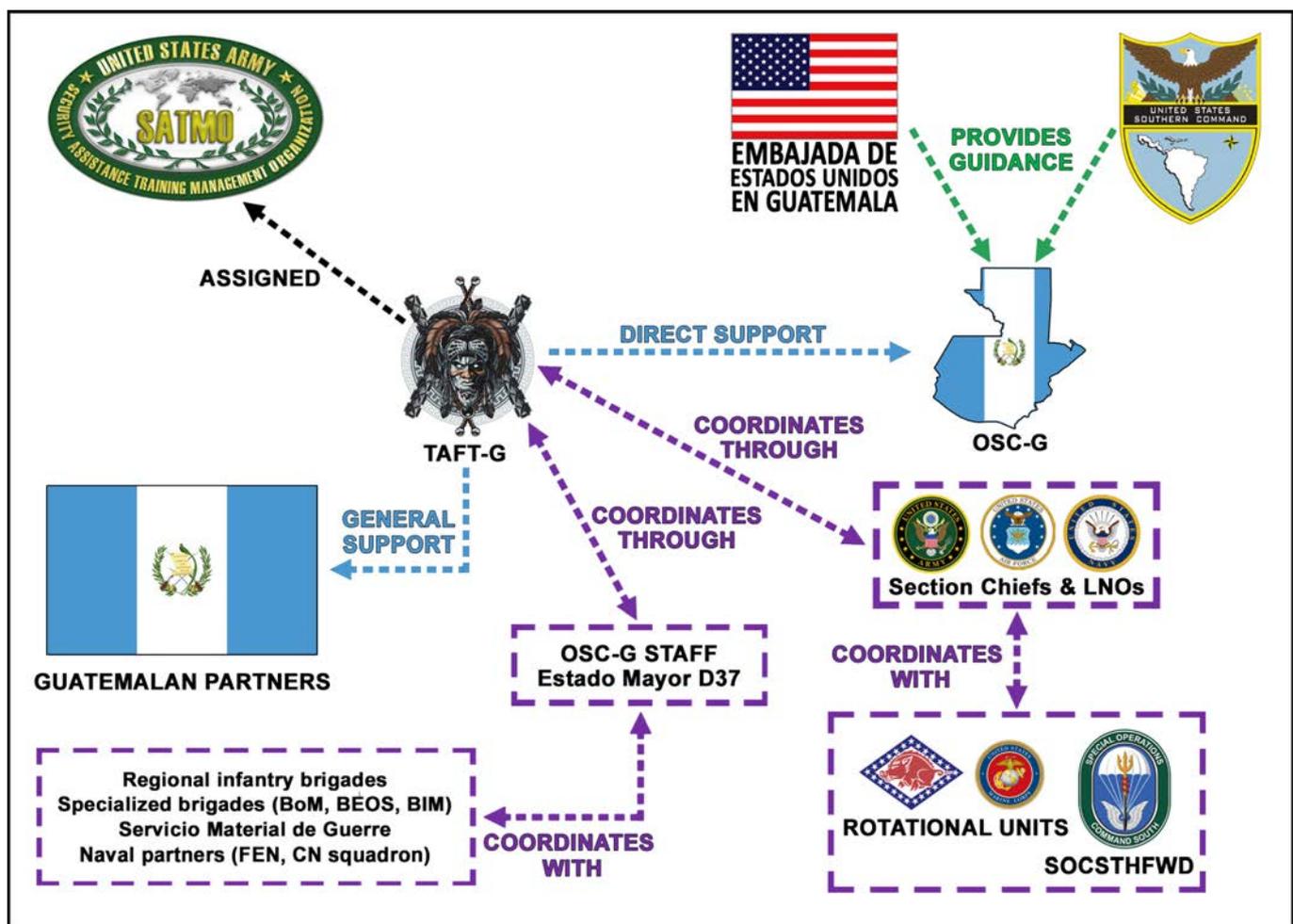

Figure 1. Command and support relationships for the Guatemalan TAFT, or TAFT-G.

headquarters for awards, evaluations and other administrative requirements.

Officers, particularly those serving as detachment commanders, need to be aware of the inherent frictions these command and support relationships can create and work to mitigate them to achieve mission success. They need to be able to tactfully communicate to both SATMO and OSC the effects any given policy will have on a mission. It is the SATMO team commander's responsibility to explain what they can and cannot do, based on the inherent authorities of the FMS case or SCET advising mission, Army regulations and command guidance.

Since SATMO is an economy-of-force mission for the Army, TAFT commanders also need to be honest brokers of when they think a mission is no longer necessary. The maturity and experiences SATMO officers gain will help them identify when a mission should be ended or modified. That honest assessment will help convey to both the SATMO commander and the OSC commander the organizational transitions (along with associated decisions, transitional tasks and risks) in both space and time.

Although Department of Defense (DoD) assets, TAFT team members are part of the embassy staff and are required to follow the local State Department regulations. For example, in-country travel (both personal and official) needs to be cleared through applicable administrative Army channels and the embassy's regional security office (RSO).

Each RSO will have slightly different procedures, but in Guatemala the RSO requires a detailed email, known as a travel locator, of the planned route, personnel traveling, hotels being used for overnight stays and similar details, provided at least 48 hours before all travel. Even though the RSO is not in the chain of command, it serves as one of the lead force-protection authorities for the U.S. government in the country and its travel restrictions cannot be ignored – even if the RSO is inherently more risk-adverse than what the DoD chain of command is willing to underwrite.

Officers serving as TAFT or detachment commanders need to ensure that training plans are built and executed with a specific capability in mind. The exact capability will be identified in an FMS case, funded by Title 22 dollars, and should be identified on the team's approved SCET request. The SCET provides the team's mission and composition, and it describes the deployment's desired outcomes. It is important to note that an SCET is generally approved for three years at a time, meaning that detachment commanders need to think beyond a single Officer Evaluation Report cycle and look at how a capability can be generated or improved over the mission's duration.

There also exists an inherent tension between the execution of the SCET or FMS cases that generated the original mission and the COCOM's campaign plan that stems from the different times at which they are written and updated. The COCOM campaign plan is a living document normally updated annually or biennially to reflect changes within the area of responsibility. The SCET or FMS is a document that is often not updated until it is pending a renewal, which can be anywhere between three to five years.

Mission changes

Sometimes the COCOM or OSC staff deems irrelevant the capability or outcome originally designated in the SCET or FMS case – or in need of modification because of changed circumstances. This leads to a potentially contentious situation. The detachment commander has a document, which was originally approved through the COCOM staff and authorized at DoD level, that tells him or her that the mission is to generate a specific capability in the country. In an FMS case, that document might also represent a legally binding contract with the partner nation.

In most cases for SATMO teams, DoD has directed that the Army (supporting command) provide a team with a defined mission and capabilities to the COCOM (supported command) to support an approved SCET or FMS case. Even if you look only at the Army's internal support relationships, there is a

50/50 chance the parent unit's (SATMO and USASAC) priorities are supposed to supersede those of the supported unit (OSC and COCOM).

While the COCOM as the "supported" command or its in-country representative, OSC, might be directing a change of mission, they do not inherently have that authority per doctrine outlined in Field Manual 6-0, *Commander and Staff Organization and Operations*. In such cases, it is critical for the detachment commander to remember that the team exists as an enabler to U.S. government priorities within the partner nation. While a team might execute discrete tasks in support of defined effects as per the doctrine outlined in Joint Publication 3-0, *Joint Operations*, the team ultimately exists to support the COCOM's desired outcomes and objectives, under which the OSC's effects and the team's tasks are ultimately nested.

Failing to recognize this dynamic can lead to significant setbacks in the larger security-cooperation program. Therefore the detachment commander has an obligation to support the COCOM and OSC priorities where they diverge from a potentially outdated SCET or FMS case to achieve the larger security-cooperation outcomes and partner-nation capability development.

Detachment commanders also have an obligation when the OSC or COCOM directs a change of mission to advise the SATMO commander at Fort Bragg about the change of mission and the extent to which his team can support the change of mission. Detachment commanders also make a recommendation on the extent to which SATMO and USASAC should resource the mission going forward.

A subtle change of mission (for example, changing the primary partner-nation unit the team supports) is a relatively low-impact change, particularly if the new partner-nation unit is expected to fill a similar role to the previous one.

A more drastic change of mission that could involve changing the composition of the team (such as asking a logistician-heavy team to advise on the installation and operation of an

air-defense network) requires much more coordination and ultimately requires a new SCET or FMS case to be approved at DoD level because SATMO and USASAC can only fill billets based off those in approved SCETs and FMS cases. Detachment commanders need to be able to communicate this to OSC chiefs to help set realistic expectations about how quickly the team can change its composition to support a new mission set.

Cultural, geographical considerations

In addition to the constraints and ambiguities imposed by working in the joint and interagency environment, detachment commanders also must work within the national and organizational cultures of the partner nation. Each partner nation has a distinct national culture that shapes the environment in which SATMO teams operate. For example, teams in Eastern Europe and Ukraine must account for how their countries are influenced by historic relationships with Russia, which could now shape their worldview.

Teams operating in Central and South America likewise need to account for how their actions could be perceived as imperious and potentially cast the U.S. government in a negative light because of the history between those countries and the United States. For example, U.S. interventions in support of Chilean dictator Augusto Pinochet or the Nicaraguan Contras are never far from mind in the U.S. Southern Command area of responsibility.

All these geopolitical considerations require that detachment commanders find an approach to partnering with the host nation that accounts for national sensibilities and avoids negative exposure to the U.S. government. Unlike the common deployment experiences of Iraq and Afghanistan, SATMO teams most often work with mature militaries that have entrenched organizational cultures. Detachment commanders must therefore learn the nuances of those cultures to generate the social capital needed to be effective partners and advisers. Falling into the mental trap of "the American way of business is the best way of business" will only lead to frustration and a lack of results.

As an example, most Eastern European, Central and South American armies are extremely officer-centric. Tasks that American military officers normally associate with NCO duties are routinely performed by lieutenants and captains. Decisions an American captain might make as a company commander are often made at lieutenant-colonel or colonel level. Also, those armies make distinctions between enlisted soldiers that we are not used to.

There are generally two broad categories for rank in Central and South America that Americans are familiar with: *sargentos*, which are NCOs, and *trupos*, which are the junior enlisted. There is also another category of *especialista*. Most Americans would interpret *especialista* as an indication of a Soldier's military-occupation specialty (MOS) because it translates as "specialist" and is usually used in the context of "specialist in aviation," for example.

This, however, would miss two important points of nuance. The first is that you cannot be an *especialista* unless you have committed to being a career soldier. Thus an *especialista* private can have an indefinite enlistment, something not possible in our Army.

The second nuance is that the soldier's specialty often falls outside his or her MOS. For example, an infantry NCO can also be an electrician. This results from the fact that these militaries need to internally source many functions our Army has grown used to outsourcing over the years such as electrical work, carpentry and duct work.

Soldiers who are not *especialistas* are normally short-term enlistees or conscripts. In some countries, these short-term enlistees have the ability to end their own contract, which is unheard of in our Army.

Another organizational difference is that most of these armies do not have the same concept of institutional training our Army does. Instead, the equivalent of initial-entry training (IET) and advanced individual training (AIT) occurs at the unit of assignment. While most units have a systemic approach to their IET equivalent, AIT equivalents are much more informal and can best be described as occurring through on-the-job training. Thus, soldiers' formal military training might be completed in as little as 60 days of IET before they assume a full-time role as members of a unit. There is also often no equivalent to ongoing professional education such as NCO academies.

This lack of formal institutional training poses several challenges when working to develop partner capacity. One of the biggest challenges, due to differing educational and socioeconomic conditions, is that the baseline capacity for individual soldiers and units is subject to incredible variance across the partner nation's military. Teams thus must have the ability to individually adapt the sophistication and complexity of the training, which is tailored to each unit, to keep them engaged. It also means that training designed to help professionalize the partner-nation military must be incorporated into other events and done in a way that does not offend the partners and cause them to disengage from training.

SATMO must thus tailor presentation and training methodologies for each country with its own unique nuances based on its history. In Guatemala, there is little public trust in the military after the 1960-1996 civil war – a war ripe with human-rights violations. Accordingly the military has more restrictions placed on it. For example, the Guatemalan military may only purchase repair parts from Guatemalan manufacturers and may never have a budget that projects further out than one year. The ability to spend that money is also heavily restricted by mandatory congressional notifications, making it exceedingly difficult to reallocate money to address emergent circumstances.

The military must also document every action it undertakes (personnel reassignments, trainings, operations, etc.), and this has led to a cumbersome process known as *oficios*. An *oficio* is more than just an operations order or equivalent. It is the authorization to conduct any event with the partner nation and is often granted only at general-officer level. All

Figure 2. U.S. SATMO team members train host-nation NCOs how to safely conduct basic and advanced driver's training courses. *(U.S. Army photo by MAJ Mike Kiser)*

partner training in Guatemala is authorized by the country's Chief of Defense, Guatemala's equivalent of the United States' Chairman of the Joint Chiefs of Staff. This means that training requests need to be submitted for coordination 30-45 days ahead of time to give the process time to work.

Each country will have its own nuances like this that detachment commanders must be aware of and work within local concerns.

After accounting for the various forms of friction inherent in the environment, the bottom line is that the desired capabilities for the partner nation outlined in the SCET or FMS case need to be developed in a sustainable manner. The detachment commander should ensure that training is designed to develop a cadre of qualified trainers and that the advising component of the mission is focused on improving the host-nation systems.

Success means that the team's presence is no longer required by the partner nation. This requires the detachment commander to value qualitative measures more so than in a traditional unit. It does not matter how many soldiers you train. It matters that you trained the right people who have the correct rank and position in the partner military to subsequently train their own replacements. This is the best way to develop interoperability and sustained capabilities for future coalition operations.

A great example of this is driver's training for motorized counternarcotics units in Guatemala. Initially the SATMO team focused on training the actual drivers; however, the team quickly noticed a trend in the partner nation's requests to train more and more drivers. Upon closer investigation, the team learned that the drivers were all short-term enlistees who could essentially walk off the job; soldiers leveraged their newly learned driving skills for commercial driving jobs, creating an immediate shortage of trained drivers in the unit.

The team adapted to this by creating a master driver's program focused on training career NCOs how to safely conduct basic and advanced driver's training courses. This placed the onus on training end-level users in the Guatemalan military while reducing the training audience to a smaller, more mature cadre. This allowed American advisers to focus on the quality of the training rather than quantitative targets.

Takeaway

An assignment to SATMO is inherently different from the typical experiences an officer acquires on a conventional track, but it is a valuable broadening assignment. It forces officers to work in an environment they might not normally be comfortable in and learn to operate with less supervision than they might be used to. It provides an experience in the joint and

interagency environment and helps officers better see how the embassy team supports a holistic whole-of-government approach in a situation where DoD is not the lead agency. It provides the opportunity for officers to serve their country and make a difference in ways they previously never imagined.

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ACRONYM QUICK-SCAN

AIT – advanced individual training
COCOM – combatant command
DoD – Department of Defense
FMS – foreign military sales
GCC – geographic combatant command
IET – initial-entry training
MiTT – military transition team
MOS – military-occupation specialty
NCO – noncommissioned officer
OSC – Office of Security Cooperation
RSO – regional security office
SATMO – Security Assistance Training Management Organization
SCET – security-cooperation education and training
SFAB – security-force-assistance brigade
TAFT – technical assistance, fielding and training
USASAC – U.S. Army Security Assistance Command

BOOK REVIEWS

Soviet Partisan Versus German Security Soldier by Alexander Hill; Oxford, England: Osprey Books; 1999; 80 pages; $22 paperback.

Partisan warfare and guerrilla warfare are now often thought of as – in an apt phrase – "the war of the flea," a form of political and attritional military struggle used by an inferior military-political force vs. superior conventional military forces. Many of us in the last 20 years have personal combat experience with that in Iraq, Afghanistan, the Horn of Africa and other spots where the world is confronting a virulent strain of militant Islam. Osprey Books' publication of Alexander Hill's book ***Soviet Partisan Versus German Security Soldier*** is of relevance to not only today's Armor leaders but a vast spectrum interested in operations against this type of elusive foe.

Hill has written extensively about partisan warfare, publishing in 2005 ***The War Behind the Eastern Front: Soviet Partisans in North West Russia 1941-1944***. The U.S. Army's Center of Military History has published three booklets on it: ***Guerrilla and Counterguerrilla Warfare in Russia During World War II***, ***Rear-Area Security in Russia*** and ***The Soviet Partisan Movement 1941-1944*** for those wanting in a more in-depth or different view of it. Hill's scope of work here is on several discrete operations in the Leningrad-Kalinin area, while placing these specific actions within the context of the greater partisan war on the Eastern Front.

Specifically, Hill drills down on three operations: Kholm in January 1942, Iasski in February 1942 and a German anti-partisan security sweep called Operation Spring Clean in April 1943. The three chosen operations are different enough to both keep the reader's interest and for different lessons to be drawn due to these differences. Spring Clean is perhaps the easiest to put in any context of the overall war, as it could be interpreted as German preparation to secure their rear areas before the Kursk offensive, as well as endeavoring to regain the initiative after the disaster of Stalingrad and the winter of 1942-1943 Soviet Winter Offensive.

Guerrilla warfare might happen spontaneously, but for it to be successful, some structure is needed. Hill neatly dissects and talks about that need for structure in the chapter on the opposing sides. He lays out the contrasts and similarities of the opposing sides in areas such as recruitment, training, doctrine, command-and-control (C2) and tactics. Stalin, before the massive industrialization effort took off, had earlier extensively prepared the countryside for partisan warfare, but the purges of the late 1930s removed and eliminated many of those involved with that earlier framework; when the Germans invaded in Operation Barbarossa, there was no real infrastructure left to call upon.

Early partisan efforts were structured either around Communist Party members or units that had been cut off by the German blitzkrieg. We saw in Iraq little evidence of cut-off units turning to either partisan warfare or banditry, but likewise, the Baathist Party members who had everything to lose – much like the Communist Party members in Hill's work – helped start the initial gestation of resistance to Operation Iraqi Freedom (OIF). With both Barbarossa and OIF, the lack of enough boots on the ground produced large swaths of unsecured areas and huge amounts of arms for such partisan movements to begin. We failed to heed the lessons from the German invasion of Russia.

In both OIF and Operation Barbarossa, a series of overly optimistic assumptions were done in terms of considering rear areas and lines of communication security. Within several months, the assumptions for both operations proved fatally erroneous. As Hill shows, much of the German effort to redress this in Russia was both *ad hoc* and constrained by a lack of able-bodied forces who had enough firepower and good communications proper for the heavily forested areas in which the Germans and Russians clashed.

It's easy to dismiss the Osprey books as fluff at times, but Hill has done yeoman work in distilling the key facts to give one a good sense of operations in this theatre. Hill's use of good color maps with a map key done in terms of a timeline enables the reader to easily grasp the operational situation. Hill's distillation included:

- The Kholm segment of the book would be considered within the greater initial efforts of the first Soviet winter offensive of 1941-1942. Unlike many of the fights we encounter, the fight for Kholm was to be a coordinated effort by partisans led by Soviet military officers and reinforced by regular Army units. Kholm was a key road junction, but the heavy snows of that winter hindered both sides. Worse for the Soviet partisans, poor C2 and staff work meant that their effort to capture the town failed, despite seizing much of the town.

- Operation Spring Clean is more akin to what we currently do in terms of using intelligence, surveillance and reconnaissance – and our mobility – to try and hermetically seal off such forces. Spring Clean was a planned operation that, with better commo and the use of Fiesler-Storch planes for battlefield reporting, enabled the Germans to clean out this partisan base.

The German tactical doctrine of immediately counterattacking was employed at both Kholm and Iasski to help restore the situation, though less so at Iasski. What we see in these northern case studies is that German operational security suffered because of the severe weather, not unlike how American units in World War II and somewhat today are less robust at nighttime. German security units were often equipped with vintage leftover

weapons from World War I, such as the water-cooled MG08/15 light machinegun that would freeze in the extreme climate of northern Russia.

German forces also suffered from language problems, recruiting from Soviet prisoners of war, local collaborators who often had personal scores to settle, Cossack and Islamic cavalry units, and older police battalions. (See Westermann's *Hitler's Police Battalions: Enforcing Racial War in the East*.) For us with our too-many Blue-on-Green incidents – primarily in Afghanistan but some in Iraq – we are always running a security risk to not just our forces but with our efforts to try and win the hearts and minds of the local population. The Germans were plagued as well with informers.

Overall the book is not just relevant but quite a good read – in part due to the three widely different combat actions that Hill presents. The book is nicely illustrated with great photographs and high-quality maps that enable a quick visual understanding of the battlespace. My one question, though, is the use of the painting *Rest After the Battle* by Yuri Mikhailovich Neprintsev. As presented, it is allegedly partisans in the painting, but one clearly sees T34/85 tanks in the background. Moreover, the soldiers seem to be submachine-gun riders of these same tanks.

I daresay I was unsure how I fully felt about Hill's work until I sat down and contemplated it with the writing of this review. It is both a keeper and most likely one that will be used as a quick-reference source and, as such, is recommended.

DR. (LTC) ROBERT G. SMITH
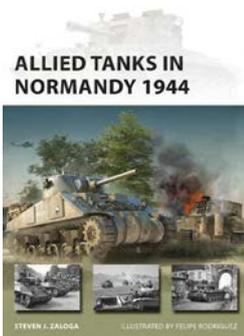
Allied Tanks in Normandy 1944 by Steven J. Zaloga; New York, New York: Osprey Publishing; 2021; 46 pages including photographs, index; $17.14.

Steven Zaloga's latest work continues to enhance our knowledge of World War II armored operations. Concentrating on the Normandy Campaign, Zaloga presents a succinct discussion of British, Canadian, Polish and American armored organization and employment against German forces from June to September 1944. The tug-of-war struggle that followed the Allies' successful landing in Normandy is presented in a clear and easy-to-follow sequence of events.

Beginning with the Allies' command structure, the author explains the initial objectives for the campaign. The British, Canadian and Polish contingent aimed at the French city of Caen, while the Americans intended to seize the port of Cherbourg. The British force was stymied by the swift German reaction to their moves in terrain that favored the employment of armor. At the same time, the Americans were held in place by a determined German defense that skillfully used the hedgerow terrain to halt their movement to the vital port.

The organization of British and American armored units is presented in an orderly fashion. The British armored regiment was equivalent to the American medium-tank battalion. The British fielded three squadrons to each regiment. Each squadron contained four troops. The M4 Sherman was the backbone of both Allied armored units. The British regiment contained 61 Shermans, while the Americans placed 59 in a battalion. U.S. armored forces included separate tank battalions assigned to each corps and usually dispersed to infantry units that lacked organic tank battalions. These various force structures are described by Zaloga, along with applicable charts displaying American, British and German tank losses.

Given the ever-changing conduct of the campaign, the Allies had to continually deal with the unexpected. Since German armor often outranged and penetrated Allied armor, the situation required an effective countermeasure. As the author explains, the British Sherman Firefly, which mounted a 76mm main gun, was an effective method in dealing with the German armored threat. In the American

sector, the hedgerow that divided the fields permitted the Germans to establish strong lines of resistance. Improvisation saved the day as dismantled beach obstacles created tank-mounted cutters to penetrate the banks of the hedgerows. Zaloga includes a battle-analysis section that provides more information on the importance of artillery, armor and infantry coordination.

Zaloga employs charts throughout the book displaying a variety of subjects. These charts are keyed to the subject under discussion in a particular section. For example, the table displaying the ever-dwindling density of German armored forces per mile of frontage gives one an appreciation of the destructive power the Allies brought upon their enemy. Also, the graph of British offensive operations to seize Caen will be of assistance in guiding armor leaders to further in-depth reading on a particular operation.

This is a well-written, profusely illustrated review of the Normandy Campaign. While not a comprehensive tactical analysis of the various actions, it a useful reference that will supplement other detailed works on a particular engagement. Also, armored leaders will gain a better appreciation for the value of the combined-arms team, the role of improvisation in battle and the importance of battlefield feedback to improve existing equipment.

COL (R) D.J. JUDGE

The German Way of War: A Lesson in Tactical Management by Jaap Jan Brouwer; South Yorkshire, United Kingdom: Pen and Sword Books Unlimited; 2021; 229 pages, including photographs, appendices and index; $42.95 (hardcover).
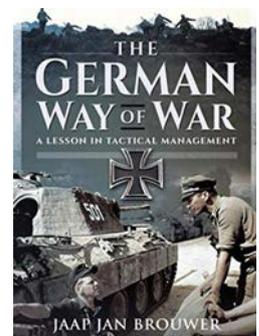
The author, a management consultant by trade, argues convincingly that primarily due to the culture of

auftragstaktik (mission-type tactics), the German army consistently outperformed its British and American counterparts at the tactical level during World War II. The author supports his position by comparing German, British and American units using a business-model framework called the "7-S" model. This model forms the basis of the chapters exploring aspects of the different armies as learning organizations; their doctrinal command concepts, structures, leadership, teams and training; and shared values and morale. While at times heavily exalting the Germans and exceedingly disparaging toward the Allies in general, there are valuable lessons to be taken from his study.

Any student of World War II will confess to German tactical ability during the war. Strategically and operationally biting off more than they could effectively handle, German tactical prowess could not overcome the burden of Allied materiel once mobilized on two fronts against her. However, the culture and tradition imbued within the Wehrmacht proved to be effective and resilient, allowing Germany to continue retrograde operations and limited counterattacks, forestalling the inevitable end of the war without collapsing. This resilient organizational cultural fabric is the very essence of what the author explains throughout his work, the concept of *auftragstaktik*.

Characterizing a learning organization, the Prussian army started serious reform after being beaten by Napoleon at Jena-Auerstadt. It continued refinement through the 1800s under Helmuth von Moltke through the wars of German unification. Continuing to extract lessons from both their victories and losses, the author explains how the Germans embraced the inevitable chaos of the battlefield and did not try to impose control over it as other armies sought to do. By empowering trained subordinates within a flexibly organized army, they could adapt and seize fleeting moments of opportunity on the battlefield without waiting for orders from a centralized command authority.

Contrastingly he points out that the British and American armies were resistant in changing their hierarchical organizational structures, mainly because they were past victors. The British, steeped in their colonial empire policing structure and mentality, embraced a culture of aristocracy and rigidity. Surprisingly, even though the Americans studied and exalted German methods, they seemingly could not culturally adopt them successfully. The author is clear that recognition and embrasure of flexible, empowered organizational structures that could seize opportunities or forestall reverses through quick actions, guided by a clear mission, enabled German tactical successes. The lack of the same plagued the Allies.

A fascinating dive into the organizational cultures of these three armies, the author encompasses many divergent concepts under the framework of *aufrtragstaktik*. In one chapter, he delves into the Germans' embrace of military organizations' human and psychological dimensions. This approach helped them recruit and select the right personnel to build cohesive, effective organizations underscored by competence and trust. He contrasts that with various deficiencies in British and American recruitment, training and organization.

Embracing the combined-arms concept early, the Germans developed a flexible organizational structure that permitted dynamic task-organization of various capabilities when and where needed from available manpower. This greatly assisted their regenerative power later in the war, when remnants of units were forced together into viable and effective units due to losses and shortages. As with other comparisons throughout the book, the Germans are again clearly set forth as a shining example of building a competent, effective and efficient military organization, while the Allies were continually able to overcome repeated deficiencies in these same areas with materiel might.

This book is a quick read at just over 200 pages, broken into nine chapters, and an appendix supported by many historical examples and more than 60 references to support the research. Although the book exalts German organizational culture and performance over their British and American counterparts to a fault, there is much merit to the work once you look past the author's apparent bias. As *auftragstaktik* is the cornerstone of our mission-command philosophy, those looking for more context on the concept should take the time to read this book.

LTC BILL AULT
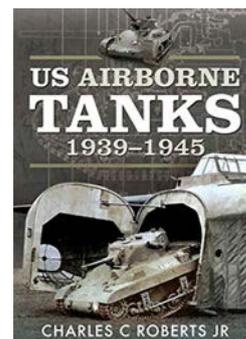
U.S. Airborne Tanks 1939-1945 by Charles C. Roberts Jr.; Havertown, PA: Frontline Books; 2021; 208 pages with photographs, diagrams, maps, appendix; $32.95.

Since man first took to air in hot-air balloons, the desire to place a large mass of troops behind enemy lines has intrigued military thinkers. The advent of the airplane allowed this concept to become reality through the creation of a parachute-delivered force. Experiments on the delivery and employment of such a force began in the 1930s within Russia. Germany and Japan followed the Russian developmental process. Each of these nations quickly realized that airborne employment would be foolish if the force did not possess significant firepower in the form of an armored vehicle. As war approached, research and development efforts sought a tank that could be air-delivered in support of airborne forces.

Charles C. Roberts Jr., a noted collector of military vehicles, reviews the creation and employment of an armored vehicle to support an airborne force during World War II. Despite the fact that the Russians investigated placing a tank in an available cargo aircraft, they abandoned the effort after several false starts. Roberts reviews their efforts, along with those of the Germans and Japanese prior to the start of World War II. Using an impressive collection of period photographs and diagrams, he explores the trials and tribulations experienced by these

three nations in searching for a suitable armored vehicle and means of delivery.

As war began, Great Britain also developed an airborne force and sought a delivery means for such a vehicle. Several delegations were dispatched from England to the United States seeking an answer to the problem. Roberts follows the discussion held between the Allies as both sides attempt to find the ideal system to support the airborne forces. These talks led to the creation of a design requirement.

The author presents several design proposals for both the tank and an appropriate means of transportation using photographs and text. Roberts describes the British development of a Vickers-Armstrong-built light tank, christened Tetrarch. The vehicle mounted a 40mm main gun and a co-axial machinegun. To transport the tank, the British constructed the large Hamilcar glider. They were employed during the invasion of Normandy by 6th British Airborne Division.

The tanks were landed by glider, where their appearance initially caused the Germans to cancel a counterattack at a key moment in the battle. The tanks, however, did not perform well, as several were lost in accidents, and those that did see action proved to be inferior in firepower to the German armored vehicles. A few days after the beginning of the operation, the tanks were removed from direct engagement with German armor and used only to provide fire support.

While the British were employing the Tetrarch, the Americans fielded the M22 light tank. Excerpts from the vehicle's technical manual, along with details on the creation of a tank-gunnery course, are explained by Roberts. The U.S. Army created a company, then a battalion, to train on these vehicles. Powered by a Lycoming aircraft engine to save weight, the eight-ton tank had an impressive top speed of 40 mph and a cross-country speed of 30 mph. The crew consisted of a commander/loader, driver and gunner for the 37mm main gun. Various glider designs were also tested without success.

Once again, the author provides detailed photos and explanations on the various transportation means attempted, engine design, weapon systems and training of the battalion as it prepared for deployment. Completing glider training in 1943, the newly designated 151st Airborne Tank Battalion participated in large airborne maneuvers. Roberts details the impressive results that the battalion achieved in these field-training exercises. Despite their achievements, the Army believed the men of the battalion would better serve the war effort as replacements for already fielded European-based armored units. When 151st was disbanded, the Army provided more than 260 M22 tanks to the British.

The British designated the M22 as "Locust" while modifying the 37mm main gun. The author clearly lays out details on the "Little John" adapter for the main gun. Given the availability of the Hamilcar glider to transport them, training was conducted on employment methods. The tank engine was notorious for stalling. To counter this tendency, the crew started the engine once the glider was cut free from the tow plane. Roberts further explains that the exhaust fumes were funneled out a port on the side of the glider and how the cross-lashings securing the tank to the glider floor was released by the crew upon landing.

To assist in crossing the Rhine, the British employed the largest airborne force in history. Operation Varsity saw the 6th British Airborne and American 17th Airborne Divisions occupying drop zones in the vicinity of the German city of Wesel. Accompanying the airborne forces were eight M22 Locust tanks. They provided direct-fire support to the airborne troops but were systematically destroyed by superior German firepower. The vehicles were never again employed by the Allies for the rest of the war.

Roberts presents a detailed look at the development of a tank to support airborne forces. The photographs, along with technical manual extracts and details on training, are impressively presented. As the quest for a suitable armored vehicle to support airborne and air-mobile forces continues, this book presents many historical insights that

will aid in satisfying this requirement. This is a work worthy of review and comment by combined-arms leaders.

COL (R) D.J. JUDGE

Allied Armour 1939-1945: British and American Tanks at War by Anthony Tucker-Jones; South Yorkshire, United Kingdom: Pen and Sword Military; 2020; 232 pages, $34.95 hard cover.
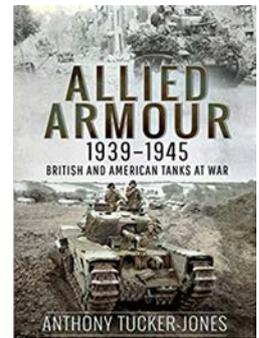
Readers searching for an exhaustive study of American and British tanks in World War II need look no further than ***Allied Armour*** by author and military historian Anthony Tucker-Jones. Rather than examine tanks by type or model, Jones discusses the employment, performance and improvements of armored vehicles through the major campaigns of the African, European and Pacific theaters of war. Tucker-Jones is a prolific writer with more than 40 previous publications to his credit and is clearly an expert in his field of study.

Be forewarned, ***Allied Armour*** is not a typical "coffee table" book full of glossy photos but scant on actual information. This is a book densely packed with detail and is prose-laden, with facts and figures useful to the tank researcher or perhaps historical wargaming enthusiast. Tucker-Jones' style of writing makes for a difficult reading; restated, this is not a book to be consumed at a single sitting.

The absence of even a single map further challenges the reader; I found myself continually searching the Internet for operational- and tactical-level maps to place the writing into a readily understandable context.

Interspersed throughout the pages are small excerpts from soldiers and observers sharing their personal experience with tank warfare. These all-too-infrequent additions add a much-needed human element to the book. Equally helpful are the three

companion appendices listing Allied armored divisions as well as describing individual U.K. and U.S. armored vehicles.

Perhaps the book's most important point may be found in the final chapter titled "Industrial Muscle." As the "Arsenal of Democracy," the United States provided dozens of other Allied nations with all manner of military equipment throughout World War II. For example, the Soviet Union alone received some 425,000 vehicles and aircraft between 1941-1945. By comparison, I went to Iraq in 2003 without a full basic load of ammunition for my aging M16A2 rifle and wearing a Cold-War-era flak vest in lieu of modern body armor. With the U.S. military's shift from counterinsurgency operations to a more appropriate focus on large-scale ground-combat operations, professional study must include the materiel production base required to sustain such war.

LTC CHRISTOPHER J. HEATHERLY
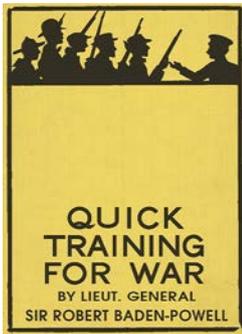
Quick Training for War by LTG Sir Robert Baden-Powell; Oxford, United Kingdom: Osprey Publishing; 2018 (reprint); 128 pages; $14 hard cover.

When the United Kingdom and its empire went to war in 1914, the regular British Army was small, and the forces of the empire were dispersed. In contrast to the imperial wars of the 19th Century, Britain experienced a surge of patriotic young men seeking to join the Army in August 1914, who wished to do their bit for "king and country" and feared missing out on a short war.

Responding to the need to prepare the young men who would be leaving civilian life and serving as junior leaders, Robert Baden-Powell wrote a short primer on basic tactics and leadership in late summer 1914 entitled ***Quick Training for War****.* Baden-Powell had previously trained a generation of young men in general outdoor skills through scouting and possessed more

insights on how to stand up new forces based on his work creating a constabulary in South Africa during the Second Boer War.

Baden-Powell's short primer is of interest – both as a reminder of some of the timeless essentials of small-unit leadership and tactics in the army of a liberal society, and for its insights for modern readers of what Baden-Powell imagined service in wartime would demand of new officers. At one point, the reader is reminded about the importance of confidence and "playing the game" to lead and motivate soldiers. In another passage, Baden-Powell remarks how no army of volunteers would want its lives sacrificed pointlessly. Both passages are dark reminders to the modern reader of the fate of Britain's new forces, as more than 19,000 soldiers were killed on the first day of the Somme in 1916.

Baden-Powell's vision of war that stressed lessons and techniques from his imperial service increasingly contrasted with the reality of the Western Front of trenches, railroads, massed artillery and eventually the tanks, airplanes and combined-arms tactics that marked the last 100 days of British, French and American operations in 1918.

Despite the grinding industrial nature of war, after the trenches on the Western Front were fully established, there was still need within the British army for small units to conduct nightly raids and reconnaissance, as well as to maintain and improve defenses in the dark. This need in turn demanded skilled and savvy leaders who understood the value of using terrain and who could lead and motivate their soldiers under difficult conditions.

Baden-Powell defined the four fundamentals of soldiering as courage, common sense, cunning and cheerfulness, and his manual provided young leaders with valuable hints on how to succeed across all these areas. In addition, the British soldiers who fought not just in France and Belgium but in the more mobile campaigns in Mesopotamia, the Levant and Africa would have benefitted from the useful sections on maintaining hygiene and health in austere conditions. World

War I was the last war for more than a century where most deaths came from disease rather than combat, and Baden-Powell understood the need for young officers to protect their soldiers' lives and health.

Baden-Powell also shows how the fundamental skills of moving stealthily in groups or individually may be taught at low cost and with no technology. Baden-Powell's advice on using little blocks of time to build or reinforce fundamental skills in an engaging way with little cost or equipment is still a vital way leaders can create cohesion and confidence.

Similarly, Baden-Powell's section on cheerfulness resembles in some ways the concept of resilience that modern armies, schools and teams seek to inculcate in their members.

With his book, Baden-Powell fundamentally sought to mine his imperial experiences to provide young men who had little to no experience in campaigning with a pocket-sized guide that would better help them to survive, fight and win. Although World War I was vastly different in scope, scale and suffering than the wars of Baden-Powell's experience, he was still able to capture some key lessons for his readers who would soon be charged with fighting in a war that demanded a mastery of the fundamentals as the price of survival and eventually victory. For today's reader, this manual from a century ago can serve as a thought-provoking example of the possibilities and limits of translating fundamental soldier skills from one type of war to another.

With the wars of the 21st Century increasing in violence and complexity, the need to both adapt quickly to change and to master the basics remains the fundamental mandate of Army leadership. Baden-Powell's short book is a reminder that there are useful lessons from the last two decades of operations that leaders will still need to apply in any future large-scale conflict.

LTC ANDY WHITFORD

Germany's Western Front: Translations from the German Official

History of the Great War, 1914, Part 1 by Mark Humphries and John Maker, editors; Ontario, Canada: Wilfrid Laurier University Press; 2013; 580 pages; $49.99 paperback.
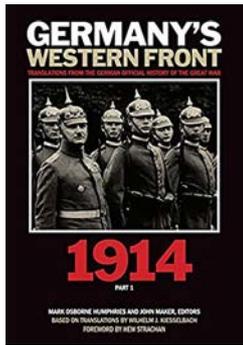
At first glance, house-hunting and going to war would seem to have little in common with each other, that they are mutually exclusive intellectual endeavors. In actuality, the two concepts share a great deal in common. Both are rooted in manifold assumptions, hopeful planning and wishing away certain aspects of the execution phase, and both are saddled with manifold and unforeseen problems because one did not subject either endeavor to a rigorous cross-examination.

The official German history of the opening campaign up to the Battle of the Marne in World War I is an excellent case in point of exactly this in retrospect.

Military dictums, like clichés, always contain at least some kernel of truth -- none more obvious and yet overlooked than "no plan survives first contact with the enemy." (In one sense, however, if no plan survives contact, it's arguable the plan was really a very good one.) What this history shows, though, is that a number of underlying assumptions were wildly inaccurate. The German shock-and-awe campaign against civilians in both Belgium and France seems to have boomeranged on them and would do so even more in the court of world opinion.

There is a bit of a perfidious air and contempt throughout this volume for the British Expeditionary Force (BEF). The assumption that the British army would cut and run after Mons became a painfully apparent false assumption.

One of the lessons obviously unlearned by Helmuth von Moltke and others after their wars of unification – and particularly those at Comigrates – is leadership on the spot. Their eye on the battlespace, taking the pulse of the fight, was critical to success. Instead, the General Staff thought that process, efficient orders and well-developed plans had become enough that the superior German army would win by virtue of its martial superiority and elan.

We hear all too often this pithy advice as junior leaders: "Plan your work and work your plan." Here the plan was to invade France and advance to victory! It seems to have escaped the notice of those in command that command-and-control issues were going to be exacerbated by some unknown level of Clauswitizian friction due to the size of the German armies, which dwarfed the Prussian army of 1866 and 1870. Worse, logistics seemed to have been a bit overlooked since the timetable meant that victory would be achieved by Day X, ergo "we" need not think beyond the published timetable.

In Barbara Tuchman's ***August 1914***, one reads of the great railroad timetable for the German army to go to war, but no one seemed to consider what effect such a deep strike would have on men doing 50-kilometer road-marches in brutal August heat or the subsequent demands of needing to re-shoe horses. Friction seems to have been simply ignored.

Contrast the German army commanders on the Western Front with the duo of Grant and Sherman in 1864 in the American Civil War. Both of these commanders grasped the essence and importance of logistics. Neither Grant nor Sherman required that damning quality of seeking adulation and the spotlight.

That quest for the victor's laurel crown would become quite the issue for the German command structure in 1914. Army commanders were competing against one another and not working toward the common goal of victory. Alexander von Kluck was perhaps the greatest offender, but it is hard to single out which commander was most egregious in not being a team player.

Ironically, this same type of almost-cavalier attention to the bigger picture and the overarching campaign would be repeated in Operation Barbarossa in Summer 1941. Karl von Bulow often appeared to not have good situational awareness.

In fact, many of the exchanges between the Oberste Heeresleitung (OHL) (the German High Command) and among commanders almost seem petulant in nature. Moreover, some of the thinking as shown in the book is almost incomprehensible – such as "As communications with the OHL were difficult, it was thought trying to contact them [First Army] before any final degree of clarity had been achieved would be a waste of time."

It almost makes you feel sorry for von Moltke when he was given a late radio message sent from First Army to Second and Third Armies (but not OHL) that stated they had crossed the Marne at Chateau Thierry. The message didn't say what forces had crossed, but that was really a minor issue. His orders were to follow Second Army in echelon but instead chose a course of action that showed he "had acted counter to not only the literal but also to the implied sense of his orders."

Von Moltke was lethargic, waiting for information from below and not proactively seeking it. History showed that the danger von Moltke foresaw (and tried to alleviate by simply issuing orders; he didn't follow up on the execution) did come indeed to pass. The Miracle of the Marne was indeed a miracle, but an easily foreseeable one, with this volume ending just before the French Army and the BEF's Marne offensive.

Getting the view from the other side of the hill *a la* Basil Liddell Hart is always useful, but this fresh look at the opening moves of 1914 through German eyes is both riveting and difficult to put down. The editors enhanced the official German history by their knowledgeable commentary and use of supplemental archival material. ***1914 Part 1*** is recommended reading for anyone with an interest in this period of the opening moves of World War I.

DR. (LTC) ROBERT G. SMITH

Days of Fury: Ghost Troop and the
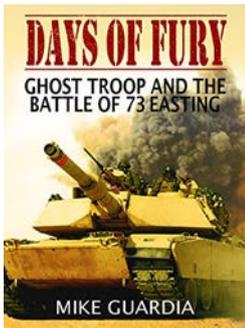
Battle of 73 Easting by Mike Guardia; Maple Grove, MN: Magnum Books; 2021; 217 pages with photographs and sketch map; $14.95.

Former Armor officer Mike Guardia's ***Days of Fury: Ghost Troop and the Battle of 73 Easting*** is the follow-on to his ***Fires of Babylon: Eagle Troop and the Battle of 73 Easting***, published in 2015. The Gulf War's Battle of 73 Easting (a Universal Traverse Mercator north-south grid line) was the 20th Century's last great tank battle. The 2nd Armored Cavalry Regiment (ACR), VII Corps' covering force, destroyed two brigades of the Iraqis' Republican Guard Tawakalna Division in less than a day. West Point classmates then-CPT H.R. McMaster and then-CPT Joe Sartiano commanded Eagle and Ghost Troops, the lead units of 2nd ACR's 2nd Squadron.

Guardia adds historical context to this book by describing the abysmal state of readiness of the Army in the 1970s after the Vietnam War and how it became the world's most technologically lethal force by the time it fought in the Gulf War in 1991. The United States responded to Iraq's invasion of Kuwait Aug. 2, 1991, by deploying XVIII Airborne Corps as a deterrent against an Iraqi incursion into Saudi Arabia. When Saddam Hussein failed to respond to diplomatic pressure to withdraw from Kuwait, on Nov. 9 President George H.W. Bush ordered the deployment from Europe of the armor/mechanized heavy VII Corps, with its three divisions, and 2nd ACR.

The 2nd ACR faced the monumental task of deploying 4,000 troopers and equipment to Saudi Arabia while simultaneously planning and training for a radical change in mission. In Europe since 1958, 2nd ACR's mission was to conduct reconnaissance-and-security operations along the West/East German border. Units deploying from Europe had to break free of Cold War thinking, which was to defend relatively restricted European terrain, and

adapt to conducting offensive operations on open, featureless desert terrain.

Guardia's interviews of Ghost's troopers, their diaries and personal photographs ably reveal the human side of a small unit's preparation for war and its troopers' reactions to the physical and psychological traumas of combat. His narration of the ebb and flow of Ghost Troop's fight at 73 Easting is compelling. This book, however, will disappoint Armor and Cavalry soldiers seeking a detailed battle analysis of Ghost Troop's actions. Inexplicably, Guardia devotes only 31 pages to the actual battle. Without examination of official documents such as staff journals, after-action reports and message-traffic transcripts, the book is an incomplete appraisal of Ghost Troop's performance.

Two months after deploying, 2nd ACR crossed into Iraq Feb. 23, initially encountering ineffective opposition from the poorly trained and equipped frontline Iraqi units previously pummeled by incessant Allied air strikes. After those units disintegrated, the more formidable Tawakalna Division massed Feb. 26 to counterattack the advancing VII Corps.

When blowing sand, fog and stiffening enemy opposition limited Sartiano's situational awareness, the war became a platoon leader's fight. LT Paul Hains' scout platoon and Eagle Troop's 1st Platoon destroyed at least five T-72 tanks. LT Andy Kilgore's tank platoon, adjacent to LT Keith Garwick's scout platoon, became VII Corps' most forward units. Kilgore's tank platoon destroyed more than a dozen T-72s and *boyevaya mashina pekhoty* (BMPs) (a Soviet-made amphibious tracked infantry fighting vehicle) and killed dozens of dismounts.

By 7 p.m. Feb. 26, Ghost consolidated on 73 Easting. After three more hours of fighting, Ghost Troop completed its mission at 10 p.m.

Despite its flaws, battalion and squadron commanders, especially those facing an imminent combat deployment, should include this book in their leader-development programs. It is a reminder that small units win large-scale combat operations. Although not a

formal battle analysis, ***Days of Fury*** reveals how a well-trained unit, led by competent and mentally agile leaders, can adapt to a major change to its mission.

Ghost Troop's actions at 73 Easting is a case study of today's mission-command doctrine. Its victory resulted from its leaders' instinctive application of the mission-command principles of competence, disciplined initiative, shared understanding and mutual trust.

LTC (R) LEE F. KICHEN

Germany's Western Front 1915: Translations from the German Official History of the Great War, Part 2 by Mark Humphries and John Maker, editors; Ontario, Canada: Wilfrid Laurier University Press; 2010; 462 pages illustrated; $48.95 paperback.
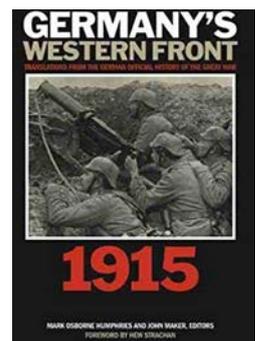
1915. What does the average student or reader of World War I history think about when they think of 1915?

Most people will probably think of Gallipoli or the Dardanelles Campaign – those always readily come to mind. Maybe the Dogger Bank naval fight might surface in your mind. Or you might recall the series of czarist military disasters in Poland. However, for most people, 1915 is at best murky and fuzzy. The year is almost treated as if the war sort of went into hiatus until Verdun and the Somme in 1916.

Let's just say after reading the official German history as annotated by the editors Humphries and Maker, your view might begin to perceptively alter in how you understand the year 1915. I can readily say up front, my view changed and changed to such a degree that I will look for more on this neglected period.

The theme that inescapably runs throughout ***1915*** is one of command and strategy. Who is really in command in a sense seems to be an issue;

although GEN Erich von Falkenhayn is nominally in control, commanders like Rupprecht, crown prince of Bavaria, have a direct appeal to the Kaiser. The Kaiser is noted as the Supreme War Lord, and having said that, that's all that needs to be said, as he's relegated to, at best infrequent, mentions of little consequence.

We also begin to see more mention of what the High Seas Fleet offers and what its role in the war was, other than a bargaining chip perhaps once the war was concluded.

Another thrust, although ex post facto, is an underlying realization that the war was not being fought as a coherent effort. If you are the army, you begin to question why so much treasure and resources were spent on the High Seas Fleet when its operational usefulness by the end of 1915 was such that "[g]iven the overall situation at present, the deep-sea fleet is of increased significance and is an important political instrument in the hands of the Kaiser and thus an adverse battle at sea would have particularly grave consequences." It is easy to trace in an almost linear sense how Adolf Hitler consolidated power over all aspect of military planning because the memory of that lack of coherent and comprehensive inclusion of all military elements was still a painful memory from World War I.

Worse, what the real war aims are now seem to surface in the *1915* volume, other than simply that of "victory." One is reminded of the Global War on Terrorism (GWOT) era. Even as a combat leader in it and as a joint historian on the Joint Chiefs of Staff, one could argue we never quite pinned down with any finality and fidelity what GWOT really was intended to accomplish as its endstate. Therein lies so much of the value of *1915*, as we see the German High Command – which is really the army – fighting a land war without having a coherent military and political strategy. They never, if you will, got to spend a dime or reichsmark because there was not much thought given to DIME [diplomacy, information, military and economics] in any sense, other than hoping and trying to stir up a jihad in the British Empire's colonial possessions

to serve as a distraction.

Throughout the volume, one gets a growing sense of the awareness that the German High Command was becoming more and more unenthused about its erstwhile allies. The Ottomans presented a special problem; the Austrians-Hungarians failed to knock Serbia out of the war; there were no rail lines to supply Istanbul that the Germans could use. The Bulgarians in modern parlance would receive an up check, but the Austria-Hungarian forces, with a severe lack of any strategic direction and leadership, was showing signs of being an albatross around the German neck.

Perhaps a greater albatross for the Germans and Falkenhayn, who had by now replaced GEN Helmuth von Moltke after Moltke failed at the Marne, was a drift in where did Germany's center of gravity lie – was it the Eastern Front or was it the Western Front? The book traces the growing rift of how the war should be fought as well as the enmity and deep personal rift between the Easterners, as championed by GEN Paul von Hindenburg and GEN Erich Ludendorff, and the Westerners, led by Falkenhayn.

As the book notes at its opening, despite some impressive victories and the occupation of much of France's resources, industrial heartland and all but a sliver of Belgium: "At the beginning of 1915, the war in the East was not going well for Germany or Austria-Hungary. ... By [the] new year, Germany was faced with war on two European fronts, a struggling ally in the east and an ominous situation in the Balkans, all of which threatened to turn the tide against the Central Powers." So for those who thought the Third Reich paid too much attention to the Balkans, one can better begin to understand its obsession with that flank with this type of anecdotal antecedent, for it was a pressing reality for much of each war.

What we also come across is something seldom conveyed in most of the other histories of World War I: that the Germans even in 1915 were reaching the threshold of a manpower crisis. We read time and time again of

just enough of a German reaction force, arriving like the proverbial cavalry in a John Ford Western, to seal a breakthrough or serve as the spearhead of a counterattack per German doctrine to seize any lost defensive positions. Repeatedly we read about the crisis caused by seemingly incessant French attacks, even if poorly executed by German estimations, that were becoming a psychosis of sorts for the German High Command, propelled by the fear of what would happen on the Western Front when Horatio Kitchener's (British Secretary of State for War) new British Expeditionary Force armies would appear.

Germany's Western Front 1915 was more than a pleasant surprise to this reader and military historian. My overall awareness of the extent and depth of the near despair for the Germans was deeply increased and broadened by this narrative of the ongoing crisis of 1915 as seen through German eyes. Even if one lacks the specific background to fully understand the military operations, the underlying political and issues as set forth in ***Germany's Western Front 1915*** of military strategy vs. operational aims, coupled with a political strategy that often veered between moribund and flailing, is simply too interesting to ignore.

DR. (LTC) ROBERT G. SMITH

From the Realm of a Dying Sun. Volume I: IV SS-Panzerkorps and the Battles for Warsaw, July-November 1944 by Douglas E. Nash Sr.; Havertown, PA: Casemate Publishers; 2020; 552 pages illustrated, with appendices and endnotes; $25.71 hardcover.
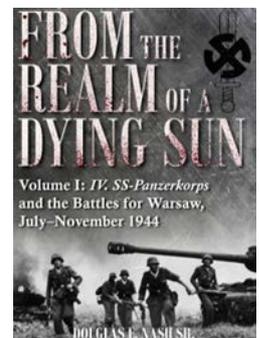
Seldom in my time as a student of the Ost Front have I encountered a book that was so grim and gritty, yet so engrossing at the tactical, operational and strategic levels, as ***Realm of a Dying Sun***. The impression it will create will be indelible and different than

other books of its scope due to the enhanced perspective from the other side of the hill, giving the narrative the critical mental sinews to make the story whole. This story is one unimaginable to us as leaders: a war with little chance of victory, with diminishing resources, yet where we are still compelled to do our duty.

The volume starts out with a basic history of how the Panzer Corps was birthed. Frankly, I would be surprised if you don't find it fascinating from both the political and administrative processes. IV SS Panzer was to be another corps, but when it was stood up, all its cadre and leadership went with the other SS corps – hardly an auspicious birth for such a large unit. Add in the political infighting between the Wehrmacht and the Waffen SS even before the events of July 20, 1944 [an attempt to assassinate Adolf Hitler and initiate Operation Valkyrie], and you really see the volatile mix the author so neatly dissects and lays out here.

In terms of sheer history, the volume fills in what I have always seen as a poorly chronicled period of the war on the Eastern Front: the fight in Poland after the destruction of Army Group Centre. Is it because this is a period that doesn't sell well in the West? Is it because there were no sweeping operational victories for the Wehrmacht anymore? Instead this volume focuses on a grinding battle of attrition as the Wehrmacht and its IV SS Panzer counterparts are fighting a two-front war against the victorious Soviet Army fresh off the destruction of Army Group Centre and the Polish Home Army's uprising in Warsaw.

There is always a point of diminishing returns in warfare, but what do you do when your last recourse is to cannibalize and poach from other services – robbing Peter to pay Paul? And the quality of what you are extracting from Peter to pay Paul is problematic? This became an issue for IV SS Panzer because part of its replacement pipeline were surplus or superfluous Luftwaffe personnel or infantry soldiers who were "90 day wonders" while retaining their rank. Would you want as your new armor-company commander an officer inflicted upon you by a

replacement system who was heretofore solely a public-affairs officer? That was the reality of the German manpower crisis in 1944.

Where the book shines is in bringing to light the months-long grinding struggle in front of Warsaw and much of the Vistula River front. Many World War II histories gloss over this period, as it is hard to easily summarize, nor were there any epic named battles. Instead, as this volume shows, it was a period where the Wehrmacht's and IV SS Panzer Corps' tactical acumen ruled for the most part their battlespace, often by desperate improvisation. It becomes mind-numbing reading of the incredible battle loss of wearers of the Knight Cross (think of it as a near parallel to the American Medal of Honor with exceptions), who were the key and near-irreplaceable tactical leaders at the company and battalion level.

The author's style of writing is both engrossing and detail-laden. The depictions and vividness of the stress of combat readily come across by both the overall writing and the structure Nash uses. I was able to follow the flow of most tactical actions in the mind's eye with little trouble.

The book is eminently readable and, unlike a myriad of other books that focus on units, never seems to get mired in writing mud but moves along briskly. Overall the volume is well-illustrated, and the reader will sense this is a well-researched book. Critically the book is well-steeped in doctrinal materials from both sides of the hill in a deft manner.

More importantly, Nash fills in that critical period after the Russian offensive Operation Bagration destroyed Army Group Centre in the summer of 1944. No other book so neatly and in such detail captures these desperate defensive armor struggles at Warsaw in the summer and autumn of 1944. It clearly presents and delineates that the Wehrmacht, and in particular IV SS Panzer Corps, were still a lethal foe. Be prepared for a grim, vivid and compelling page-turner.

DR. (LTC) ROBERT G. SMITH

German Tank Destroyers by Pierre
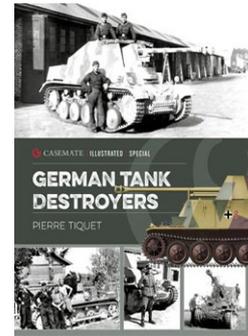
Tiquet; Havertown, PA: Casemate Publishers; 2021; 192 pages with photographs, appendix; $39.95 hardcover.

German victories against Poland and France were the result of the revolutionary employment of aircraft, radios and tanks to form a command-and-control system that swiftly responded to battlefield dynamics. Evaluating their performance, the Germans noted several equipment deficiencies. One of these flaws focused on an inability to destroy enemy armored forces. In his latest work, Pierre Tiquet evaluates eight tank-destroyer systems created to resolve this deficiency.

Even though the French poorly managed their armored forces, the towed German 37mm anti-tank gun was not up to the task of stopping individual enemy tanks. Soldiers derisively referred to the weapon as the "army door-knocker device." Only the German 88mm was decisive when engaging the armor threat. To the Germans the answer to effectively destroying enemy armor lay in creating mobile weapon systems.

Given the paucity of available material, the initial German effort centered on the use of captured enemy equipment. Before they invaded Russia in June 1941, the Germans mounted the 47mm Czechoslovakian gun on the Panzer I chassis. This vehicle was known as the *Ente* (Duck). While effective against various Russian tanks, the vehicle lacked a radio, had limited cross-country mobility and was unable to deal with the Soviet T-34 tank, although almost 500 vehicles were fielded before they were withdrawn from front-line service.

To replace them, the Germans mounted a 75mm gun on a captured French Hotchkiss chassis. This vehicle was designated the *Marder I* (Marten). Its large silhouette and limited cross-country mobility allowed limited battlefield operations. However, the

weapon system worked well against the Soviet armored formations.

As Tiquet details, this led to modifications of the original design. The *Marder II* mounted a German 75mm gun on a Panzer II chassis.

Given the vast amount of Russian equipment captured, the Germans improved the *Marder III* with the high-muzzle-velocity Russian 76.2mm gun mounted on the Czech 38 (t) chassis. The "t" represented the German designation of Czechoslovakian systems. The vehicle contained 30 main-gun rounds and had a high silhouette but was radio-equipped. A little more than 600 were eventually produced and served in North Africa, Russia, Italy and France.

Arguably the next two vehicles Tiquet describes were artillery weapons rather than pure anti-tank vehicles. Their ability to destroy a tank, however, was indisputable. The *Dicker Max* (Fat Max) mounted a 105mm gun on the Panzer IV chassis, while the *Sturer Emil* (Stubborn Emil) carried a 128mm mounted on a unique chassis. These vehicles required a logistical-support system that the Germans possessed in only a limited degree. Appreciating the destructiveness of the 88mm gun, the Germans mounted the gun on the *Hornisse* (Hornet) using either a Panzer III or IV chassis.

Two other systems were fielded to deal with ever-increasing Allied armored threat. The *Nashorn* (Rhinoceros) employed the 88mm on a unique chassis, while the *Elephant* also carried the 88mm. This vehicle was rushed into the 1943 Battle of Kursk. As the author details, the vehicle possessed too high a profile, had transmission and engine problems, a limited traverse and no weapon system to defend against infantry. The Russians destroyed a great number of these vehicles.

Tiquet's description of the *Hetzer* (Agitator), which mounted the German 75mm on the Czechoslovakian 38 (t), demonstrated German Innovation as they continued to modify current and captured materiel to their advantage. The low profile of this vehicle, along with that of the *Jagdpanzer* (tank destroyer) IV 70/75mm gun on a Panzer IV chassis, were highly effective tank destroyers that arrived too late in the war to be decisive.

Each of the systems Tiquet describes includes a vast amount of period photos, along with thumbnail sketches of personnel awarded decorations for their bravery using a given system. Also, various engagements in Europe, Russia, Italy and North Africa are described. Maps and comparison charts displaying such items as weight, height, ammunition type, muzzle velocity and number produced are not provided. These items would have

aided the reader. These shortfalls require the reader to consult other reference works to appreciate the characteristics and employment of each vehicle.

Their use of captured enemy equipment, the development of tactics and techniques to enhance weapon effectiveness – along with an understanding of the effectiveness of camouflage by the Germans – demonstrates flexibility and inventiveness, traits which still apply to the battle grounds of today.

As the author notes, each of these vehicles had their challenges. They were cramped gas guzzlers, with limited room for ammunition, had no defensive weapons for attacks by infantry or air, were dependent on camouflage to survive, lacked a rotating turret and were difficult to operate. Despite these problems, maneuver commanders will find this work beneficial in appreciating how the Germans responded to battlefield demands.

COL (R) D.J. JUDGE

Acronym Quick-Scan

ACR – armored cavalry regiment
BEF – British Expeditionary Force
C2 – command and control
GWOT – Global War on Terrorism
OHL – Oberste Heeresleitung
OIF – Operation Iraqi Freedom

Command Under the Pandemic

by CPT Nathan Sitterley

Charles Dickens said it best in *The Tale of Two Cities*: "It was the best of times, it was the worst of times. …" This article will shed some light on the friction points, risks to mitigate, creative solutions and lessons-learned I encountered as a troop and company commander March 2020-June 2021 during the coronavirus disease (COVID)-19 pandemic. Although the pandemic is not over, many Americans, including Soldiers, see light at the end of the tunnel.

To codify this into some sort of after-action review, I will break this article down into three phases of operation. Phase 1 begins with the introduction of COVID and ends with the quarantine process. Phase 2 begins with the lessening of restrictions and ends with my troop's return from National Training Center (NTC) Rotation 20-09. Phase 3 begins with readjusting to the COVID posture and ends with the introduction of Operation People First.

This article will demonstrate how a troop gathered lessons-learned and implemented them throughout garrison functions and during training exercises.

Phase 1: start of COVID

Apache Troop, 2nd Squadron, 1st Cavalry Regiment, was coming off its rotational day March 17, 2020, for a platoon live-fire lane when it got word that COVID had spread to the United States. That news would change the course of history and the operational environment as we knew it for the next couple of years. The following week we started hearing the term health-protection condition levels. The term "essential personnel" was also implemented.

Our guidance from higher was to have no more than 10 percent of the squadron on duty at one time. Soldiers would not work for more than four hours during a duty day. Physical training would be conducted at the individual level. We would suspend all collective training, including weapons qualification, ammunition pick-up/turn-in, physical-fitness tests, driver training and scheduled services.

Minimizing contact. Our main purpose was to prevent the spread and risk of COVID cross-contamination of Fort Carson, CO, and 4th Infantry Division Soldiers, civilians and families. We wanted to protect the force by minimizing contact of Soldiers at work and to ruthlessly enforce social-distancing standards. Overall we wanted to remain isolated to prevent contact with the Colorado Springs community and adhere to the Centers for Disease Control and Prevention guidelines.

It would work in theory except for one small issue: our scheduled rotation to NTC in May 2020. In light of these events, however, our brigade had to postpone the NTC rotation until August 2020.

We discovered that technology like video chat and social media were accessible to most Soldiers in our formation. Therefore we used it as much as we could to prevent Soldiers from personal contact, therefore contracting the virus, as well as to check on their welfare.

However, there were still daily physical tasks to complete. To this end, a deliberate troops-to-tasks plan had to be created for the brigade commander to assume risk for activities conducted and not conducted.

There were 10 priority daily tasks to be accomplished by the troops during this phase:

1. The staff-duty officer in charge/noncommissioned officer (NCO) in charge inspected common areas, including the motorpool, company offices and barracks.
2. Charge-of-quarters personnel performed courtesy patrols near our squadron footprint.
3. Sick-call operations were ongoing at the adjacent consolidated clinic.
4. Classes of supplies were processed and picked up at the supply-support activity, especially our Class IX repair parts.
5. Soldier Readiness Program tasks were to continue at the site designated on Fort Carson.
6. We were to install all parts on hand for deadline pacing items.
7. We suspended in-person performance counseling; we distributed these out and used whatever media platform was best to communicate.
8. The daily synch occurred twice daily to maintain accountability.
9. Leadership professional development (LPD) and classes occurred via a network media-sharing platform.
10. Physical training used tools like Strava or Garmin to track workouts.

Changes in personal and work life. My guidance as a commander was to have no alcohol consumption until the end of the duty day. Although this guidance was pre-COVID, it was now stated in COVID counseling for those who weren't considered mission-essential during this period. Soldiers were still expected to train and potentially work within a given four-hour window.

My living room became my office. My basement became my gym. My wife became my work associate. It was hard to differentiate work and personal life now that work had actually moved into the home. My experience was like many others.

This was a high-stress point in the pandemic. The troop had Zoom calls twice a day. The squadron S-2 updated command teams and staffs daily with the number of infections and deaths. There were no solutions, and there was no end in sight.

Essential-personnel readiness conditions remained for about a month. Restrictions started to ease at the end of April/early May 2020. Most Soldiers came back to work then, with a few exceptions for those with high-risk conditions (for example, family members who were older than 65 or who had immunocompromising diseases).

Adapting at range

Our M4 qualification would be the catalyst to show everyone we could train

Figure 1. CPT Nathan Sitterley conducts a training meeting with BG John Myer III, deputy commanding general of maneuver, 4th Infantry Division, Fort Carson, CO, May 7, 2020. BG Myer observed Sitterley's troop during a troop training meeting. One purpose for this observation was to observe how unit commanders planned and prepared before large collective training, as well as for NTC, with COVID restrictions. *(U.S. Army photo by LTC Brent Chastain)*

again; the difference was that the training had a lot more mitigation measures in place.

The amount of effort and planning for the M4 qualification required more support than expected. Medics were positioned at our bus pick-up location to take temperatures and to take roll call on who was coming on and off the bus. We separated personnel so they only sat one Soldier per bench. We had the bus driver sanitize the bus after each usage. Each Soldier was provided a magazine for his/her specific use. The Soldiers maintained their own magazine throughout the qualification.

The range had four stations.

- **Station 1:** The reception location/staging area. This was where the bus dropped off and picked up Soldiers. We had an NCO enforce six feet of separation to ensure COVID compliance.
- **Station 2:** The retraining and concurrent training station. This was where the dime and washer drill was being used to train and retrain our

Soldiers. We placed another NCO at this location to ensure COVID compliance.

- **Station 3:** The ammo point. This location had one person in the ammo shack to distribute ammo as well as a medic to check temperatures of Soldiers at the range.
- **Station 4:** The range itself. Safeties maintained their mask-wearing. Soldiers who were shooting had to take their mask off because it would fog up their eye protection. This was the risk I was willing to assume based on safety. I did not want our Soldiers shooting if they could not clearly identify their target. The Soldiers were spread out at a minimum of six feet and with one safety per three Soldiers.

The range was scripted and rehearsed and had no issues until the very last group. A Soldier started to feel symptomatic with fever and chills. I then realized that we lacked an area to quarantine Soldiers on the range if they started feeling sick.

Lessons-learned in quarantine

Three lessons were learned from this first range. Lesson 1: Have a designated area for symptomatic Soldiers. This would potentially prevent the spread of COVID to a group of Soldiers. Lesson 2: Have medics begin to screen Soldiers coming off the range and throughout the range time. This would ensure the condition in which Soldiers entered the range was generally the same. Lesson 3: Have a designated transportation vehicle for symptomatic Soldiers. This would ensure that he or she did not get back on the bus full of Soldiers and expose them all to the disease.

The main goal of this was to capture lessons-learned and gain knowledge about how to better prepare for future training events as we began to gear up for NTC.

Phase 2: looser restrictions, NTC rotation

Phase 2 is broken down into two sub-phases. The first phase (Phase 2A) was to rebuild our team while protecting the force's health. The second phase (Phase 2B) was to get to NTC and accomplish our mission at 80-percent capacity.

There were three key tasks I wanted to accomplish during this phase. Key task 1: Conduct team- to section-level training. Key task 2: Be postured for expeditionary deployment via rail to NTC. Finally, key task 3: Fight the enemy as best as we could during our NTC rotation.

We were guided by four principles in our brigade: Be able to see yourself, understand your higher headquarters, fight for terrain and fight the enemy. Those four tenets helped shape the outcome of any mission we faced.

Phase 2A: I was able to see the turbulence in our formation. Specialists were now team leaders. Team leaders were now squad leaders, and squad leaders were now platoon sergeants. We wanted to start our training glide-path at team level to build cohesion at the lowest level. We called this Operation Apache Stakes.

Teams had to maneuver to different points during 24 hours to train and execute team-level tasks. This was similar to a cavalry spur ride. The purpose was to train teams to be able to execute small-unit tactics such as caring for a tactical combat casualty, establishing an observation post, calling for fire, reacting to chemical attack, maintaining vehicles, boresighting a remote weapon system and optics, and navigating terrain.

This training allowed us to create a course where not everyone was together training, but everyone was training together. It was collective training at the team and individual level. Social distancing was enforced as well as the mask policy. Temperatures were checked, and Soldiers were simultaneously getting acclimated to the extremely high temperatures predicted for our summer month at NTC.

We moved on from this training and began to conduct team- and squad-level certification under blank conditions. It was imperative that each team carry forward its lessons-learned from Operation Apache Stakes to better tackle an area-reconnaissance and operations-establishment mission conducted at squad level. We incorporated several lessons-learned from the first M4 rifle range we conducted after COVID hit, taking necessary precautions to ensure limited contact with main-post personnel while we were in the field for five days.

Where to rest?

Our newest dilemma was that Soldiers needed to sleep somewhere at NTC while social-distancing. We wanted to create a standing operating procedure (SOP) for how to organize at NTC. We marked off areas with pickets and engineer tape at least waist high. We planned enough room for Soldiers to spread out. They put their rucks in between each other to create a makeshift wall about six feet apart from their neighbors.

We also only allowed two people to sleep inside the Stryker. The driver of the Stryker would sleep in the driver's hull, and the vehicle commander or gunner would sleep in the back on the bench or in a hammock.

Our medical-evacuation vehicle would

be off limits to Soldiers except for our medics to ensure it was clean and ready to act as a COVID transport vehicle. We rehearsed this drill and had the senior medic talk through this procedure as well.

For transportation, we had to get creative. We had our driver and gunner inside the Stryker's hatch. The vehicle commander was out of the hatch. The back-left air guard was out of the hatch, and we had the rest of the Soldiers masked up inside.

We even had standardized cards from the brigade distributed throughout the formation. As per our SOP, each Soldier wore one mask and carried a spare in their cargo pocket. All Soldiers were issued pocket-sized hand sanitizers and a quick-reference card for symptoms and battle drills for COVID.

Our culminating training prior to NTC was a Mortar Training and Evaluation Program event. We executed this training in July during one of the hottest summers in more than a decade at Fort Carson. Short rounds and misfires occurred, but we pressed on. In the end, our troop certified the entire squadron's mortars section by shooting about 700 rounds during 100 fire missions.

To maintain COVID compliance, our two gunners were outside the hatch when the squad leader gave commands. Masks were worn when in close proximity. We also conducted temperature checks twice daily, and we had a quarantine tent should anyone become symptomatic.

This was a five-day process that included unpacking and repackaging ammunition and dunnage. The lesson-learned was to have a government vehicle or non-tactical vehicle. This allowed immediate transportation of COVID-symptomatic personnel to and from the range, but it didn't impact training assets like the medical-evacuation vehicle.

Phase 2B: The pack-out for NTC was a significant emotional event – especially if the pack-out was also considered a deployment-readiness exercise. However, during our COVID mission-essential readiness conditions, some of our leaders were able to get into

troop schools/classes like "unit movement officer" and "container control officer," etc. Therefore we were postured to conduct rail-load and expeditionary-deployment operations at troop and squadron level.

All troop commanders in the squadron were placed in charge of nodes. From the motorpool cargo-staging area all the way to the rail yard, commanders ensured that proper safety precautions were used and COVID mitigation guidelines were followed.

Our time to get tested for COVID arrived seven days before we went to NTC. After getting tested, we had to restrict our movement to ensure we were not exposed to the outside community. To make this process more efficient, our brigade divided us into multiple groups for testing by using departure times; it took about seven days to get everyone tested.

Our advance party was postured to begin to move and stage vehicles for all of us at Fort Irwin, CA. Once we arrived, we were told that our unit was going to be the first to try to conduct an expeditionary reception, staging and onward integration while inside "the box." This was where things got interesting.

Most of our Soldiers stayed near our containers at a makeshift container yard. We were able to scrounge up camouflage nets from our Strykers to create improvised shelters that would temporarily deny the beating California sun. Morale was high because we had worked so long for this moment.

Ice coolers started arriving at all units. We were able to store ice within our coolers. It would not be surprising to know that we drank the icewater together. Feel free to use your imagination for our fight to remain socially distant and adhere to COVID guidelines at NTC.

Our troop mainly stayed together in the box. Not one of our Soldiers tested positive for COVID because we had trained so much together already before we came to NTC. We fought hard, broke a lot of equipment, learned a lot of lessons and redeployed to home station during one of the hottest summers at Fort Irwin in decades. Our unit

Figure 2. Alpha Troop plans its first operations order at NTC. *(U.S. Army photo by CPT Nathan Sitterley)*

grew strong because we added a different operational environment into the mix as well. The unit was close. I've never felt more proud of my Soldiers, NCOs and officers.

How we prepared for NTC was a different process during the pandemic. We used the book, ***The Defense of Hill 781*** by James McDonough as a guide. Using Microsoft Teams to display a map and going over the terrain was vital to my platoon leaders when it came to understanding key and restrictive terrain. We did this LPD for four weeks.

Phase 3: Operation People First

There was no playbook for this pandemic. A lot of us were just trying to be creative to take care of our Soldiers. Technology is a great asset when used properly to bring people closer together to share ideas; however, technology, network mediums and social networks can also deny the ability for leaders to empower and strengthen their subordinates' trust. "Turn on the Global Positioning System tracker on your phone so I can know exactly where you are" was a common phrase.

Back in garrison, commanders tried to do Soldier family-readiness-group activities via digital, social or network-sharing platforms. It got the point across but still lacked the interaction of a face-to-face conversation. We found ways to reach out to our Soldiers' families once a month through Operation People First by contacting their close friends and families.

In March 2021, the new battalion I was with had to send our medics off to support a U.S. Army North mission in Los Angeles, CA. Their mission was to vaccinate some 6,000 people per day. During the 40 days they were deployed, our medics, alongside various agencies, vaccinated about 200,000 people.

Meanwhile, our battalion was still ramping up a collective-training glide-path. We were able to accomplish this through careful calculations of what was the absolute minimum requirement of medic support we needed and what ranges could be mitigated with tactical combat-casualty-care trained personnel. Also, as the headquarters and headquarters company (HHC) commander at this time, I gained control of the remaining medics to create a very detailed daily troops-to-tasks plan.

We were able to accomplish a battalion-level training exercise, which included three rifle-company certifications under blank conditions and nine rifle-platoon certifications under live-fire conditions with 10 medics and a physician assistant. The lesson-learned was that if you do the analysis ahead of time, you can posture your entire battalion for success.

It was an extremely stressful time for me as a leader. From dealing with COVID, NTC, Operation People First and two change-of-command inventories, the No. 1 lesson-learned is that social distancing can only work if you maintain some close connections with your friends and families. Going through it alone is never easy.

Our new Soldiers were of course stressed, too. Those who graduated basic training since March 2020 generally only know about operational procedures under COVID restrictions.

Takeaway

I hope this article can provide some insight on some lessons-learned that can be used to better posture a unit for a pandemic operational environment in the future. Those of us who joined the military prior to COVID probably missed Stable Calls, hails and farewells, troop/company/battery-level functions, battalion balls and even our infamous mandatory-fun organizational days. However, by continuing

to take the necessary steps and mitigations, we are moving in the right direction to increase unit cohesion and enhance unit morale.

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Officer Leadership Course (ABOLC), 2-16 Cavalry, 199th Infantry Brigade, MCoE, Fort Benning; and platoon leader/executive officer, 3rd Squadron, 4th Cavalry Regiment, 3rd Infantry Brigade Combat Team, 25th Infantry Division, Schofield Barracks, HI. CPT Sitterley's military education includes Maneuver Captain's Career Course, Cavalry Leader's Course, Army Reconnaissance Course, Maneuver Leader's Maintenance Course, Common Faculty Developmental Program Instructor Course, ABOLC, Airborne School and Pathfinder Course. He holds a bachelor's of science degree in marketing from Salisbury University. CPT Sitterley's awards and honors include the Meritorious Service Medal and the Order of Saint George Bronze Medallion.

Honoring our Armor and Cavalry Medal of Honor Heroes

Derived from Center of Military History information provided at https://history.army.mil/html/moh/civwaral.html. Listed alphabetically. Note: Asterisk in the citation indicates the award was given posthumously.

JORDAN, ABSALOM CPL
Unit: Company A, 3rd Indiana Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Entered service: North Madison, IN. Born: Brown County, OH. Date of issue: May 3, 1865. Citation: Capture of flag.

KELLY, ALEXANDER 1SG
Unit: Company F, 6th U.S. Colored Troops. Place and date of action: Chapins Farm, VA, Sept. 29, 1864. Born: Pennsylvania. Date of issue: April 6, 1865. Citation: Gallantly seized the colors, which had fallen near the enemy's lines of abatis, raised them and rallied the men at a time of confusion and in a place of the greatest danger.

KELLY, DANIEL SGT
Unit: Company G, 8th New York Cavalry. Place and date of action: Waynesboro, VA, March 2, 1865. Born: Groveland, NY. Date of issue: March 26, 1865. Citation: Capture of flag.

KELLY, THOMAS PVT
Unit: Company A, 6th New York Cavalry. Place and date of action: Front Royal, VA, Aug. 16, 1864. Born: Ireland. Date of issue: Aug. 26, 1864. Citation: Capture of flag.

KENYON, JOHN S. SGT
Unit: Company D, 3rd New York Cavalry. Place and date of action: Trenton, NC, May 15, 1862. Entered service: Schenevus, NY. Born: May 5, 1843, Grosvenors, Schoharie County, NY. Date of issue: Sept. 28, 1897. Citation: Voluntarily left a retiring column, returned in face of the enemy's fire and helped a wounded man upon a horse, enabling him to escape capture or death.

KENYON, SAMUEL P. PVT
Unit: Company B, 24th New York Cavalry. Place and date of action: Sailors Creeks, VA, April 6, 1865. Entered service: Oriskany Falls, NY. Born: Ira, NY. Date of issue: May 3, 1865. Citation: Capture of battle flag.

BATTLE ANALYSIS

The Battle for Hue: Employment of Armor in a Combined/Joint Urban Operation

by LTC (Retired) Lee Kichen
Part 1 of 2 (strategic situation, battle-space, prelude to combat and battle)

Increased global urbanization presents the Army with the reality that combat in cities against a near-peer or peer adversary will be the norm.[1] Armor stands ready to assume any future urban-combat mission, as it has played a pivotal role in successful urban operations (UO) since the first employment of tanks in battle in 1916.[2]

The Battle for Hue illustrated Armor's ability to transition from fighting in open, rural country to supporting a large-scale combined/joint UO. Tanks were "absolutely necessary in clearing the enemy from Hue by the 1st Marines," said BG Foster C. "Frosty" La-Hue, who commanded the Marine Corps' Task Force (TF) X-Ray in Hue.[3]

The lessons-learned from this battle 53 years ago are relevant to the readiness of today's mounted formations for future UOs.

Strategic situation

GEN William C. Westmoreland, commander of U.S. forces in South Vietnam, in a speech to Congress Nov. 21, 1967, said, "I am absolutely certain that, whereas, in 1965 that the enemy was winning, today he is certainly losing."

The Tet Offensive of 1968 proved him mistaken.[4] North Vietnam planned a large-scale offensive to end the war in its favor by attacking population centers, intending to incite a general uprising of the South Vietnamese people, defeat the Army of the Republic of (South) Vietnam (ARVN) in the field and force the United States to withdraw its forces.[5]

Battlespace

Hue, the capital of Thua Thien province, was South Vietnam's third-largest city. Built in the early 19th Century, the Vietnamese revered Hue as a religious and cultural center, with neither side conducting operations in the city.[6] Hue was in the I Corps Tactical Zone (CTZ) 60 miles south of the demilitarized zone separating North and South Vietnam.[7]

The city lies on a bend of the Song Huong, or Perfume River, which runs from the hills to the west to the South China Sea, which is 11 kilometers northeast of Hue. A railroad, a Navy supply point and Highway 1 converged at Hue. The 25-kilometer Ah Shau valley between the Laos border and Hue was part of the Ho Chi Minh trail over which supplies flowed to North Vietnamese Army (NVA) and Viet Cong (VC) forces.[8]

The Old City, better known as The Citadel, is north of the Perfume River. Its buildings were mostly stone structures. Surrounding The Citadel was a 75-foot-wide moat and stone walls 20 feet wide and 25 to 30 feet high. The Imperial Palace, surrounded by another moat, was in the southeastern section of The Citadel. The 1st ARVN Infantry Division's headquarters was in the northeastern corner of The Citadel, and the Tay Loc Airfield was in the center.

The New City was south of the river. Public buildings and the homes of private citizens were mostly modern European and American in design. The U.S. Military Assistance Command Vietnam (MACV) compound – housing 200 U.S. Army, U.S. Marine Corps and Australian advisers to 1st ARVN Infantry Division – was close to the river.

Other key targets were a military radio relay station, the provincial capital building, the jail, a hospital, Hue University, the U.S. consulate and the U.S. Navy's landing craft utility ramp.[9]

Prelude to combat

While South Vietnamese civilians prepared for the Tet holiday, enemy soldiers in civilian clothing easily slipped undetected into major urban areas. A key element of the Communist plan was a series of diversionary attacks on small rural outposts intended to draw American forces away from urban areas.[10] During these attacks, American armored units blocked infiltration routes, while South Vietnamese armor remained in or close to population centers.[11]

Although the Tet holiday truce was in effect, American forces remained alert to sporadic indirect fire or occasional ambushes but did not expect a large-scale general offensive throughout South Vietnam by the Communists.

American forces: Prior to the enemy attack, 3rd Marine Division was moving from Quang Nam and Thua Thien Province to Quang Tri. TF X-Ray assumed responsibility for the Phu Bai area of operations, including Hue, Jan. 15. The TF consisted of 1st Marine Regiment, with its 1st and 2nd Battalions, and 5th Marine Regiment, with its 1st Battalion.

The initial TF order of battle included Company A (-) (M-48A3 90mm "gun tanks" and M67A3 "flame tanks"); an antitank company (-) (M-50 Ontos (Greek for "thing")) of 1st Marine Tank Battalion; and a small detachment from the Navy Support Activity operating the utility landing craft (LCU) boat ramp.

Republic of (South) Vietnam (RVN) forces: Most of the RVN forces were on leave celebrating Tet with their families. The only forces in the city at the time of the attack were the headquarters of 1st ARVN Infantry Division, its 36-soldier reconnaissance platoon, a quick-reaction force and the elite 240-soldier Black Panther Company (Hac Bao).[12]

BG Ngo Quang Troung, well respected by his American counterparts, commanded ARVN forces in The Citadel.
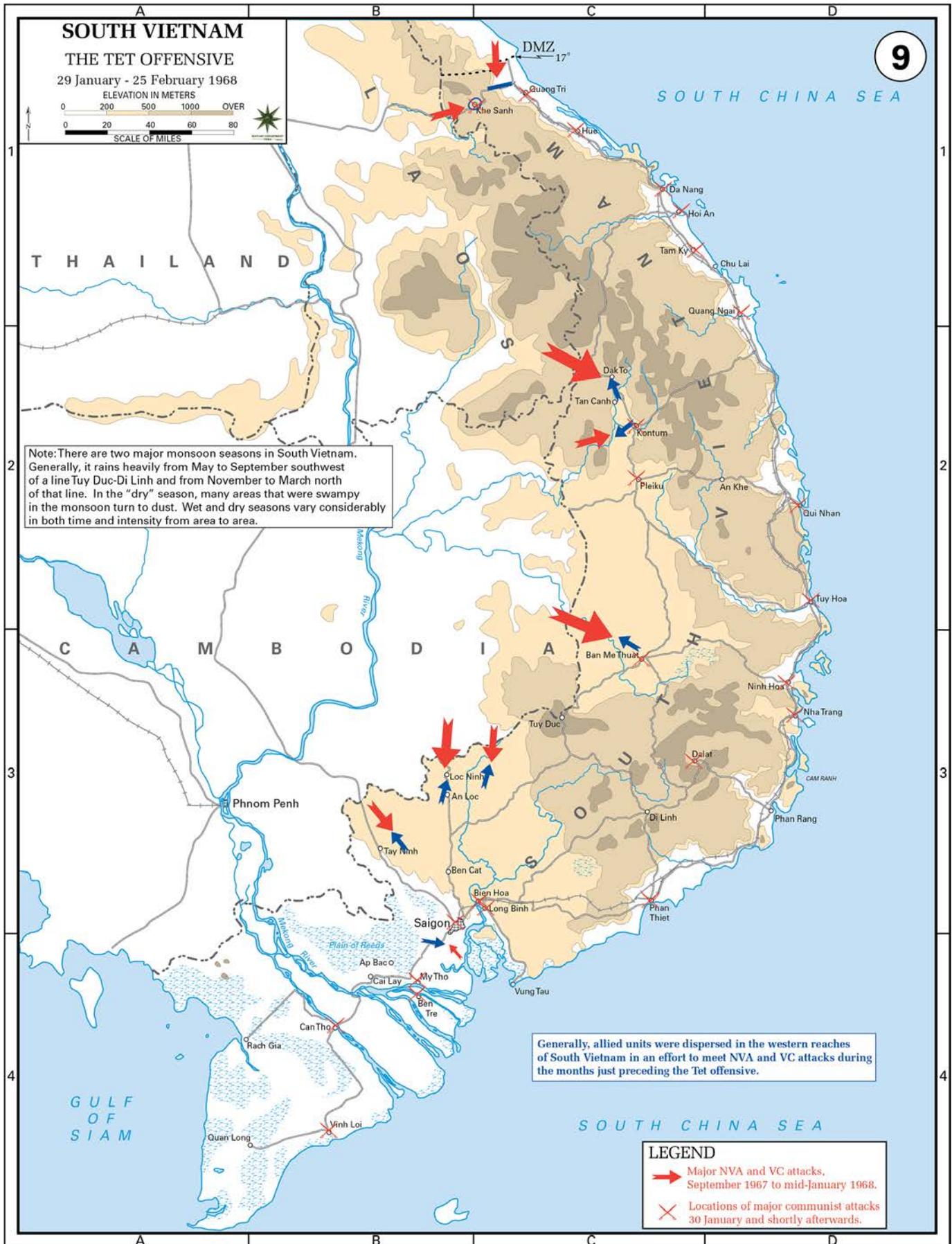
Figure 1. The Tet Offensive. *(Map courtesy of the U.S. Military Academy Department of History)*
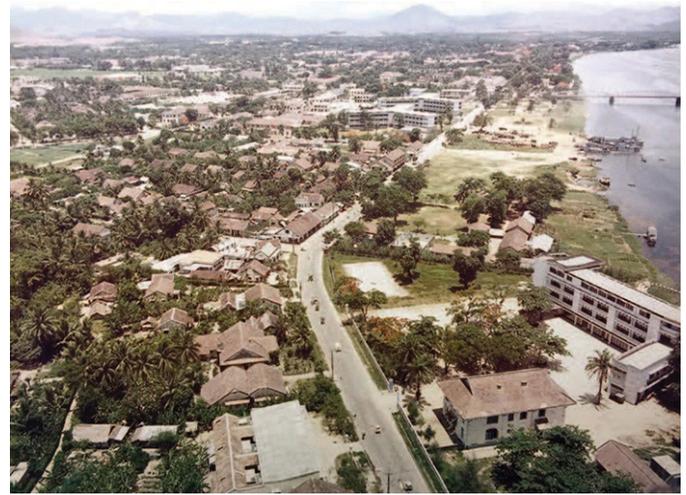
Figures 2a and 2b. Left, The Citadel, and right, the New City of Hue.

Although the division was battle-tested, its three regiments were spread out throughout I CTZ.

The 7th Armored Cavalry Squadron headquarters and a troop of M-41 Bulldog light tanks occupied the Tam Thai Cavalry Camp. Two kilometers to the southwest, there was an engineer battalion.[13] BG Troung increased the readiness of his forces not on leave. His decision to have the Black Panthers Company guard the Tay Loc Airfield would prove prescient.

Communist forces (NVA/VC): Allied intelligence in early October 1967 detected the NVA's 4th and 6th Regiments, two sapper battalions and local VC forces in Thua Thien Province, but there was no discernable enemy activity. The well-equipped enemy assembled a force equivalent to 14 infantry
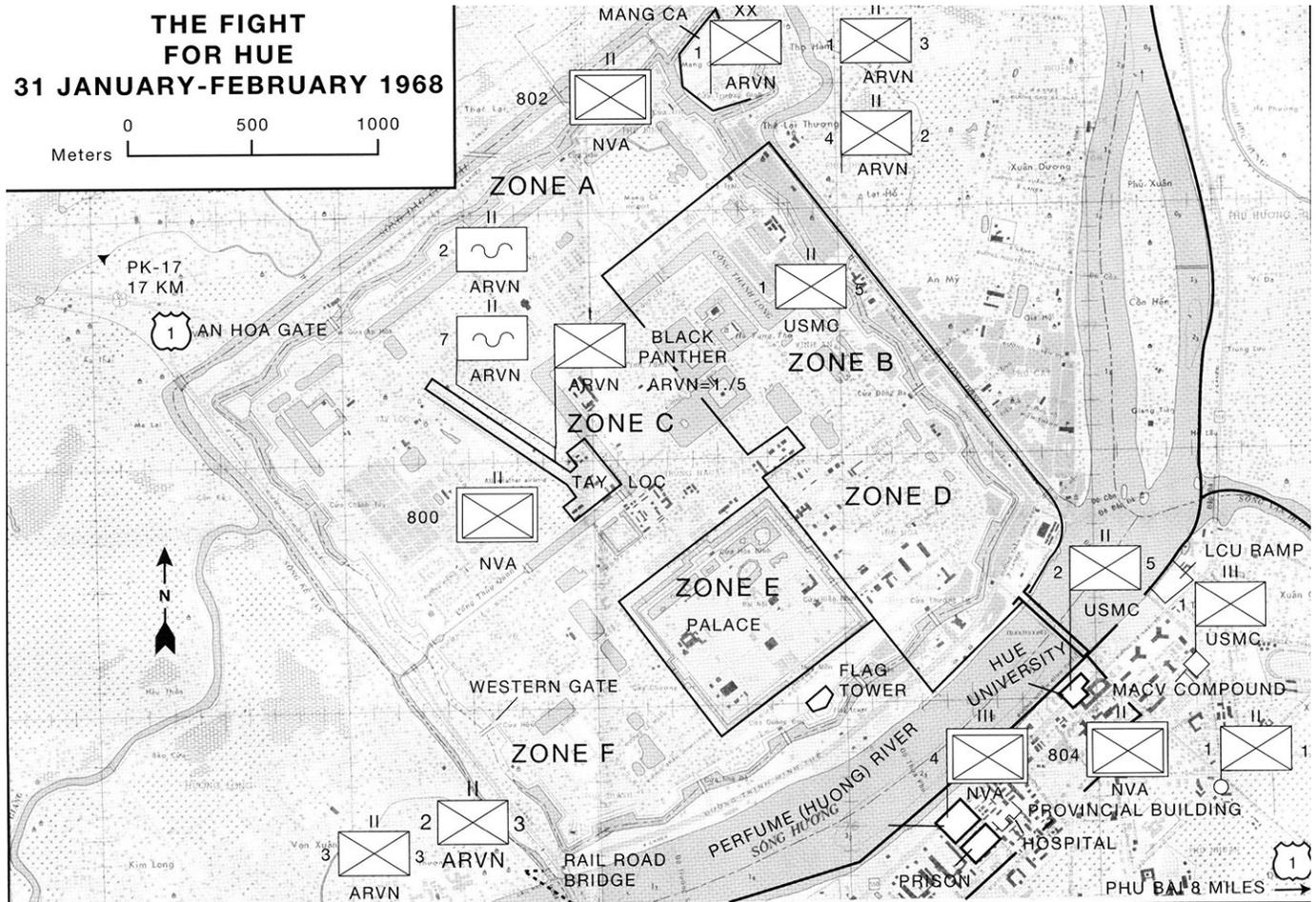

Figure 3. Initial dispositions of troops for the Battle of Hue. *(Map from **U.S. Marines in Vietnam: 1968** by Jack Shulimson, Leonard A. Blasiol, Charles R. Smith and David A. Dawson; public domain)*

ARMOR

Figure 4. A Soldier from 5th Battalion, 7th Armored Cavalry, in action at Thon La Chu Feb. 9, 1968. *(U.S. Army photo)*

battalions, a 122mm rocket battalion, two 82mm mortar companies, two 75mm recoilless rifle companies and two 12.7 heavy machinegun companies.[14]

Both NVA regiments and support units, only a day's march from Hue, avoided an ARVN airborne TF operating in the area. Forces from the siege at Khe Sanh and the Quang Tri region also moved undetected toward Hue.[15]

Battle

The enemy, appreciating the value of armor in the city, struck its first big blow when a five-man sapper team destroyed 11 antiquated M41 tanks at Tam Thai.[16] The Communist forces executed the main attack Jan. 31: the 6th NVA Regiment's objectives in The Citadel were the headquarters compound of 1st ARVN Infantry Division, Tay Loc Airfield and the Imperial Palace.

The 4th NVA Regiment was responsible for the New City south: its objectives were the MACV compound, the provincial-capital building, the prison, radio stations, the Imperial Museum, the homes of South Vietnamese government officials, RVN sympathizers and American civilians and military personnel.[17]

In the early hours, a four-man VC sapper team wearing ARVN uniforms killed the guards and opened the west gate of The Citadel to NVA soldiers, who

opened the other gates of the Old City. NVA and VC soldiers, supported by mortar and rocket fire, rushed the New City and rounded up and interrogated governmental officials, suspected collaborators, Catholic clergy and foreign civilians.

The enemy captured 90 percent of The Citadel, including the Imperial Palace and most of the New City, except the MACV compound and the boat ramp.

By 4 a.m., the Black Panther Company temporarily blocked 6th NVA Regiment's assault on Tay Loc Airfield.

Reinforced by the division staff, the Black Panther Company recaptured the medical company's billets.[18]

The 802nd Battalion attacked 1st ARVN Infantry Division headquarters. BG Troung, determined to hold his headquarters and maintain command-and-control of his subordinate forces, recalled the airfield's defenders. He ordered 3rd Regiment, two airborne battalions and elements of 7th Armored Cavalry Squadron, mounted on M41 light tanks, and M113 armored personnel carriers to fight their way into The Citadel.

The task force received heavy small-arms and automatic-weapons fire while nearing the city. After fighting their way through the resistance, they reached the headquarters by late afternoon.

Shortly before the fight, the ARVN had received light anti-tank weapons from Marines returning from an exercise near the demilitarized zone. A Marine Corps adviser later said, "When we got back to Hue, we held several classes on how to best use them. There is no doubt in my mind that their effective use on that first day saved BG Troung's headquarters."

MACV headquarters in Saigon grossly underestimated the strength and the objectives of the Communist forces, believing the enemy was conducting

Figure 5. U.S. Marines on tanks during Tet. *(Photo courtesy of the National Archives, Photo 53248)*

local attacks rather than large-scale combat operations throughout South Vietnam. GEN Westmoreland cabled GEN Earle Wheeler, chairman of the U.S. Joint Chiefs of Staff, that "the enemy has approximately three companies in the Hue Citadel, and the Marines have sent a battalion to clear them out."

It took at least 72 hours before the Allies comprehended the magnitude of the Communist offensive in Hue.[19] Neither LTG Robert Cushman, III Marine Amphibious Force (III MAF) commander, nor LTG Hong Xuan Lam, commander of ARVN forces in I CTZ, had a clear understanding of the situation. However, they concluded that more forces were necessary to clear Hue.

Unfortunately, BG LaHue was unaware the enemy had occupied the entire city, so he dispatched only an infantry company in trucks and four tanks to clear out the enemy.[20] This weak response gave the NVA/VC more time to prepare their defenses, which resulted in more friendly casualties as the battle progressed.

Since arriving in Vietnam in 1965, American forces had fought mostly on rural terrain, conducting convoy security, search and destroy, and pacification operations. They had no training in clearing an entrenched enemy from a city where yards rather than miles were measures of success. As late as 1993, doctrine maintained that armor units should avoid defended cities.[21]

Therefore the Battle of Hue was a "come as you are" operation for the untrained Marines. LTC Ernest C. Cheatham Jr., commander of 2nd Battalion, 5th Marines, after receiving the mission to go to Hue, fortuitously found a cache of doctrinal manuals in 5th Marine Regiment's headquarters. After reading the manuals entitled **Combat in Built-Up Areas** and **Attack on Fortified Positions**, he understood the best way to fight in Hue was to "gas the enemy, blow things up and then clear out the ruins."[22]

Further complicating Cheatham's situation was a lack of maps; his formation operated with only three maps found in an abandoned Texaco station.

Company A, 1st Battalion, 1st Marines,

was the first unit to arrive. Its mission was the relief of the MACV compound.[23] The enemy ambushed the Marines coming into the city. The 3rd Marine Division committed a provisional tank platoon of two M48A3 90mm gun tanks and two M67A2 flame tanks. The Navy transported them to Hue on LCUs to the boat ramp in the New City.[24]

The command group of 1st Battalion, 5th Marines, led by LTC Marcus J. Gravel, and Company G augmented Company A, 1st Battalion, 1st Marines.[25] This small Marine Corps infantry TF's armor consisted of the tank platoon, two M42 Dusters with twin 40mm anti-aircraft guns and a few surviving M41 tanks from ARVN's 7th Armored Cavalry Squadron. The TF relieved the defenders of the MACV compound at 3:15 p.m.[26]

Reminiscent of scenes from World War II with infantry riding on tanks, M48A3 tanks transported Marines into the MACV compound.[27] The seriously wounded had to be transported to the landing zone (LZ) about a mile from the compound, necessitating house-to-house fighting. Not wanting to risk more casualties, Gravel directed a tank

to "walk" its way to the LZ, destroying everything in its path.[28] The Army's 498th Air Ambulance Company provided medical-evacuation (medevac) support to the Marines in Hue and the Army elements west of Hue.

Using French-language maps, medevac pilots faced significant navigation problems. Medevac missions flew Marine and Army casualties to the Navy hospital ships USS Repose and USS Sanctuary.[29]

Company A, 1st Battalion, 1st Marines, stayed in the city to guard the MACV compound, while the rest of the TF proceeded to The Citadel. The M48A3 tanks and the M42 Dusters, since they were too heavy to cross the bridge into The Citadel, provided direct-fire support to the infantrymen attempting to assault The Citadel.[30]

The ARVN tankers' refusal to lead the assault across the Nguyen Hoang Bridge was disastrous for the Marine infantrymen. In defense of the ARVN tankers, it was unlikely that the lightly armored M41 tanks could have survived a frontal daylight assault against well-prepared enemy positions.

Although able to get two platoons

Figure 6. A Marine scans the streets for snipers with an M48A3 Patton tank ready for heavy firepower in the Hue University area. *(U.S. Marine Corps photo)*

Figure 7. An M50 Ontos tank leads a convoy of commandeered vehicles during Tet. *(U.S. Marine Corps archives)*

across the bridge, a hail of enemy fire forced the Marines to withdraw. This effort cost the assaulting Marines nearly one third of their force in dead or wounded. By 8 p.m., both sides stopped fighting and consolidated their positions to prepare for the following day's combat.[31]

LTGs Cushman and Lam established objectives for their respective forces: the ARVN was responsible for The Citadel, and the U.S. Marines would clear the New City and sever enemy lines of communication to the west. Due to the historical and cultural significance of The Citadel, restrictive rules of engagement precluded indirect and close-air-support (CAS) fires into The Citadel; supporting fires in the New City were unrestricted. However, marginal weather conditions throughout the operation limited CAS from fixed-wing aircraft.[32]

On Feb. 1, ARVN forces achieved a measure of success while initiating operations to clear The Citadel. The 2nd and 7th ARVN battalions and the Black Panther Company – supported by 7th Armored Cavalry Squadron – recaptured the airfield. The 1st Battalion of 3rd ARVN Regiment secured the 1st ARVN Infantry Division command post. However, the 2nd and 3rd Battalions, who were without armor support, failed to enter The Citadel.

At 7 a.m. Feb 2, the composite 1st Battalion, 1st Marines, launched a two-company assault to regain the provincial capital and the prison that was two blocks west of the MACV compound. Another objective was to secure the LCU boat ramp.

Elements of 4th NVA Regiment prevented the lead elements of the Marines from moving more than a block from the compound. An M48A3 took a direct hit from a 57mm recoilless rifle,

Figure 8. 1st Cavalry Division helicopter resupply mission northwest of Hue Feb. 17, 1968. *(U.S. Army photo)*

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disabling it and injuring the crew; the tank was later repaired and the crew replaced.[33]

The shorthanded Marines – unable to isolate the city – failed to stem the tide of enemy soldiers entering the city. With GEN Westmoreland's concurrence, III MAF ordered 1st Cavalry Division commander MG John J. Tolson III to deploy his 3rd Brigade into blocking positions to the west of the city. Later in the operation, TF X-Ray assumed operational control of 1st Brigade, 101st Airborne Division (Airmobile). The 3rd Brigade, 1st Cavalry Division (Airmobile), participated in the operation but remained subordinate to the division headquarters. Worsening weather conditions limited airmobile operations; consequently the enemy continued to move troops and supplies into the city.[34]

Armor played an important role in securing the hospital, the prison and the provincial capital. Company G, 2/5 Marines – supported by fire from a M48A3; M50 Ontos with their 106mm recoilless rifles; and mortars – secured the main hospital building by 4:30 p.m. Feb. 5. On the following day, Company G secured the rest of the hospital complex and then attacked the prison with its infantry, supported by recoilless fire from the antitank company.

Company H encountered strong resistance as it pushed on to the provincial capital; the narrow streets and alleys further slowed the attacks. Two tanks moved up to support the attack – one suffered a catastrophic hit from enemy rocket-propelled grenade fire, which penetrated the turret and injured three tankers. The vehicle burned for the rest of day after the 90mm ammunition cooked off.

After five hours of room-to-room fighting, the Marines recaptured the provincial capital. Its capture was more than symbolic; it had been the command post of 4th NVA Regiment. After its capture, most enemy resistance in southern Hue melted away.[35] Heavy fighting continued in The Citadel; poor weather and darkness allowed the NVA to evade 1st Cavalry Division's screen and move fresh troops into The Citadel.

On the night of Feb. 6 and into the following morning, the NVA launched a brutal attack against 2nd Battalion, 4th ARVN Regiment. Using motorized junks, BG Troung redeployed 3rd ARVN Regiment to The Citadel.

ARVN forces in The Citadel by the end of Feb. 7 included two armored-cavalry squadrons, 3rd ARVN Infantry Regiment, a battalion of 4th ARVN Infantry Regiment, the Black Panther Company and a company from 1st ARVN Regiment.

The ARVN appeared formidable, but its weapons were old, and it had previously sustained heavy casualties. The well-armed NVA controlled more than half of The Citadel, preventing the ARVN from making any measurable progress, except for the Black Panther Company's retaking the airfield.[36]

The Marines successfully secured the New City by Feb. 10. However, the battle in The Citadel had reached a stalemate. GEN Westmoreland sent 1st Brigade, 101st Airborne (Airmobile), into the fight, beginning with 1st Battalion, 327th Parachute Infantry Regiment.[37]

With most of southern Hue cleared, 1/5 Marines arrived in The Citadel in force on CH-46 helicopters Feb. 11. Company A, supported by five tanks from 1st Tank Battalion, crossed the river on LCUs. The tanks entered the Old City through a breach on the southern wall and secured 1st ARVN Infantry Division headquarters.[38] With the outcome of the fight in The Citadel in the balance, LTG Lam finally authorized CAS and artillery fires throughout The Citadel, except for the Imperial Palace.

The 1/5 Marines began offensive operations on the morning of Feb. 13. The initial scheme of maneuver was a fine example of developing combined-arms tactics, techniques and procedures on the fly with two tanks leading, two infantry companies abreast, followed by another in reserve, with the Ontos firing six-gun salvos of canister in direct support.

Unaware that the 1st ARVN Airborne TF had withdrawn to Saigon, the Marines collided with an equally large number of NVA soldiers, who reoccupied the residential area vacated by the withdrawing ARVN paratroopers. The Marines were in an untenable situation, fighting NVA soldiers occupying spiderholes and fortified positions in adjacent buildings. With heavy enemy fire covering its approach routes, the Marines failed to reach their line of departure.[39]

The following day, the Marines attempted to suppress NVA defenses ahead of their advance with field-artillery fire and naval gunfire from destroyers and cruisers offshore as a rolling barrage ahead of the advance. The naval gunfire's relatively flat trajectory and the proximity of friendly troops to

Figure 9. Refugees pass an M48A3. (Photo originally published in **ARMOR**, May-June 1999)

its targets limited its effectiveness. With a break in the weather, F-4 and F-8 fighter-bombers provided CAS. However, its effect was minimal. Because of this, the Marines became more reliant on armor and organic mortars when deteriorating weather precluded CAS and artillery fires. The NVA defenders held the upper hand for the next two days when the Marine and ARVN attack stalled.[40]

The Citadel's narrow streets and tight back alleys disrupted coordination between the M48A3s and the M50 Ontos when visual contact was lost or when buildings blocked line-of-sight radio communications. To simplify command-and-control between the M483s and the M50s, CPT Conwell W. Casey, commanding Company A, 1st Tank Battalion, became TF X-Ray's senior armor commander after gaining the two Ontos platoons from the battalion's anti-tank company.[41]

This task organization of tank and antitank units failed to completely solve command-and-control issues. Infantry company commanders in 1/5 Marines had to send requests for armor support to the battalion command post, where the tank-platoon commander and the infantry-company commander developed target lists and ingress and egress routes.[42]

Tank commanders showed uncommon bravery when they dismounted and went forward with the infantry to reconnoiter for targets. The scheme of maneuver was both simple and effective. The infantry provided close-in protection for the tanks and Ontos, while the armored vehicles engaged the target with overwatching .50-caliber and coaxial machinegun fire. When the tanks backed off, the riflemen surged forward through the breaches created by tank and Ontos fire and then employed riot-control agents to flush out the entrenched enemy.

Early in the fight, the tanks' high-explosive plastic round proved ineffective against the thick stone and masonry walls in The Citadel; when the tankers switched to high-explosive antitank ammunition, four or five rounds ruptured the thick stone walls. Although tanks and recoilless rifles were essential in reducing the enemy defenses,

flying debris injured some infantrymen.

With the change in ammunition, the tanks' shock action and destructive firepower proved invaluable to the riflemen attacking the dug-in enemy. However, infantrymen had a love-hate relationship with armor; some considered them bullet magnets that increased their probability of being wounded, while another Marine later said, "If it had not been for the tanks, we could not have pushed through that section [the southeastern portion of The Citadel]. They [the NVA] seemed to have bunkers everywhere."[43]

Using multiple rounds to create a single breach, the availability of large-caliber ammunition was challenging throughout the battle. The 1/5 and 2/5, lacking tank and recoilless rifle ammunition, at times had to hold up their advances. To conserve ammunition, tanks became battering rams when practical.[44]

The situation worsened Feb. 17 when NVA mortar fire sank an LCU loaded with tank and recoilless rifle ammunition.[45]

After Marine engineers constructed a pontoon bridge alongside the destroyed An Cu Bridge spanning the Perfume River Feb. 13, truck convoys began moving much-needed food and supplies to troops and civilians. Intercepted NVA transmissions on the night of Feb. 16 confirmed they were reinforcing Hue at night. The 1st Brigade, 101st Airborne Division (Airmobile), deployed to the west, and 3rd Brigade, 1st Cavalry Division (Airmobile), finally severed the enemy's lines of communication.

Fire-support coordination became a serious problem with American and ARVN units firing into the small confines of The Citadel. Fratricide and civilian casualties were frequent. BG Oscar E. Davis, one of 1st Cavalry Division's two assistant commanders, became the area's fire-support coordinator to lend order to chaos when he co-located his headquarters with 1st ARVN Infantry Division's headquarters.[46]

The 1/5 Marines, positioned in the southeast of The Citadel continued

operations in that sector, while the 1st Vietnamese Marine Regiment's three-battalion task force began to clear the southwestern section. The 1st ARVN Regiment's mission was to attack through the center of the city toward the Imperial Palace. The NVA, while attempting to reoccupy three buildings they previously abandoned, met overwhelming fire from 1/5 on the night of Feb. 23. The still-tenacious enemy withdrew to subsequent battle positions and fought steadfastly. However, the enemy had reached its culmination point.[47]

The 3rd Infantry ARVN Regiment, with the Black Panther Company – supported by American armor – mounted a surprise attack Feb. 24, recapturing the Imperial Palace and replacing the VC flag with the South Vietnamese flag. The Battle for Hue was over when 4th Vietnamese Marine Battalion reduced the last NVA strongpoint in The Citadel's southwest corner. After 1st ARVN Infantry Division linked up with 1st Cavalry Division, the VC abandoned their positions and the NVA fled westward to their sanctuary in Laos.[48] Two days later the Allies secured the city.

Retired LTC Lee Kichen served in command and staff positions in armor, armored-cavalry and mechanized-infantry units in the United States and overseas. He also served on the Army Staff and Training and Doctrine Command staff. LTC Kichen's military schooling includes Air War College (non-resident), Command and General Staff College, Armor Advanced Officer Course and Armor Officer Basic Course. He holds a bachelor's of arts degree in history from the University of Massachusetts-Amherst, a master's of social-sciences degree in sociology and political science from Pacific Lutheran University and a master's of arts degree in counseling psychology from Chapman College. His awards and honors include the Legion of Merit (one oak-leaf cluster) and Meritorious Service Medal (two oak-leaf clusters).

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Acronym Quick-Scan

AAR – after-action report
ARVN – Army of the Republic of (South) Vietnam
CAS – close air support
CTZ – corps tactical zone
FM – field manual
FMF – fleet Marine forces
LCU – landing craft, utility
LZ – landing zone
MACV – Military Assistance Command Vietnam
MAF – Marine amphibious force
Medevac – medical evacuation
NVA – North Vietnamese Army
RVN – Republic of (South) Vietnam
TF – task force
UO – urban operations
VC – Viet Cong

SADDLES AND SABERS

Filipino Armored Force in the Korean War (1950-1953)

by CDR Mark R. Condeno

On Sunday, June 25, 1950, after an artillery barrage, the 6,000-man-strong 105th Armored Brigade of the North Korean People's Army (NKPA) – with its 120 Russian-built T-34/85 tanks, along with a battalion-sized infantry unit – crossed the border into South Korea. This invasion marked the start of the hostilities in the Land of the Morning Calm that came to be known as the Korean War.

The NKPA assault was coordinated from coast to coast, with the initial offensive beginning on the Ongjin Peninsula and later concentrated along the Uijongbu Corridor that led directly to the Republic of (South) Korea's capital of Seoul. The Republic of Korea (RoK) was caught off guard by this surprise attack. The RoK's small military force faced overwhelming odds, so it sought help from the United Nations Security Council that requested member nations to militarily support the embattled country.

The first to answer that call from Southeast Asia was a young republic that had recently suffered the ravages of war five years earlier (during World War II), and at the time, it was also fighting a growing Communist-led insurgency of its own. The Republic of the Philippines did not hesitate to send its troops into a foreign land and answer a neighbor's call for help to preserve the freedom of its people and the democratic way in which they lived.

The Philippines was one of the first countries to recognize the newly independent RoK in 1949. Filipino assistance and support to South Korea began even before the war with economic aid in the form of food and agricultural materials.

Pre-deployment

In July 1950, 10th Battalion Combat Team (BCT) was designated to be the Philippine contingent to the United Nations Command (UNC) in the Korean Campaign. The 10th BCT was the country's sole armored battalion. Formerly known as 3rd BCT, the Fighting 10th had in its inventory 29 M4A1 composite-hull Shermans and 10 M5 Stuart light tanks left behind by American troops from World War II. The battalion was composed of three rifle companies, a medium tank company (Sherman), a reconnaissance company (light armor) and a field-artillery battery comprised of six M2A1 105mm howitzers.

When the United Nations' request came in, the Philippines deployed 16 M4A1 Sherman tanks and one M18 Hellcat tank destroyer. This small armored force augmented the other Allied armor during the early days of the Korean conflict. The small Filipino armored force was brought in by then-2LT Francisco S. Tamondong, along with two noncommissioned officers, in July 1950.

Unknown to many, the Philippine army of that period possessed roughly 500 American-built M4 Shermans of various models, M7 Greyhound armored personnel carriers, M10 Wolverine and M18 Hellcat tank destroyers, M3 armored halftracks and M7 Priest self-propelled artillery, among other vehicles. As mentioned, these were left behind by U.S. forces after World War II.

It was promised that the 17 tanks deployed to Korea would be replaced with medium and heavy tanks upon arrival in Korea. Unfortunately, the tanks brought in by the Philippine army were destroyed during early operations against the North Korean and Chinese Communist forces. Therefore, history has it that the Filipino soldiers arrived in Pusan without an armored element. However, that is inaccurate.

M24 Chaffee tanks

A few weeks after arrival in Korea, one of the Filipino battalion's officers, LCDR Emilio S. Liwanag, requested permission from battalion commander COL Mariano C. Azurin and the deputy battalion commander, then-MAJ Delfin

Figure 1. In July 1950, 16 M4A1 Sherman tanks were deployed by the Philippines to Korea, brought in by then-2LT Francisco S. Tamondong to augment UNC's armor.

Argao, to secure tanks and heavy weapons from the American depot in Pusan.

Why was a naval officer serving in an Army battalion? A few months before the start of hostilities on the Korean Peninsula, Liwanag finished a gunnery course at Fort William McKinley located in Manilla, the Philippines. With the outbreak of war in Korea, the Philippine army requested he join 10th BCT. His recent training would be put to use seven months later on the ridges of Yuldong, when he commanded the field-artillery battery during a pivotal battle there.

Upon gaining permission from his superiors, Liwanag proceeded to the weapons depot and informed them of the battalion's lack of armored firepower. By the end of the day, the sole naval officer in 10th BCT brought in seven M24 Chaffee tanks and an assorted

array of heavy weapons to the Filipino camp.

It was decided that the tank company under CPT Conrado D. Yap would be reconstituted into a special/heavy weapons company, while the Chaffee tanks were assigned to the reconnaissance company under CPT Marcos T. Garcia. Yap and one of the heavy-weapons-company platoon leaders, 1LT Jose Artiaga Jr., made the ultimate sacrifice during the Battle of Yuldong April 23, 1951.

Yap was a 1949 graduate of the U.S. Army Armor School, then at Fort Knox, KY, and Artiaga was a 1948 graduate of the Infantry Officer's Course at Fort Benning, GA. Yap was posthumously presented the Philippines' highest honor, the Medal for Valor. Artiaga was posthumously presented the U.S. Distinguished Service Cross in 1952.

After his stint with the Filipino

battalion, Liwanag served as deputy commander of the United Nations-Philippine Liaison Group in Tokyo, Japan.

First tank action

Situated in a mountainous area of North Korea, the village of Miudong-Singye was the site of the Filipino tankers' baptism of fire. Entrenched in the village were two battalions of the NKPA, comprising 1,200 soldiers. On Nov. 10, 1950, 10th BCT's Companies A and B, commanded by captains Maximo C. Dumlao and Paulino E. Sanchez respectively, proceeded to the smaller village of Sinmak to decoy the North Koreans from the Filipino unit's original objective of Singye and Miudong.

Without enemy resistance at Sinmak, the Filipinos marched toward Singye. All was calm until a Filipino truck hit a landmine and veered to the side of the road. With that explosion, all hell broke loose as the North Koreans opened fire from entrenched positions. This pinned down most of the Filipino troops and tanks without a chance for them to return fire.

Then, despite the raining metal, 1LT Bonny Serrano braved the enemy fire to lead his soldiers with their 81mm mortar to the base of a ridge overlooking the enemy positions, where they began counterfire. CPT Mariano C. Robles saw Serrano's mortar crew take the hill despite enemy fire and directed his howitzers to counter the NKPA assault.

In a pinned-down position nearby, 1SG Maximo P. Young, one of the Chaffee tank commanders, took a chance and pulled out his tank into a ditch. Then, using the tank's periscope, he saw a large number of enemy soldiers preparing to attack. That's when Young, a 1948 U.S. Army Armor School graduate, mounted his tank's cupola and began firing the tank's .50-caliber machinegun at the onrushing enemy, scattering the North Korean troops.

The tank's machinegun was without any gun shield. Years later, then-MAJ Young remembered the incident as "a kill or be killed situation."

Almost an hour after the battle begun, Filipino troops discovered 42 North Koreans killed in action and roughly 100

Figure 2. CPT Conrado D. Yap aboard his tank.

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Figure 3. Young and his crew aboard a Chaffee. Young, a U.S. Army Armor School graduate, remembered North Korean ambush fire in the Filipinos' march toward Singye as a "kill or be killed situation."

enemy soldiers wounded in action. The Filipinos suffered a number of wounded. Nevertheless, the Filipinos achieved their objective. The battle was witnessed by senior officers of the U.S. Army's 3rd Infantry Division and 187th Airborne Regiment, who sent congratulatory messages and praises for the successful operation to Filipino soldiers.

Filipino tanks to rescue

On April 20, 1951, two U.S. Army M26 Pershing tanks went on a recon patrol above the Filipino troops' area of operations, which was the bank of the Imjin River. The surprise appearance of American tank crews near their camp alerted the Filipino soldiers that something was wrong.

Upon investigation, they learned that American tanks were bogged down in the mud. While trying to extricate U.S. tanks, the Filipinos became targets of Chinese artillery fire. An operation was quickly planned to retrieve the Pershing tanks. A Filipino reconnaissance platoon led by 1LT Victoriano Yapchanco, along with two M24 Chaffee tanks for fire support, got the mission.

As events developed, the Chinese also sent a contingent to capture the American tanks. Within an hour of the Filipinos' deployment, the Chinese opened fire on the Filipinos and Americans. During the ensuing battle, the Filipinos routed and killed eight Chinese soldiers, but more importantly, the Americans got their tanks back and drove them to the Filipino camp.

Saving British battalion

After the Battle of Yuldong, the Filipinos were placed under operational control of the British 29th Infantry Brigade, commanded by BG Thomas Brodie. On April 24, 1951, three Chaffee tanks of 10th BCT, with British Centurion tanks, led the assault on the village of Solma-Ri.

Unfortunately, the combined Chinese Communist and North Korean firepower was superior to the Allies at the site. The lead Filipino M24 tank suffered a hit, instantly killing its crew, led by CPL Zacarias Escaro and composed of PVT Romeo P. Aspiras, PVT Jorge L. Atrero and PVT Amador C. Espanola. To date, the loss is still debated as to whether the tank was destroyed by Chinese anti-tank artillery or by a mine.

The engagement was considered part of the Battle of the Imjin River, where the Filipinos lost one Chaffee tank (and its crew) and one other soldier killed in action. In addition, they suffered 10 wounded and three missing soldiers. The 10th BCT and the British tried to continue but, facing massive enemy firepower, they were stalled just 2,500 yards from some trapped British Gloucestershire Battalion troops.

The Filipinos received orders to withdraw before dusk. As they fell back, the enemy concentrated its fire on them. The 10th BCT soldiers fought on, including their remaining Chaffee tanks. As they approached the village of Masan-Ni, enemy mortar fire targeted the Allied troops. During the melee, SGT Nicolas L. Mahusay detached from his platoon and engaged enemy forces in NKPA bunkers. Thanks to his actions, pinned-down Filipino troops were able to regroup.

Mahusay was posthumously awarded the Philippines Gold Cross Medal.

During this battle for the Imjin River,

Filipino M24 Chaffee tank gunner PVT Luminoso A. Cruz was wounded in action, taking shrapnel in the head.

Task Force Pagala-Quinn

Another notable operation involving Filipino tanks was with the Canadian forces. Detailed information about this action is largely unknown to this day. By May 1951, 10th BCT was attached to the Royal Canadian Brigade, in which jokingly the Filipinos said they were the "Royal 10th BCT." During the counteroffensive, a combined task force was formed under the Canadian army's MAJ James Quinn and the Philippine army's Company C platoon leader 1LT Erdulfo G. Pagala.

TF Pagala-Quinn was composed of 10 tanks – Canadian Shermans and the Philippine army's remaining M24s, along with 10th BCT's pathfinder platoon. Driving northward through the Hantachon River, they swept the area of the enemy and acquired leftover artillery pieces and machine parts used by the North Korean infantry.

Last engagement

The last Filipino tank engagement against the Chinese was also during this period as the Allied offensive moved toward the front. The 10th BCT command post was secured by a platoon led by 2LT Faustino Villanueva, along with two Chaffee tanks. There was a belief that a Chinese attack was impeding, so Villanueva positioned the tanks ahead of the infantry to block the road to the command post.

Sure enough, using the pitch-black night as cover, Chinese soldiers were able to infiltrate Allied lines to reach the area behind the tanks. The enemy was head directly toward 10th BCT's command post. TSGT Crispin Paciente, one of the Chaffee tank commanders, ordered gunner PFC Antonio F. Agaton to fire blindly at the Chinese to their rear. This woke up the crew of the other Filipino Chaffee tank, whose commander asked, "What are you were firing at?"

Paciente informed the other tank's commander it was the Chinese. At first the other tank's commander, CPL Rafael Membrado, jokingly teased Paciente that he and his crew were just dreaming. Then suddenly, Membrado

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Figure 4. An M24 Chaffee crew led by TSGT Crispin Paciente.

recognized the enemy presence and alerted his own crew.

Paciente shouted the daily password into the dark of night, which was not answered as Chinese troops scurried past.

Agaton shouted, "It's the enemy, shoot!" After which, Paciente sprayed the area with the tank's .50-caliber machinegun while Agaton fired in support with his Thompson sub-machinegun.

Paciente then shouted for driver CPL Aurelio Budomo to back up the tank to illuminate the area. The illumination revealed the bodies of two Chinese soldiers on the ground. The enemy soldiers had been carrying a 60mm mortar with an assortment of ammunition toward the command post. Paciente and his crew were praised by 10th BCT officers for their feat.

Lessons-learned
During the duration of the Korean War and the years immediately following, the Philippines deployed five BCTs. However, of the five BCTs deployed from 1950 to 1955, only four were equipped with tanks. This presented problems for the Filipino armored force.

The Korean War was the first overseas joint armed-forces operation for the Philippines. As such, the Filipino armored force showed its prowess on the battlefield by attacking entrenched enemy positions and providing fire support during the battles of Naktae-dong, Yuldong and Eerie Hill. It also provided an opportunity for the armored force to hone its skills by operating in a multinational command.

Hindsight indicates that post-World War II provision of a heavy tank to the Filipinos, such as the U.S. M26 Pershing, would have been a tactical and strategic advantage to the Allied forces in Korea, especially during the opening years of the conflict there.

Conclusion
The tank operations described in this article were mostly about the first Philippine contingent, 10th BCT. Later, the 20th, 19th and 14th BCTs of the Philippine Expeditionary Force to Korea (PEFTOK) were also equipped with Chaffee and Sherman tanks. This brief narrative is a compilation of some the Filipino tankers' first overseas missions to document their exploits and preserve their legacy.

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ACRONYM QUICK-SCAN
BCT – *battalion combat team (Philippine usage)* **NKPA** – *North Korean People's Army* **PEFTOK** – *Philippines Expeditionary Force to Korea* **RoK** – *Republic of Korea* **UNC** – *United Nations Command*

263RD ARMOR REGIMENT

NEVER SURRENDERED

The red of the chief and the wavy partition line allude to the unit's origin as coast artillery. Campaign-participation credits earned by elements of the regiment are shown by the gold fleurs-de-lis, denoting campaigns in World War I in France, and the dragon, representing World War II campaigns in Europe and Africa, in which elements of the regiment participated; the barbs on tongue and tail of the dragon, symbolic of arrowheads, signify assault landings in Sicily and Southern France, again by certain elements of the regiment. The distinctive unit insignia was approved Oct. 26, 1970.

Ride with the Armor & Cavalry

THE UNITED STATES ARMY ARMOR BRANCH IS THE COMBAT ARM OF DECISION.

We are the premier mounted maneuver force comprised of the best trained, best led, best equipped, and most lethal Tankers and Scouts in the world. Soldiers first, we are experts in the art of maneuver warfare; mounted and dismounted reconnaissance and security operations; and the employment of combined arms and joint capabilities on the battlefield.

Armor and cavalry troopers thrive in conditions of ambiguity, uncertainty, and complexity; comfortable away from the main body --- out front or on the flanks --- and decisive when leading it. We operate with a mission command mentality always seeking opportunities to seize, retain, and exploit the initiative; creating and preserving freedom of action for our force while denying the enemy options.

Armor and cavalry leaders combine the superior capabilities of our equipment with the ingenuity of our Troopers to find, fix, close with and destroy the enemies of our nation through combinations of mobility; precise, lethal, and overwhelming firepower; and devastating shock effect.

Armor branch is a team of teams ready to fight and win anytime, anywhere, under any conditions of battle.

FORGE THE THUNDERBOLT!