ARMOR

Mounted Maneuver Journal

Summer 2023

Increasing Lethality in a Large-Scale Combat Operations Environment

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As the primary purpose of **ARMOR** content is the professional development of Armor Branch soldiers, **ARMOR** focuses on materials for which the Armor School has proponency: armored, direct-fire ground combat systems not serving primarily as infantry carriers; weapons used exclusively in these systems or by CMF 19-series enlisted Soldiers; miscellaneous items of equipment which armored and armored cavalry organizations use exclusively; training for all 19-series officers and CMF 19-series enlisted Soldiers; and information concerning the training, logistics, history and leadership of armor and armored cavalry units at a brigade/regiment level and below, to include threat units at those levels.

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CHIEF OF ARMOR'S HATCH

**BG Michael J. Simmering
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DOTMLPF-P Integration an Armor Transformation through 2030

On June 13, 2023, the Chief of Staff of the Army signed the updated Army Regulation (AR) 5-22, *The Army Force Modernization Proponent and Integration System*, which moved force-modernization proponency for Armor to the Office of Commandant of Armor. This comes at an inflection point for the Armor Branch as the Army restructures for 2030.

For the first time since moving from Fort Knox, KY, the Armor School has proponency for Armor across doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy (DOTMLPF-P). Yet the work of creating capability for the Army has never been due to the work of a single office. The Next-Generation Combat Vehicle Cross-Functional Team will continue to perform the leading role in material development – a process in our branch that requires years of foresight. The Maneuver Combat Development and Integration Directorate and doctrine offices at the Maneuver Center of Excellence must continue to play leading roles in future-force design and doctrine development.

Providing the operational force what it requires is a team effort; it always has been. Over the coming months, our goal is to work with our key partners to create a comprehensive strategy for you – our Armor leaders – that will allow the branch to transform into

the force required for 2030 and beyond.

Regardless of these regulatory changes, our trajectory as a branch will remain soundly grounded in the notion of enabling our Armor and Cavalry formations to fight and win during sustained land-combat operations as part of the Army and joint force. Since the Army reinvigorated our focus on large-scale combat operations beginning in 2014, Armor Branch has strived to institutionalize a culture of mounted warfighting expertise across the branch.

While the force maintains a high operational tempo, armored brigade combat teams (ABCTs) remain in high demand to continue to train and deploy in support of combatant commands. Armor leaders must continue to embrace what makes our branch experts: mastery of the basic tasks in mounted-maneuver warfare required to fight and win against a peer threat.

Our vision at the U.S. Army Armor School remains generally unchanged. We have updated it slightly based solely on the rebalancing across the branch that must take place, including the introduction of the 19C military-occupation specialty (MOS) beginning in Fiscal Year (FY) 2025. Even as we build and plan an Armored Force that meets the Army of 2030's requirements, we remain committed to

reinforcing the warfighting expertise, propagated throughout the branch by leaders at echelon, that begins in the schoolhouse through rigid adherence to established standards.

Given this vision, our priorities at the Armor School have been firmly grounded in the work that lies ahead for our branch. First, we must reinforce a culture of warfighting expertise among all ranks of the branch – a job that begins with the reinforcement of standards for training, leader development and maintenance here at the U.S. Army Armor School.

Second, we must train and develop today's Armor and Cavalry formations to fight on the modern battlefield. We must adapt our training to the realities of armored warfare presented by increased lethal, long-range precision fires, enemy lethal unmanned aerial systems and competition in the electromagnetic spectrum.

Third, we must begin executing the task of building the forces of 2025-2029 based on acquisition decisions made over the last few years.

Fourth, we must finalize our design for an Armor 2030 formation that provides the capabilities required by the National Defense Strategy and the current Army Strategy. These future designs must be based on the realistic

expectation of which matured technologies will provide increased capability to the force rather than romanticized perceptions of war that provide little value to the Soldiers putting their lives at risk for our nation.

Finally, we must support Army Futures Command as they look beyond 2030 to further develop concepts and capabilities for the Army of 2040.

Given these priorities, this next year will be exciting for the Armored Force. In the short-term, we will continue to focus on supporting manning for ABCTs, but beginning in FY25 we will work to position the branch to smoothly transition the manning of our mechanized-infantry platforms to the 19C MOS. We will welcome the M10 Booker to the Armored Force and support establishment of mobile protected firepower in the XVIII Airborne Corps once again. We will continue the readiness-level progression pilot with several ABCTs in the force as we iterate a standardized operational training path for our crews to improve lethality.

We will host the Sullivan Cup best-tank-crew competition April 29 to May 3, 2024, with the best crews from across the Armored Force as well as from allies. This competition will test the fundamental skill of our forces' finest mounted warriors and continue to serve as a baseline for how the force is doing with regard to training and leader development.

It's my honor to serve as the 54th Chief of Armor here at Fort Moore, GA. Thanks to the previous Chief of Armor, BG Thomas M. Feltey, who over the last two years moved the Armor School forward in the right direction. It's our goal to continue to build on that great foundation and integrate the new authorities of AR 5-22 to shape a comprehensive DOTMLPF-F

Ride with the Armor & Cavalry

THE UNITED STATES ARMY ARMOR BRANCH IS THE COMBAT ARM OF DECISION

We are the premier maneuver force comprised of the best trained, best led, best equipped, and most lethal mounted warriors in the world. Soldiers first, we are experts in the art of maneuver warfare, 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; are comfortable away from the main body — out front or on the flanks — and decisive when leading it. We always seek opportunities to seize, retain, or exploit the initiative; create and preserve 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!

Thunderbolt 7   Thunderbolt 6

Acronym Quick-Scan

AR – Army regulation
DOTMLPF-P – doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy
FY – fiscal year
MOS – military-occupation specialty

strategy for the Armored Force from today to 2030. I look forward to establishing an open dialogue with leaders throughout the branch and Army as we continue to work together on the critical issues facing the Armor Branch and our Armor and Cavalry troopers.

GUNNER'S SEAT

CSM Waylon D. Petty
Command Sergeant Major
U.S. Army Armor School

New Armor School CSM and Focus Areas

I assumed the seat as the Armor School command sergeant major (CSM) June 27 and to say that I am humbled and excited to be here is an understatement. To follow the footsteps of great leaders and work alongside the legend – George DeSario, director of the Office of Chief of Armor – is an honor. I understand I have some big shoes to fill.

The 54th Armor commandant, BG Michael Simmering, quickly empowered me to assist him in his priorities. As the Armor School CSM, I am here for the Armored Force, and I look forward to working with leaders across the branch to do what is needed for the Army.

When it comes to manning the operational force, there are quite a few initiatives and challenges that lie ahead. We will stand up the 19C military-occupation specialty in the first quarter of Fiscal Year 2025. This means our branch will grow and, more importantly, will increase the lethality of the Bradley Fighting Vehicle (BFV). Bottom line, I am working closely with Human Resources Command (HRC) to ensure we are properly manning the force at the right time as we navigate the upcoming changes to the Armored Force's structure.

CSMs play a vital role in coaching/mentoring Soldiers and leaders within their formations. The Assignment Satisfaction Key-Enlisted Module is a tool to provide options. However, when it comes to talent management, CSMs have an obligation to provide professional development to ensure Soldiers and leaders are doing what is right for their career development and ultimately for the Army. I am working with HRC on this as well to message this appropriately across the Armor community.

I have started the initial analysis of our professional military education, specifically the Advanced Leader's Course for our 19Ks and 19Ds, to determine if it is enabling the tactical expertise to employ multiple mounted-maneuver entities on the battlefield. As is, the course is professional and focused on the tactical level – as it should be. However, we will examine opportunities to produce experts that are more platform-centric. Currently Fort Moore, GA, offers a Tank Commander Course and a Bradley Commander Course that zero in more on the platform itself, which provides tank/Bradley commanders the necessary competencies to perform in the operational force. Along with after-action reviews and end-of-course critiques, I will be reaching out to the force to ask for your feedback on the competency level of our staff sergeants and what you would like to see.

I mentioned the BFV earlier, but if you have not heard, its successor has a new name: the XM30 Mechanized Infantry Combat Vehicle,[1] which will bring a plethora of modernization components to increase its "shoot, move and communicate" capabilities. Also, the M10 Booker, formerly known as mobile protected firepower, was announced recently and will allow 19Ks the opportunity to serve at Fort Liberty, NC.

I am very excited to serve as the Armor School CSM, and my line is always open. I look forward to hearing back from the Armor community, and thank you for your commitment to our Soldiers.

Train 'em and retain 'em! Forge the Thunderbolt!

Notes
[1] M. Reinsch; "New mechanized-infantry combat vehicle prototype contract awarded to two vendors"; https://www.army.mil/article/267922/new_mechanized_infantry_combat_vehicle_prototype_contract_awarded_to_two_vendors; June 26, 2023.

ACRONYM QUICK-SCAN

BFV – Bradley Fighting Vehicle
CSM – command sergeant major
HRC – Human Resources Command

Counterreconnaissance, Cavalry Corps and Division Operations

by CPT J.A. Perkins

The Army published a new Field Manual (FM) 3-0, *Operations*, in October 2022. Then FM 3-98, *Reconnaissance and Security Operations*, was published in January 2023. At Fort Cavazos, TX, 1st Battalion, 7th Cavalry Regiment, is now testing the division cavalry (divcav) task-organization and mission.

Considering these new developments in task-organization and doctrine, this article is an analysis of those updates through a multidomain operations (MDO) lens to determine capabilities and gaps, as well as implications in future Cavalry missions. The purpose of this article is to clearly articulate the definition of *counterreconnaissance* and why understanding it is important to future MDO.

Counterreconnaissance

Counterreconnaissance, counter-reconnaissance, or counter reconnaissance? FM 3-0 uses both *counterreconnaissance* and *counter-reconnaissance*.[1] FM 3-98 uses *counterreconnaissance*.[2] Training and evaluation outline (T&EO) reports use *counter-reconnaissance* and *counter reconnaissance*.[3] This question encapsulates the confusion surrounding *counterreconnaissance*, where multiple interpretations of what it means to conduct counterreconnaissance can all be true simultaneously.[4]

FM 3-98 defines *counterreconnaissance* as "a mission task that encompasses all measures taken by a commander to counter enemy reconnaissance efforts."[5] *Counterreconnaissance* as it is currently defined is too broad, so that it has no meaning or no shared understanding.

The problems with this catchall mission task are highlighted using the following hypothetical scenario.

A squadron commander orders troop commanders to conduct counterreconnaissance missions. The squadron commander orders troop commanders to execute a screen, with the primary task of conducting counterreconnaissance, but the squadron commander wants each troop commander to provide a backbrief with their proposed course of action (CoA).

The first troop commander has trained his/her unit using T&EO "Plan Counter Reconnaissance Measures at Company Level" and focuses on camouflaging the formation to prevent observation, and then the troop commander develops a communication plan for the troop.[6] This troop commander takes active steps that provide his/her formation passive benefits.

The second troop commander has recently read FM 3-98 and knows the

"purpose of counterreconnaissance is to destroy, defeat or repel all enemy reconnaissance elements," and chooses to focus on creating permissive engagement criteria to facilitate the destruction of the enemy reconnaissance.[7]

The third troop commander only plans to execute the screen mission. Whatever action the troop takes to protect friendly-force information and engage the enemy reconnaissance as part of the screen is the troop's "counterreconnaissance," but deliberately planning counterreconnaissance separately is not an action the troop commander intends to undertake. The troop commander plans the screen and anything that occurs during the screen that leads to the destruction of the enemy reconnaissance is "counterreconnaissance" because it is already a part of "all actions taken."[8] For this troop commander, counterreconnaissance is not a tactical mission task per se but a byproduct of the screen mission.

Which commander is correct in this hypothetical scenario? Each commander could justify his/her chosen CoA using current doctrine or training aids. However, the hypothetical scenario highlights common misunderstandings. How to conduct counterreconnaissance is not shared among Cavalry professionals. FM 3-90-1, *Offense and Defense,* Volume 1, states that "both the commander and the subordinate must have a common understanding of the 'what' and 'why' of the operation" in reference to each tactical task.[9]

Old vs. new definition

The current definition of counterreconnaissance is "a tactical mission task that encompasses all measures taken by a commander to counter enemy reconnaissance and surveillance efforts. Counterreconnaissance is not a distinct mission but a component of all forms [types][10] of security operations."[11]

However, I propose the following definition: "Counterreconnaissance is a distinct tactical mission task that is the sum of active efforts by the commander to counter enemy reconnaissance efforts by destroying, defeating or repelling all enemy reconnaissance ele-

ments within capabilities."

Counterreconnaissance needs to be a distinct mission vs. a component of all types of security for the following reasons:

- A tactical mission task is the specific activity performed while executing a type of operation, and reconnaissance and security (R&S) are shaping operations.[12]

- By comparison, a route reconnaissance may be executed as part of an area or zone reconnaissance or a reconnaissance-in-force. Route reconnaissance is not treated as a component of all reconnaissance operations, or tactical mission task that is not a distinct mission because it can be executed as its own distinct tactical mission task.

- Being a distinct mission implies deliberate planning and unique tasks that must be completed.

The proposed new definition focuses explicitly on active efforts because the current counterreconnaissance definition includes passive effects as part of the sum of all measures taken by a commander. Specifically, "Plan Counter Reconnaissance Measures at Company Level" includes as part of conditions the requirement to "develop a passive and active counter-reconnaissance [*sic*] plan."[13] The standard for this task is to develop a plan that "prevents the enemy from collecting information about friendly operations and destroys enemy reconnaissance elements."[14]

The performance measures that are evaluated for "go/no-go" status are camouflaging, developing a communications plan, establishing critical friendly zones and conducting troop-leading procedures.[15] Each performance measure is an active task with passive effects.

Passive effects are better captured by *masking*, a new concept introduced in FM 3-0. However, FM 3-0 does not provide a definition of masking. In a recent interview, retired COL John Antal provides a working definition of masking: "Masking is the full-spectrum, multidomain effort to deceive enemy sensors and disrupt enemy targeting."[16] The passive elements of counterreconnaissance are better

captured within this definition of masking because they achieve the desired deception and disruption. The passive efforts currently included in counterreconnaissance doctrine may contribute to success but arguably cannot directly cause the enemy reconnaissance to be defeated, destroyed or repelled.

The primary purpose of a Cavalry formation conducting any security mission is not simply to survive but to prevent the enemy from collecting intelligence about friendly information and CoAs. To do that, active measures must be taken to deny the enemy commander access to his reconnaissance assets and the information those assets provide.

The Cavalry performs a critical purpose for its respective commanders: to be the eyes and ears of the commander, enabling the commander to visualize, understand and direct subordinate units. The Cavalry fights the enemy reconnaissance as a zero-sum equation. The Cavalry prevents the enemy commander from being able to visualize, understand and direct his subordinates. Specifically, counterreconnaissance enables the friendly-force commander to get inside the enemy's decision cycle by attacking the enemy's reconnaissance assets and simultaneously places the friendly-force commander in a position of relative advantage on the battlefield.

The final concept to discuss is the focus on destroying, defeating and repelling all enemy reconnaissance elements within capabilities. A screen mission includes a requirement to conduct "counterreconnaissance to destroy or repel enemy reconnaissance units," but the primary purpose of a screen is to provide early warning to the protected force.[17] The proposed primary purpose of counterreconnaissance as a distinct tactical mission task is the destruction or defeat of the enemy reconnaissance to blind the enemy commander.

As an analogy, use the examples of *reconnaissance-in-force* and *movement-to-contact*. A *movement-to-contact* is an "offensive operation designed to develop the situation and establish or regain contact."[18] Contrast that

mission with a *reconnaissance-in-force*, which is "designed to discover or test the enemy's strength, dispositions and reactions or to obtain other information."[19] A reconnaissance-in-force develops the situation to create favorable conditions for subsequent tactical tasks just as a movement-to-contact does. The focus of doctrine lies in the purposes of the respective missions.

A movement-to-contact is an offensive operation in which the goal is "to make initial contact with a small element while retaining enough combat power to develop the situation."[20] A reconnaissance-in-force is "an aggressive reconnaissance, which develops information and intelligence in contact with the enemy to determine and exploit enemy weaknesses."[21] The distinction is important because the specific tasks that must be accomplished change with the change in purpose. The intent is critical to mission command and disciplined initiative, and the distinction implies a difference in action by the follow-on force.

A movement-to-contact follows the characteristics of the offense and is an offensive task. If achieved, it enables the follow-on force to conduct an attack. A reconnaissance-in-force follows the fundamentals of reconnaissance and develops the understanding of the operational environment for the commander. In the discussion of a screen vs. counterreconnaissance, the purpose of conducting a screen is early warning and the purpose of conducting counterreconnaissance is the destruction of enemy reconnaissance. Recognizing that distinction in purpose necessarily creates different tasks that must be accomplished to be successful, provide a different intent for mission command and offer different follow-on actions for the commander.

Training
Units can train to be successful at counterreconnaissance. Building out a full mission-essential task list is beyond the scope of this article, but the T&EO report, "OPFOR [Opposing Force] Execute Counterreconnaissance," is currently the best doctrine for training and executing counterreconnaissance.[22] Given the inclusion of

passive measures, the conditions and standards need to be modified, but the planning and execution performance steps and measures are a good framework for how counterreconnaissance can be executed.

During planning, the Cavalry formation can determine the objectives, identify collection requirements and task-organize to defeat enemy reconnaissance elements.[23] During execution, Cavalry formations can use ground maneuver, aviation, unmanned aerial vehicles or electronic-warfare assets to locate, monitor and set conditions for actions to destroy or defeat enemy reconnaissance.[24] Cavalry formations also execute movement and maneuver to identify routes, probable lines of contact and kill zones that support indirect fire and direct fire to destroy or defeat enemy reconnaissance elements.[25]

So what?
In my previous article, "Multidomain Operations in Large-Scale Combat: A Cavalry Perspective," in **ARMOR**'s Spring edition, I articulate the need for distinct Cavalry formations at the corps and division levels. The underlying premise of both articles is regardless of how force modernization comes to fruition regarding the Cavalry, even if a corps does not have an organic Cavalry formation, the corps should still have a Cavalry formation in large-scale combat operations (LSCO).

In combat, if a corps commander does not possess an organic Cavalry element, the commander of the joint, all-domain fight is going to requisition either a Cavalry unit from a subordinate unit, most likely a Cavalry squadron, or assign a R&S operation to a subordinate maneuver force, likely a brigade combat team. Thinking through what a corps R&S operation might entail in LSCO is the reason the definition and tasks associated with counterreconnaissance, as discussed in this article, are so important.

First, in terms of reconnaissance missions, corps will operate in a new theater where the commander's understanding of the operational environment is not complete. This implies the use of a reconnaissance-pull

technique to develop the situation by conducting zone-reconnaissance missions. A focus on counterreconnaissance training increases survivability during zone reconnaissance.

Second, the possibility of a Cavalry formation being able to realistically perform a guard or cover that prevents observation and direct or indirect fires in a multidomain environment is problematic. A screen mission is achievable, but with the scenario of a corps attempting to disrupt and disintegrate anti-access/area-denial (A2/AD) zones, providing early warning to the corps commander has limited impact. Executing counterreconnaissance is achievable to deny the enemy commander information in countering the disruption and disintegration of his/her A2/AD zone by friendly forces.

Cavalry formations serve their respective commanders; the corps Cavalry mission is different from the divcav mission. Historically, Cavalry formations conduct security missions more than reconnaissance operations.[26] For both penetration divisions, how is the divcav placing the division in a position of relative advantage on the battlefield? If the division is penetrating and security is the more common operation, then the divcav is likely executing a flank guard. If the divcav is conducting reconnaissance operations, then the corps has already developed familiarity with the operational environment, and divcav executes area reconnaissance to push into areas where specific priority intelligence requirements for the division commander can be answered.

Conclusion
In summary, this article argues that counterreconnaissance is more correctly defined as the deliberate actions taken to defeat, destroy or repel the enemy's reconnaissance assets. The passive effects of current counterreconnaissance doctrine are better captured as part of the masking concept. If this redefinition is accepted in future doctrinal publications, supporting T&EOs require adjustments and the framework for those changes is supported by the T&EO "OPFOR Execute Counterreconnaissance."

While divcav is currently being

developed and implemented, a clear gap remains at the corps level. It is critical to begin thinking through what those operations entail in a MDO environment before force structures are designed to fulfill future requirements. This article offers counterreconnaissance as the most suitable security mission for a corps Cavalry formation, relative to alternative security missions. Counterreconnaissance assists the corps commander in achieving decision-cycle dominance.

CPT Joshua Perkins is a Cavalry Leader's Course (CLC) instructor, assigned to 3rd Battalion, 16th Cavalry Regiment, Fort Moore, GA. His previous assignments include commander, Headquarters and Headquarters Company, 1st Battalion, 12th Cavalry Regiment, Fort Cavazos, TX; commander, Company B, 3rd Battalion, 8th Cavalry Regiment, Fort Cavazos; battle captain, Train-Advise-Assist Command-South, 1st Cavalry Division, Kandahar, Afghanistan; and division battle captain, 1st Cavalry Division, Fort Cavazos. CPT Perkins' military schools include CLC, Maneuver Captain's Career Course and the Army Reconnaissance Course. He has a bachelor's of science degree in finance from the University of South Florida and a master's of arts degree in international relations from the University of West Florida. CPT Perkins' awards include the Meritorious Service Medal and the Afghanistan Campaign Medal with C device.

Notes

[1] FM 3-0, *Operations*, Department of the Army, October 2022.

[2] FM 3-98, *Reconnaissance and Security Operations*, Department of the Army, Jan. 10, 2023.

[3] Task 71-9-6510 and Task 171-720-0008, "Plan Counter Reconnaissance Measures at Company Level," Department of the Army, July 22, 2022.

[4] For clarity, *counterreconnaissance* is used throughout this article. If a direct quote is used from doctrine, *counterreconnaissance* replaces any misspelling.

[5] FM 3-98.

[6] Task 171-720-0008.

[7] FM 3-98.

[8] Ibid.

[9] FM 3-90-1, *Offense and Defense*, Volume 1, Department of the Army, March 2013.

[10] FM 3-98 now refers to types of R&S vs. forms. Doctrine referenced in this article that includes the term "form" is changed to "type or types" throughout the rest of this article.

[11] FM 3-90-1.

[12] Ibid.

[13] Task 171-720-0008.

[14] Ibid.

[15] Ibid.

[16] Retired COL John Antal, "Sooner Than We Think: Command Post Survivability and Future Threats with retired COL John Antal," "The Convergence – An Army Mad Scientist podcast," Aug. 4, 2022, https://theconvergence.castos.com/podcasts/5043/ episodes/62-sooner-than-we-think-command-post-survivability-and-future-threats-with-col-ret-john-antal.

[17] FM 3-98.

[18] FM 1-02.1, *Operational Terms*, Department of the Army, March 2021.

[19] FM 3-98.

[20] Army Doctrine Publication 3-90, *Offense and Defense*, Department of the Army, July 2019.

[21] FM 3-98.

[22] Task Number "71-CO-8506, OPFOR Execute Counterreconnaissance," Department of the Army, Nov. 11, 2016.

[23] Ibid.

[24] Ibid.

[25] Ibid.

[26] Nathan A. Jennings, "Reconsidering Division Cavalry Squadrons," School of Advanced Military Studies, May 25, 2017.

Acronym Quick-Scan

A2/AD – anti-access/area-denial
CLC – Cavalry Leader's Course
CoA – course of action
Divcav – division cavalry
FM – field manual
LSCO – large-scale combat operations
MDO – multidomain operations
OPFOR – opposing force
R&S – reconnaissance and security
T&EO – training and evaluation outline

The AIM Cycle: Two Sides of a Coin

by LTC Karl M. Harness

The U.S. Army uses the Assignment Interactive Module (AIM) to conduct hiring for officer assignments across the force. With the implementation of Integrated Personnel and Pay System-Army, the Army is sunsetting AIM as well as the Officer Record Brief (ORB)/resume and is transitioning to the Soldier Talent Profile (STP). Even though the Army is transitioning to STP, the hiring process will remain the same and the lessons-learned from the AIM cycles equally apply as most of the STP information is the same.

Many officers, both participants and hiring officials, have been unsure about the best way to navigate the process, as there is no regulation or doctrine that provides detailed methods for AIM participants and hiring officials. This leads to some frustration within the ranks, so this article seeks to assist those individuals by providing some techniques based on lessons-learned from serving as both a participant and hiring official.

Front of the coin (AIM participant)

ORB. Your ORB is your first introduction to the hiring official and is your first impression. It is extremely important that you ensure that your ORB is up-to-date and is clearly understood. Professional officers should review their ORB annually and ensure the information is accurate. This will limit the number of changes required before entering the AIM cycle and will also serve you well if you are applying for jobs outside the AIM cycle. An ORB that is not updated is an immediate indicator of your professionalism and how much you are concerned with your career.

Your unit S-1 is your primary point of contact to ensure your ORB is updated and accurate. But while they can make the corrections, checking and managing the correctness of your ORB is *your* responsibility. Work with your S-1 to clearly outline your deployment history, your family status and your previous assignments in your ORB.

While these areas are not disqualifiers for a potential assignment, they do provide an immediate look into your experience and any potential special considerations that may impact your assignment: Exceptional Family Member Program, Married Army Couples Program and others.

Your assignment history should be easily understood by officers outside your branch. Do not leave assignment info that has the unit listed as "TRP A, 2 AR CAV" and the duty position listed as "Incoming Personnel." Instead, work with your personnel office or branch manager and have the unit properly reflect the common name, such as A/1/2 CR, and the duty position is properly reflected, such as "platoon leader." This goes a long way in helping the hiring official understand what your experience is.

Resume. Your resume is where you get to explain your experience more in depth. Just like applying for a civilian job, write your resume for the assignment you are seeking. Be clear and concise, and include items that are not already on your ORB. Remember, the hiring official is potentially looking at *a lot* of resumes, so you need to make yours stand out.

Maximize your summary and state what you are looking for up front, key developmental (KD), broadening, etc. and state a little bit about yourself. The summary is what the hiring official will likely read in full, while all other sections of the ORB are glanced over. Put your summary into Word, conduct a spell-check, read it aloud to yourself, and make sure it makes grammatical sense. A poorly written summary is an indicator of your ability to communicate effectively via the written word. Summaries with poor grammar and a lot of spelling mistakes are an indicator of your attention to detail.

The rest of the resume should use bullet statements. The hiring official does not have a lot of time to read a novel about your life, and it is obvious when you are reaching for relevance. Bulletize items that are not present in your ORB or expand on assignments or events that need it. Avoid paragraphs and verbose statements. Again, specify things that are pertinent to the assignment you want. A clear and concise resume written for the assignment you want will enhance your chances of getting the one-for-one match.

The interview. The interview is your last opportunity to leave a lasting impression on the hiring official. The interview can make or break your selection (just as in civilian hiring), and you must properly prepare for it.

Before the interview, you should research the assignment you are interviewing for, develop questions about the assignment and conduct a self-reflection of your strengths and weaknesses (at a minimum). Rehearse the interview with a counterpart if possible so that you are prepared to answer questions confidently. Unprepared applicants are obvious during the interview and are an indicator of their desire for the assignment, research skills and professional work ethic.

Keep in mind that the interview is a two-way street. Not only are you being interviewed by the hiring official,

Table 1. Example of ORB with units and jobs clarified.					
Organization	**Station**	**Loc**	**Cmd**	**Duty title**	**DMOS**
Ops CO, HQS, III Corps	Ft Cavazos	1TX	FC	Deputy G-33	02A0000000
HHC, 3BDE, 1Cav Div	Ft Cavazos	1TX	FC	Bde executive officer	19A0000000
HHC, 6-9 Cav	Ft Cavazos	1TX	FC	Bn operations officer	19A0000000
Cobra Tm, Ops Grp	Ft Irwin	1CA	FC	Observer/controller	19A00C6000
HHT/1/11ACR	Ft Irwin	1CA	FC	Troop commander	19A00C6000
D/1/11 ACR	Ft Irwin	1CA	FC	Company commander	19B0000000
HHT/1/2CR	JBLM	1WA	FC	Squadron AS3	02A0000000
C/1/2CR	Ft Polk	1LA	FC	Platoon leader (FWD IZ)	19C0000000

Table 2. Example of resume with summary paragraph and bulleting of other sections.

SUMMARY	EDUCATION
I am a highly motivated officer seeking the privilege of serving as a battalion commander or professor of military science (PMS). My experience throughout my career, both good and bad, has given me the tools to be successful at either position, with my most recent position as the deputy G-33 for III Corps. My Joint and combat experience has prepared me well, and it would be an honor to share this experience with the younger generation. Whether it is as a battalion commander preparing Solders for combat or as PMS preparing the next generation of officers, I view them both as the greatest priviledge for an officer to participate in. Outside the Army, I enjoy various hobbies and interests that I do with my wife and kids.	-Master's thesis was on the impacts of sleep deprivation on skills retention in a training environment -Pursuing PhD from Really Good University in adult education
CIVILIAN	**ASSIGNMENTS**
-Hiring manager for Super Soldier Industries, responsible for recruiting and screening all employees -Project manager for GreatSoldier Inc., responsible for management of tactical-gear procurement throughout the United States	Combined/Joint experience: -Adviser to Royal Saudi Land Forces -Adviser to Afghan Nation Security Forces -G-33 Operations officer for USFOR-A Senior command and staff experience: -8th U.S. Army (Republic of Korea) – G-33 -III Corps (FCTX) – XO for commanding general -1SFAB (OFS) – staff adviser to 1/201 ANA
ADDITIONAL SKILLS AND CERTIFICATIONS	**CULTURAL EXPERIENCES AND TRAVEL**
-PMP certified -Lean Six Sigma certified -Published author in **ARMOR** magazine	I have worked with various nations professionally: -Iraqi police as a platoon leader in OIF -ANA as an adviser -British Army as part of Eagle Owl -RoK Army while on assignment to Korea Places of travel: Mexico, Italy, Afghanistan, Iraq, England, Argentina

but you are interviewing them! The assignment information may be enticing, but after you gather more information from the interview, you may just change your mind about whether that assignment is the right fit for you. This is why your research and prepared questions are important in this process.

Back of the coin: hiring official

Reviewing candidates: indicators. When the AIM cycle opens, the hiring official must narrow the field of candidates for the assignment. There are many tools the hiring official can use to narrow the pool. Self-professed knowledge, skills and behaviors, preferencing officers, additional-skill identifiers and current career-progression status are all methods the hiring official can use to narrow the talent pool.

Preferencing officers should often move to the top of the list, followed by officers who are in the current career-progression status that the job demands (such as pre-or post-KD). These two methods are indicators of officers' potential to perform their duties well and their desire to work in the position.

Also, any officer who reaches out first is showing greater interest than their peers and should be given higher consideration, as their motivation for the position is much more evident.

Interviewing: indicators. After narrowing the pool of candidates, the next step is the interview process. The interviews for the AIM cycle are no different than a civilian job interview. You must prepare your questions in advance and be prepared to answer questions from the candidate. The interview is a two-way street, and it is possible for the hiring official to give a bad interview (usually the result of failing to prepare).

Hiring officials should base their questions on requirements for the job and not simply, "What are your strengths and weaknesses?" Reviewing job requirements help draft thoughtful and useful questions that help the interviewer determine if the candidate meets the needs of the position. This also enables the interviewee to determine if the position is a good fit for them as well:

- Does the position require significant writing requirements?
- Will the officer need to interact with senior leaders on a routine basis?
- Will the officer need to lead planning

efforts, or will he/she conduct routine operations?

Asking more specific questions focused on job requirements enables the hiring official to make an informed decision on candidate ranking if there isn't a one-to-one match.

Several common indicators can arise from the interview that will determine the officer's compatibility for the position he/she is seeking:

- **The candidate's ability to communicate.** Does the officer promptly return emails? Is he or she on time to the interview? How well do they speak in conversation? These are indicators of a professional and dedicated officer. If the officer is self-aware, he/she may know that he/she is lacking in certain areas here and is working to address them, a positive indicator. Failing to respond, being late or poor verbal communication skills or writing ability can also be strong negative indicators.

- **The candidate's research capabilities.** When you ask candidates if they have any questions about the position, ideally they will have many well-thought-out questions. This will indicate if officers have researched the position and how serious they are about the assignment. Any officer who states they just felt like ranking it is usually a poor fit and is an indicator of their professionalism.

- **The candidate's motivation for the position.** This last one comes directly from the interaction, both written and in the actual interview. An officer who routinely makes contact to stay on the radar of the hiring official and is excited at the chance to interview is clearly a motivated officer worthy of higher consideration. If the officer seems as if he/she is going through the motions or has an attitude regarding the position, then the hiring official should consider moving them to the bottom of the pile. This is not to say that the officer needs to preference the position No. 1. Rather, even if the officer says the position is in their top three or is strongly considering the position, then they should remain a top contender if they are meeting all

Weight	3	2	1	2	1	9		Notes
Name	Div or above experience	Adviser experience	Joint experience	Previous KSA experience	Master's degree or higher	Total	Bn cdr	
	3	2	1	0	1	7		Responded; SFAB; 10 Mtn Div Plans
	3	0	1	0	1	5		Responded; potential HAAP; experience at Pentagon
	3	2	1	0	1	7		Multinational experience (OAR)
	3	2	1	0	1	7		SFAB; 4ID HQs; 7th ATC (Ger)
	3	2	1	0	1	7		SFAB; 1AD plans officer
	3	2	1	1	0	7		OPM SANG adv exp; USMTM armor adv 2018
	3	0	1	0	1	5	X	Bn cdr; experience in Turkey/Poland as scholar
	3	0	0	0	1	4	X	MCoE dir of tng; I Corps experience
	0	2	0	0	1	3	X	MCTP chief; USMA instructor/prof
	0	2	0	0	1	3	x	Bn cdr; former OC at NTC (not interested)

Top recommendation								
Special consideration								
Preferenced position								

Table 3. Example comparison chart for hiring official.

your other requirements. Keep in mind: in accordance with AIM hiring instructions, the candidate has to offer this information to you.

Comparison. Once the interviews are complete, the hiring official needs to rack and stack the candidates in AIM. To assist with this decision, a technique to use is to adapt the course-of-action comparison method we often use in the military decision-making process.

Table 3 is an example chart used in the last two AIM cycles.

To effectively use the chart, the hiring official needs to consider the requirements of the job, assign weight to the categories and determine whether higher is better or lower is better. When applying this comparison in the AIM cycle, it is usually best to use higher is better with the most significant requirements weighted the highest. A technique to determine how to weight the categories is to ask the sitting officers what their opinion is. They are working the job day to day and can provide valuable insight that the hiring official may not be considering. The hiring official should use and reference the chart throughout the process, starting with the ORB review, results of the interview and any notes that may assist in the final determination.

Final thoughts

A few final thoughts on the AIM cycle and how to make the most of the process.

Participants:
- Ensure your ORB is updated and write your resume for the job you are seeking.
- Prepare for the interview with self-reflection and research of the position.
- Be honest in what you are looking for.

Hiring official:
- Establish your hiring criteria based on the job requirements.
- Prepare your interview questions based on the job requirements.
- Conduct a well-informed analysis of the candidates through a comparative analysis method.

The AIM cycle works best with all parties actively participating in the job hunt. This unique hiring process assists leaders and subordinates in determining the best fit for their organizations and themselves. This is the lowest level of talent management, and it requires all officers to fully participate. Your active participation in the AIM cycle, regardless of which side of the coin you are on, will not only help you in managing your Army career, but also assists you in developing skills that will benefit you when you leave the Army and enter the civilian work force.

LTC Karl Harness is the Maneuver Branch chief of the Land Forces Division, U.S. Military Training Mission, Riyadh, Kingdom of Saudi Arabia. Previous assignments include G-33 operations officer, 8th Army, Camp Humphreys, Republic of Korea; chief of operations, Security Force Assistance Command (SFAC), Fort Bragg, NC; deputy chief of Security Force Assistance Brigade Assessment and Selection, SFAC, Fort Bragg, NC; executive officer, 6th Squadron, 9th Cavalry Regiment, 3rd Brigade, 1st Cavalry Division, Fort Hood, TX; and battalion S-3, 3rd Battalion, 8th Cavalry Regiment, 3rd Brigade, 1st Cavalry Division, Fort Hood, TX. LTC Harness's military schooling includes Combat Adviser Training Course, Command and General Staff College, Cavalry Leader's Course, Maneuver Captain's Career Course, Airborne School, Air-Assault School and Armor Officer Basic Course. He holds an associate's of arts degree in liberal arts from New Mexico Military Institute, a bachelor's of arts degree in communications (radio/television/film) from California State Fullerton and a master's of science degree in adult and continuing education from Kansas State University. His awards and honors include the Bronze Star Medal, Meritorious Service

Medal, Order of Saint George Bronze Medallion and Draper Armor Leadership Award.

Armored Fighting Vehicles of the World

T80BVM MBT

The T80BVM, the latest version of the T80, entered Russian service in 2017. It has a crew of three and weighs 46 tons. Features include an improved 2A46M-5 125mm main gun and improved autoloader, enabling the use of APFSDS Svinets-1 and Svinets-2 rounds with tungsten and depleted uranium penetrators. Other features include an Irtysh fire-control system and Sosna-U gunner's sight. It can also employ the 9M119M Refleks ATGM. The T80BVM was first Russian tank fitted with the Relikt explosive reactive armor package. It has an improved GTD-1250TF gas turbine engine with 1,250 horsepower.

The Power of the Armored Company/Team in Urban Combat:
Dealer Company, 4th Battalion, 64th Armor in Sadr City

by COL Mark R. McClellan

This article sets out to show the power of the armored combined-arms company/team in the urban fight using Sadr City's Operation Gold Wall – executed by 3rd Brigade Combat Team, 4th Infantry Division (3/4BCT) – in Spring 2008.

Operations in and around Sadr City in 2008 can be used to better understand the challenges that future maneuver units will face fighting in urban environments. The fighting in Sadr City was in a free-fire combat zone, with the U.S. military using dismounted, motorized and armored forces to gain and hold urban terrain. They were contested by Sadrist militia members, who were intent on maintaining control of their lines of communication into and out of the urban enclave and on holding key terrain within the city. The combat was fierce, with long-duration engagements between the two sides.

Tactical lessons-learned by U.S. forces during the fight in Sadr City can still be applied in future fights.

This article will look through the lens of the Delta Company "Dealers" of 4th Battalion, 64th Armored Regiment (D/4-64) to show how it tackled the problem of executing sustained defensive combat operations in the dense urban environment of Sadr City, Baghdad, Iraq. D/4-64 was one of four companies that had a part in building a concrete wall on Route Gold across Sadr City during that operation. All these companies had to figure out how to secure dismounted infantry in a free-fire enemy area for long durations. This article will look at how D/4-64 accomplished the mission.

Dealer Company's experiences in Sadr City reinforced the following urban-warfare lessons that will be discussed in this article:

- Sustain long-term combat power by using the minimum amount of combat power necessary to accomplish the mission;
- Maintain 360-degree security at all times; and
- Use the power of armored vehicles.

Background

Dealer Company deployed in October 2007 for a 15-month tour in Iraq. Initially the company was assigned to Southwest Rashid in western Baghdad. During the 2008 Sadrist uprising in Iraq, enemy attacks against the coalition headquarters in the Baghdad International Zone (Green Zone) intensified. These attacks originated in Sadr City. U.S. forces in Baghdad responded by sending armored companies to northeast Baghdad from across the city.

In mid- March 2008, without warning, D/4-64 was informed by its battalion headquarters that it had six hours to move from western Baghdad to northeastern Baghdad during the Spring 2008 Sadrist uprising. Dealer Company headquarters, two tank platoons and one mechanized-infantry platoon moved from western Baghdad to northeast Baghdad near Sadr City.

A major enemy operation during the Sadrist uprising was to deploy rail-launched rockets in Sadr City and fire them at the Green Zone. In response to these rocket attacks, coalition forces seized the southwest section of Sadr City to force the rocket bases farther north. This would deny terrain to the Sadrist elements, increasing the range to the Green Zone and reducing the effectiveness of their rocket attacks.

When D/4-64 arrived in eastern Baghdad, it was initially attached to 4th Brigade, 10th Mountain Division, for a "four-day" mission. Dealer Company ended up spending more than two months in Sadr City, first with 4th
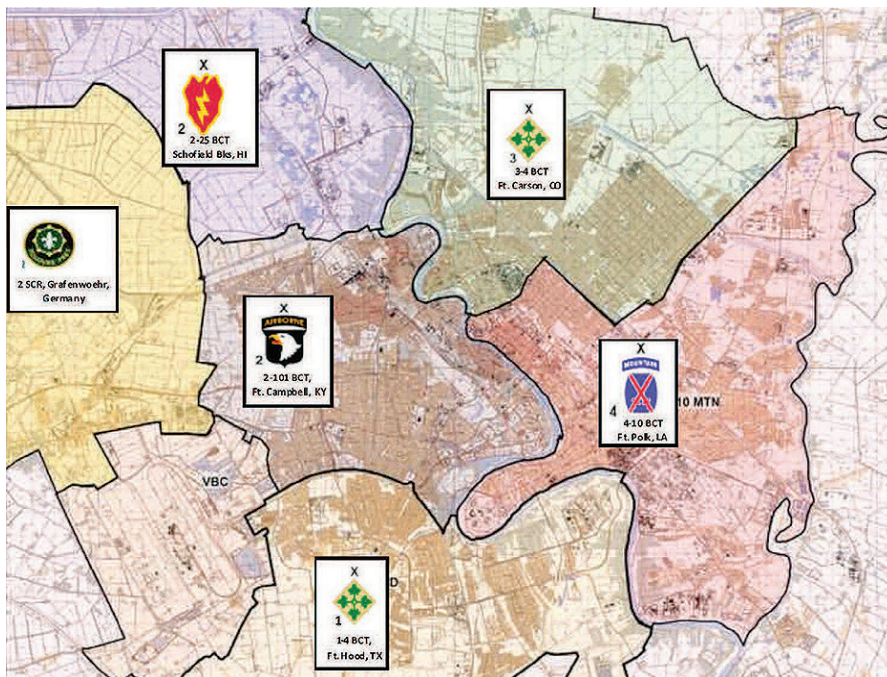

Figure 1. Disposition of maneuver brigades. *(Source: Multi-National Division-Baghdad, "Fort Hood Community Leaders' [videoteleconferce] April 25, 2008, used in David E. Johnson, M. Wade Markel and Brian Shannon's monograph* **The 2008 Battle of Sadr City: Reimagining Urban Combat.** *Santa Monica, CA: RAND, 2013.)*
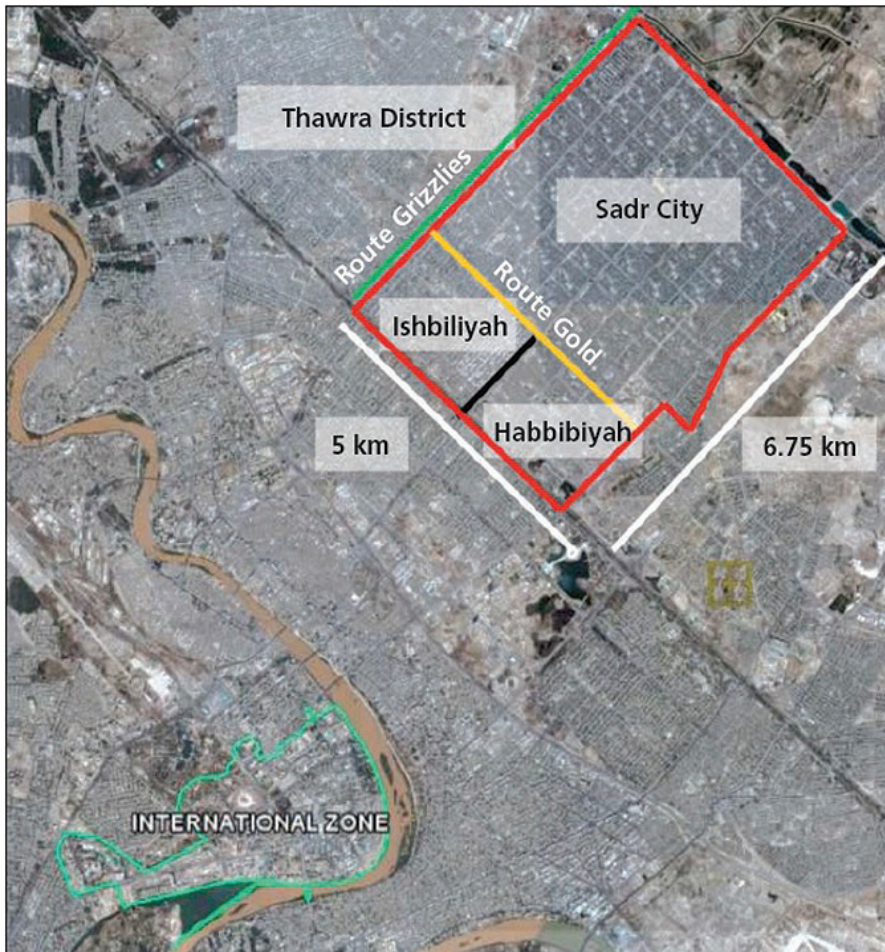
Figure 2. The Green Zone and Sadr City. *(Map provided by 1st Squadron, 2nd Stryker Cavalry Regiment, used in Johnson, Markel and Shannon's **The 2008 Battle of Sadr City: Reimagining Urban Combat**. Santa Monica, CA: RAND, 2013)*

Brigade, 10th Mountain Division, and then with 3/4BCT.

For the first three weeks, the company conducted blocking positions along the southern border of Sadr City to support U.S. and Iraqi Army efforts to seize the southwest portion of Sadr City up to Route Gold. This operation was called Stryker Denial and lasted from March 26 to mid-April (see Figure 2). Route Gold ran across Sadr City and was the limit of advance for the coalition attack. The route bisected across Sadr City's lower third.

In mid-April 2008, D/4-64 was directed to move to Joint Security Station (JSS) Sadr City and was attached to 1st Battalion, 2nd Stryker Cavalry Regiment (1-2 SCR, part of 3/4BCT) for Operation Gold Wall. JSS Sadr City was located with the southern portion of Sadr City. Our company's mission was to assist in building a concrete wall across Sadr City, which would prevent Sadrist

militia members from being able to travel into southwestern Sadr City and eliminating their ability to launch rockets that could hit the Green Zone. The wall also cut off the Sadrists from their revenue-generating activities in southwest Sadr City.

The 1-2 SCR was the land-owning unit in charge of Sadr City based out of JSS Sadr City. They executed the wall-construction mission with 1st Battalion, 68th Armored Battalion (1-68 AR), a battalion organic to 3/4BCT. On April 15, 2008, Charlie Company, 1-68 (C/1-68) began constructing the wall from the southeast corner of Sadr City. From mid-April until May 15, D/4-64 rotated 13 hours on and 13 hours off (trading off the battlespace initially with C/1-68), building a wall constructed out of T-walls (12-foot-tall cement barriers) along Route Gold.

Fighting along Route Gold during the wall-build phase was intense. It

occurred in a dense urban environment. Enemy fighters had freedom of movement northeast of Route Gold and could use the urban terrain to get close to the wall-erection site. The dense terrain provided U.S. forces on Route Gold with very little standoff. To counter the lack of standoff, coalition forces countered with a mix of armored vehicles and infantry platoons.

Initially 1-2 SCR attempted to use Stryker wheeled armored vehicles to accomplish the wall build, but they were not survivable enough. 1-2 SCR realized they needed to use the D/4-64 M1 Abrams tanks and M2 Bradleys with infantry squads to build the wall. This provided the protection, firepower and manpower required to accomplish the task.

Construction of the wall was a 24-hour-a-day operation. D/4-64 would conduct 13 hours of wall construction and then pass the responsibility over to C/1-68 Armor (another armor company in the brigade), who would then pass over responsibility back to D/4-64. This 13-hour rotation continued until the wall was complete. (During the early phases of the wall build, B/1-14 and the 1-2 SCR scout platoon also erected parts of the wall, but their light Stryker vehicles were not heavy enough. Also, another tank company, C/1-6 Infantry, replaced C/1-68 Armor in early May).

During the entire wall-build operation, the units were under direct and indirect fire from Sadrist insurgents. During 13 hours of emplacement, the hope was to emplace 100 T-walls. During some rotations, though, the company emplaced less than 10 T-walls due to the intensity of enemy attacks and improvised explosive devices (IEDs).

Along with tank and infantry platoons, engineer units provided route clearance, operated the crane and supported erection equipment. The 1-2 SCR and 3/4BCT logistics units delivered the T-walls to the site from a staging area. In addition, tactical psychological-operations (PSYOPS) units delivered messages to the people to stay clear of the wall-build site. (This was combined with previous statements to the populace to leave the area.)

Splitting combat power for long-term defense of the wall-build site

The main effort during the wall build was the infantry squad on the ground, attaching and detaching concrete T-walls from a crane. Delta Company used a security perimeter to protect the infantry Soldiers as they executed this task. This combined-arms security perimeter enabled D/4-64 to provide security for dismounted infantry for upward of 13 hours at a time while progressing 100-150 meters along Route Gold. During this 13-hour-plus period, the security element was under fire from Sadrist militia members, who used rifle fire, sniper fire, rocket-propelled grenades (RPGs), grenades and IEDs to attempt to defeat or inflict casualties on the wall-build effort.

So how do we execute the mission while still preserving time for maintenance and regenerating combat power? The easy answer would have been just to use the entire company to execute the mission. But we didn't know how long it would last. We also didn't know if this was the only mission we would be directed to execute.

To address this, Dealer Company split itself into two elements to generate combat power to execute the wall-build missions. Splitting up the company/team enabled D/4-64 to execute operations and sustainment simultaneously while also preserving armored combat power for future missions. Both elements possessed similar combat power; the primary differences were in personnel and vehicles. (See Figure 4 for a breakdown of each wall-build element.) This also preserved combat power in case our higher headquarters needed to surge on the mission or execute other missions.

Each element was led by either the company commander or the company executive officer in a headquarters tank. Our company first sergeant was also in the tank when our executive officer led the element. Each element had a tank platoon, a mechanized-infantry section and one to two squads of infantry. Each element shared the same fire-support team Bradley, whose personnel rotated. A route-clearance team with a vehicle, a PSYOPS team with a vehicle and an Army engineer crane would attach to the wall-build element before each mission. The crane was operated by 821st Horizontal Engineer Company.

For the tanks, each element could refit and conduct maintenance on their vehicles before their next rotation. Same for the Bradley crews. The dismounted infantry soldiers would generally be out on missions more frequently.

Due to casualties and the environmental leave policy for Operation Iraqi Freedom, around 15 percent of our company was unavailable. Out of a company strength of about 100 personnel, we usually had 85 on hand to execute missions. We used headquarters and maintenance personnel to fill these roles in our tank crews and our infantry squads. Our nuclear-biological-chemical specialist filled a tank-loader position for many missions. We had maintenance personnel as tank loaders as well.

In addition to the ground elements, significant support came from brigade unmanned aerial systems (UAS), attack aviation and close-air-support (CAS) aircraft. Special Operations Forces (SOF) sniper teams also worked alongside the wall-build elements to suppress Sadrist elements. Direct-support artillery provided precision muni-

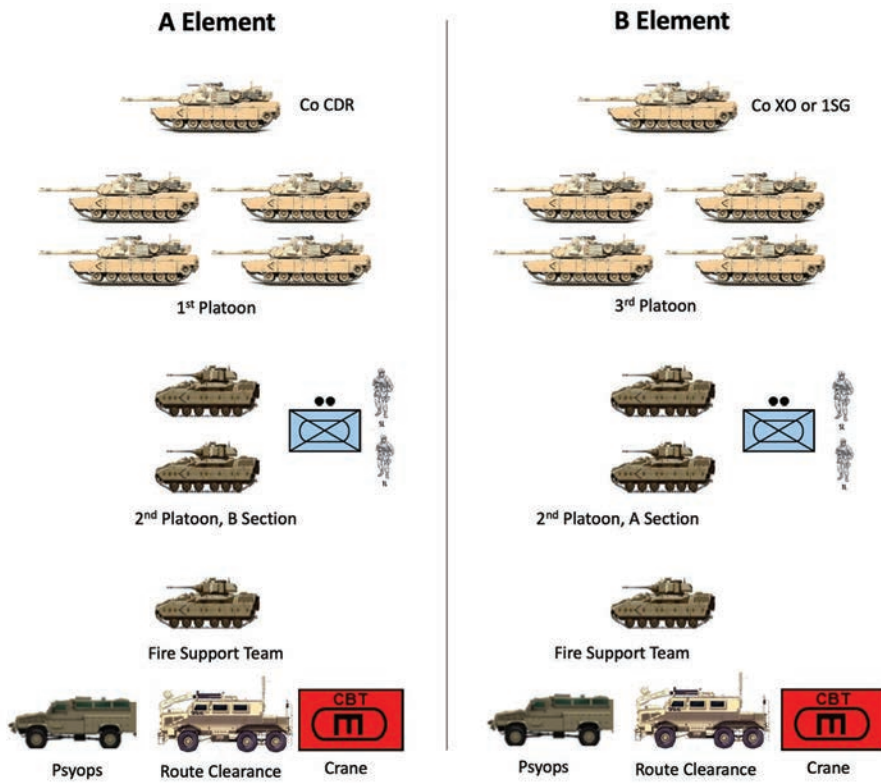**Figure 3. Infantry Soldiers emplace a section of T-wall.**

Figure 4. D/4-64 wall-build elements. *(Graphic by author)*

tion fires as well.

Armored and mechanized forces must always include requirements for conducting maintenance when evaluating the amount of combat power required for a mission. Armored and mechanized company-command teams must ensure that units they might be attached to understand this, especially if those units are light or motorized maneuver units or non-maneuver units.

Achieving 360-degree security

So how do we protect and enable the infantry squad on the ground emplacing the barriers? The infantry squad could not be exposed, as they were under constant observation and threat from small-arms and RPG fire. How do we use the armored vehicles to surround and protect the infantry squad?

To protect the infantry on the ground, we created a three-level perimeter. The intent was to achieve 360-degree security with the dismounted infantry Soldiers as the centerpiece. They were the first level of the perimeter. The second level was the Bradley Fighting Vehicles. The third level was the tanks. The route-clearance element focused on clearing the route. We used a dismounted observation post (OP) to provide oversight of the whole wall-build site. We tied the perimeter together with interlocking sectors of fire.
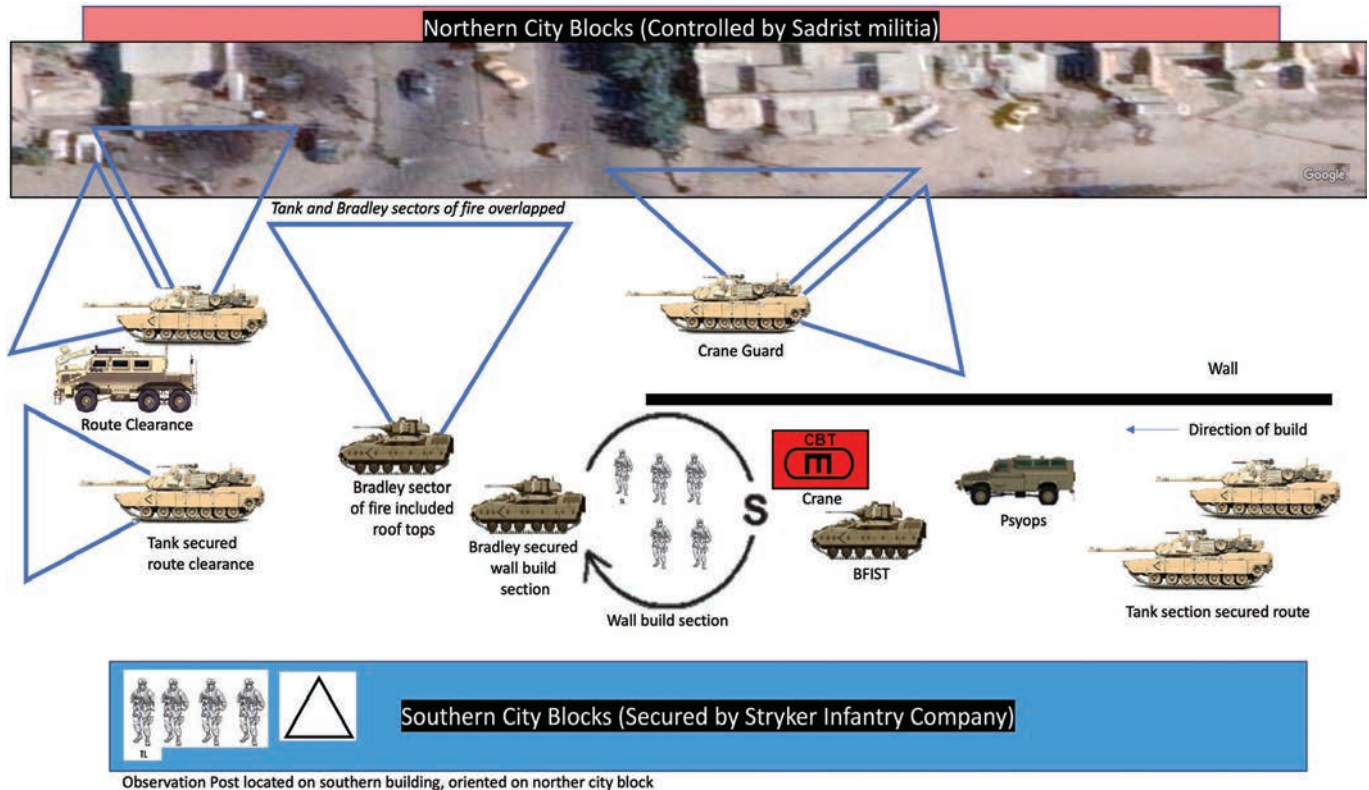
Following is a breakdown of each ele-

Figure 5. Visual representation of the security at the wall-build site. *(Graphic by author)*

ment of the security perimeter:

- Priority was the dismounted infantry squad. A Bradley provided security directly to that squad. The infantry squad could also use the Bradley as a bunker during enemy contact. A medic was also located with this Bradley.

- Stryker infantry Soldiers from 1-2 SCR secured the southern city blocks before the wall-emplacement mission began after they attacked to secure Route Gold.

- The D/4-64 infantry platoon emplaced an OP on the rooftop of a southern building near the wall-build site. They provided observation plus rifle and machine fires as needed. As the wall-build mission entered the Ishbiliya district of Sadr City, D/4-64 stopped using the OP, as it became too dangerous.

- A tank section provided security for the route from the wall-build site to the turn-off route that went south from Route Gold. That security location varied depending on where the wall-build team was along Route Gold.

- A tank provided security on the direct-north side of the wall to protect the crane and the dismounted infantry. The company executive officer or I usually manned this position, as it provided good observation of the wall progress and site security. My tank's sectors of fire were northern and eastern approaches to the wall-build site.

- The other Bradley's sectors of fire were the northern city block and rooftops.

- There were two western tanks. The northwestern tank's sector of fire was down alleyways. It would position itself differently each time to ensure it could cover approaches from the many alleys on the northern city blocks. One of the western tanks was also required to secure the route-clearance vehicle, a Husky mine-resistant, ambush-protected vehicle.

- The other tank in that section's sector of fire was directly down Route Gold. It supported the route-clearance vehicles as the element moved down the street. It also used canister rounds to attempt to defeat enemy IEDs along the route.

- Route clearance, provided by 237th Engineer Company, was the most forward vehicle in the element as it moved along Route Gold.

- The company fire-support team in the Bradley fire-support team (BFiST) vehicle provided more security along the route and called for artillery, attack aviation and CAS fires.

- PSYOPS continuously communicated a message to ensure that noncombatants stayed off Route Gold.

For a month, dismounted infantry Soldiers emplaced T-wall 24 hours a day. The wall-build element moved slowly, sometimes emplacing less than 10 T-wall sections in a 13-hour period. Sadrist militia members flocked to the T-wall construction site to attempt to stop the wall's construction. The enemy used explosively formed projectile IEDs, machinegun fire, sniper fire, RPGs, anti-armor grenades and even Molotov cocktails to attempt to defeat the wall-build elements.

The wall-build elements could have been sitting ducks. Due to combined arms, though, they weren't. This mission would not have succeeded without the armored combined-arms team that executed it. Dismounted infantry Soldiers on their own were not survivable enough and didn't have enough firepower. Armored vehicles alone could not maneuver the T-wall into place or provide observation. Armored vehicles also couldn't secure the significant number of city blocks seized by 1-2 SCR. Tanks and Bradleys did not have the acuity of the route-clearance elements.

However, the BFiST connected the element with the supporting brigade UAS, attack aviation, CAS, cannon and rocket fires. Our OP provided observation of dead space and other avenues of approach that the armored vehicles could not observe. All these elements came together to provide security for the dismounted infantry Soldier on the ground installing T-wall.

Power of armored vehicles in urban environment

In Sadr City, the Abrams tanks and Bradley Fighting Vehicles were key to the success of the wall-build mission. While the Stryker infantry vehicles were excellent in enabling infantry squads to seize a significant portion of Sadr City below Route Gold, the motorized vehicles were not survivable enough to maintain the static positions the wall-build mission required. The tanks and Bradleys could remain stationary for long periods, sometimes up to 18 hours, on Route Gold and protect the infantry squads as they executed the wall-build mission.

The power of the Abrams tank. In our positions, the Abrams tank provided near-360-degree sectors of fire with the three machineguns and 120mm main gun. Our M1A1 tanks were equipped with the Tank Urban Survival Kit, which provided upgraded thermal sites for the .50-caliber machinegun and a thermal viewer for the tank driver, a remote site on the loader's M240 machinegun, reactive armor on the vehicle skirts and a V-shaped hull to reduce the impact of buried explosives. The tank's main gun delivered 120mm rounds that cracked and exposed building façades. The tank also shot canister rounds down Route Gold, defeating explosively formed projectiles. Its three machineguns (a .50-caliber M2 and two 7.62mm M240s) were lethal down alleyways and in windows.

The tank also provided protection to dismounted infantry by its size and mass. The tank in the "crane guard" position moved with the infantry squad and provided the squad cover as it executed T-wall emplacement. The enemy on Route Gold even tried to use a Molotov cocktail to light Tank D66 on fire while it was on crane guard. The crane-guard position sometimes had limited stand-off from the northern city blocks. The Molotov cocktail did not have much effect on the tank, but it did demonstrate the effectiveness of the driver's thermal viewer, as he was able to identify the individual throwing it.

Also, the tank was used to recover

friendly vehicles. In one instance, Tank D14 recovered a Stryker vehicle from Route Gold. D14 fired its smoke grenades to conceal dismounted recovery operations, allowing U.S. personnel to hook the Abrams up to the Stryker.

On Route Gold, D/4-64 Abrams tanks were engaged by enemy machineguns, .50-caliber sniper weapons and explosively formed projectile IEDs, traditional and anti-armor RPGs and anti-armor grenades.

The power of the M2 Bradley Fighting Vehicle. The Bradley Fighting Vehicle was also a significant asset. The Bradley is a much less sustainment-intensive vehicle compared to the Abrams tank. Its diesel engine is much more fuel efficient and requires much less maintenance than the tank. Our Bradley vehicles had a much higher operational readiness rate than the tanks for our two months in Sadr City.

The Bradley is also highly mobile. It is more compact than the Abrams and can turn a sharp angle more quickly. Its electric turret turns extremely quickly, covering a 360-degree sector

of fire much quicker than the tank. The Bradley has a 25mm gun and a 7.62 mm machinegun in its turret. The Bradley's 25mm main gun can elevate much higher than the tank's main gun or machineguns. (On Route Gold, our Bradley sectors of fire included close-in rooftops and the top floors of buildings.) The Bradley ammunition type was very useful in an urban environment. The Bradley's 25mm gun could deliver high-explosive rounds that could assist in clearing rooms of enemy personnel. After Tank D66 had the Molotov cocktail thrown on it, the infantry-platoon sergeant was able to engage the individual who threw the cocktail. The Bradley cleared the entire room the enemy was in with 25mm high-explosive rounds. Lastly, the Bradley provides a mobile bunker for the infantry squad.

Future implications

In Sadr City, our mission was over-watched and supported by a squadron and brigade structure, including reconnaissance (through unmanned aerial vehicles and supporting SOF and logistics.

While on Route Gold, we were the main effort for the squadron and brigade we were under. This enabled us to focus on the close fight to protect our infantry. In future urban battlefields, companies and platoons are expected to be as protected and lethal with much less support. Future armored combined-arms company/teams will still have to remain in the fight in dense urban environments for days and weeks at a time. There won't be enough higher-level battlefield-enabling assets to spread across brigade units fighting in that environment, as whole brigades will be spread throughout the urban environment. Future company-level leaders must incorporate combined-arms integrated 360-degree security in the urban fight to survive and win.

These units must also be prepared to establish outposts within the urban areas to conduct maintenance and combat-power-regeneration activities. In Sadr City, the JSS and the combat outpost provided secured locations to execute refit operations. This came with a cost to secure these sites. Without
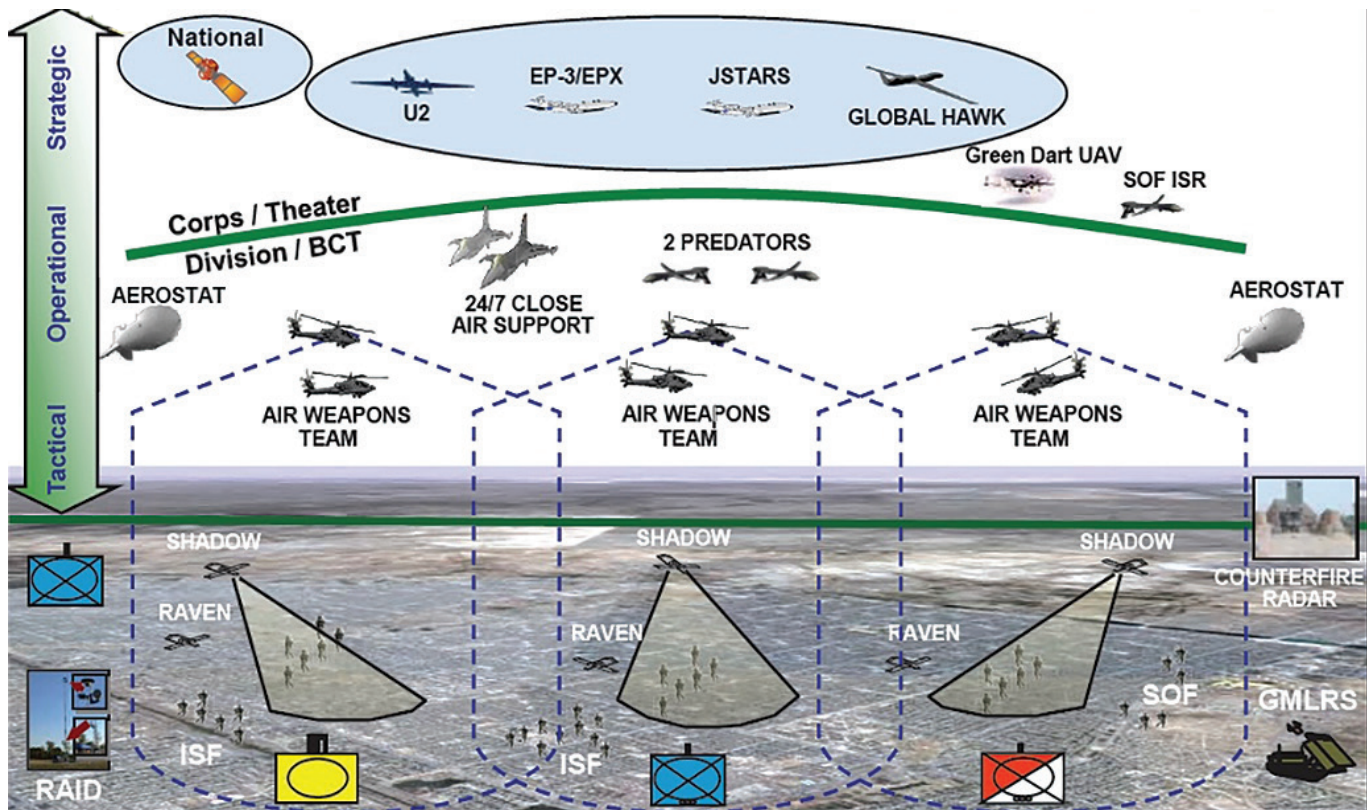

Figure 6. The combined-arms team. Other assets included other government agencies, signal-intelligence elements, Deployable Ground Station, sniper teams, SOF intelligence, surveillance and reconnaissance, and Phased Array Radar Pods on CAS.

combat outposts, maneuver units may have to give up terrain to move to areas outside urban areas to conduct refit.

The Army is working to develop the technology to provide UAS and drone technology controlled at the company level. This will enable company commanders to expand their security umbrellas, increasing their stand-off with enemy elements. Until then, using dismounted OPs in advantageous positions and infantry to secure dead space and difficult terrain – along with overlapping fields of fire and placing most survivable vehicles in positions to dominate the enemy – is how to stay in the urban fight and win.

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ACRONYM QUICK-SCAN AND UNIT ABBREVIATIONS

1-2 SCR – 1st Battalion, 2nd Stryker Cavalry Regiment
1-68 AR – 1st Battalion, 68th Armored Battalion
3/4 BCT – 3rd Brigade Combat Team, 4th Infantry Division
C/1-68 – Charlie Company, 1-68
D/4-64 – Delta Company, 4th Battalion, 64th Armored Regiment
BCT – brigade combat team
CAS – close-air-support
IED – improvised explosive device
JSS – Joint Security Station
OP – observation post
RPG – rocket-propelled grenade
UAS – unmanned aerial system

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.

SCHMAL, GEORGE W.
Rank and unit: Blacksmith, Company M, 24th New York Cavalry. Place and date of action: Paines Crossroads, VA, April 5, 1865. Entered service: Buffalo, NY. Born: Germany. Date of issue: May 3, 1865. Citation: Capture of flag.

SCHMIDT, CONRAD 1SG
Unit: Company K, 2nd U.S. Cavalry. Place and date of action: Winchester, VA, Sept. 19, 1864. Born: Germany. Date of issue: March 16, 1896. Citation: Went to the assistance of his regimental commander, whose horse had been killed under him in a charge, mounted the officer behind him under a heavy fire from the enemy and returned him to his command.

SCHOONMAKER, JAMES M. COL
Unit: 14th Pennsylvania Cavalry. Place and date of action: Winchester, VA, Sept. 19, 1864. Entered service: Maryland. Born: June 30, 1842, Pittsburgh, PA. Date of issue: May 19, 1899. Citation: At a critical period, gallantly led a cavalry charge against the left of the enemy's line of battle, drove the enemy out of his works and captured many prisoners.

SCHORN, CHARLES
Rank and unit: Chief bugler, Company M, 1st West Virginia Cavalry. Place and date of action: Appomattox, VA, April 8, 1865. Entered service: Mason City, WV. Born: Germany. Date of issue: May 3, 1865. Citation: Capture of flag of the Sumter Flying Artillery (CSA).

SCHWENK, MARTIN SGT
Unit: Company B, 6th U.S. Cavalry. Place and date of action: Millerstown, PA, July 1863. Born: Germany. Date of issue: April 23, 1889. Citation: Bravery in an attempt to carry a communication through the enemy's lines; also rescued an officer from the hands of the enemy.

You Need to Play Wargames

by MAJ Patrick O'Keefe

In their May 2020 guidance for professional military education (PME) and talent management, the Joint Chiefs of Staff directed that "[c]urricula should leverage live, virtual, constructive and gaming methodologies with wargames and exercises involving multiple sets and repetitions to develop deeper insight and ingenuity. We must resource and develop a library of case studies, colloquia, games and exercises for use across the PME enterprise."[1]

The Maneuver Captain's Career Course (MCCC) took the guidance to heart and applied it to our core mission of producing masters of troop-leading procedures (TLPs). For the past year, the small-group leaders (SGLs) at MCCC developed, integrated and implemented an educational company-level wargame titled **Force on Force** with positive qualitative and quantitative results for students.

Wargaming has a multitude of benefits that extend beyond the classroom, however. Maneuver units, especially battalion level and below, should conduct regular game exercises where they can practice tactics against a thinking enemy and build competence and confidence with rapid tactical decision-making.

MCCC is a 23-week course, one cornerstone of which is teaching company-level tactics and TLPs. Students produce and brief operations orders (opords) for five tactical scenarios for a grade. Students also receive the opportunity to conduct three practice TLP repetitions, one for each of the middle three modules.

In the past, the only opportunity students had to test the feasibility of their opords was during the tank and mechanized-infantry company attack module (A2): students went to the Close Combat Tactical Trainer (CCTT) and fought a simulated mission based on a plan developed during that module's practice repetition. The handful of students who performed in leadership positions at CCTT commented positively on their experience, while those who performed as drivers, gunners and loaders did not receive as much benefit. Students frequently commented on the limited nature of execution opportunities; they clearly had the appetite for a chance to apply their learning in an execution manner, not only in planning.

This lack of multiple opportunities to test execution of plans at MCCC was the problem we identified and sought to solve with the development of **Force on Force**.

Wargames: more than just a staff tool

Wargaming as discussed in this article refers to "analytic games that simulate aspects of warfare at the tactical, operational or strategic level. They are used to examine warfighting concepts, train and educate commanders and analysts, explore scenarios and assess how force planning and posture choices affect campaign outcomes."[2]

Most readers are likely familiar with the similar, but distinct, concept of "war gaming." U.S. Army doctrine uses the term "war gaming" as a synonym for Step 4 of the military decision-making process, officially known as course-of-action (CoA) analysis. Field Manual (FM) 5-0 states, "CoA analysis (or war gaming) is a disciplined process, with rules and steps that attempt to visualize the flow of an operation, given the friendly force's strengths and dispositions, the enemy's capabilities and possible CoAs … and other aspects of the situation."[3]

The goal of CoA analysis is to refine a plan by identifying gaps and friction points while minimizing randomness. It uses a member of the staff, usually the executive officer, as the adjudicator for any disagreements or engagements. *Wargaming* of the analytical or educational variety differs from CoA analysis in that it attempts to simulate certain aspects of combat more realistically by adjudication outside the player's control and thereby induce uncertainty and chaos. Weapons effects against certain targets and unit morale are two commonly simulated aspects, and dice are the most common adjudicator and inducer of chaos. The goal of wargaming is not to refine a plan or provide concrete answers but rather to build experience that players and observers can apply to future live situations.

Wargaming's roots

Wargaming as modern military training has its roots in *kriegsspiel*. Prussian officer Georg von Reisswitz is largely responsible for introducing a tabletop wargame called *kriegsspiel* to the Prussian Army in 1824.[4] *Kriegsspiel* was played on a 1:8000-scale map with colored pieces denoting units and dice rolled to determine the outcome of combat.[5] Chief of the General Staff GEN Karl von Müffling directed that every regiment in the Prussian army play *kriegsspiel* regularly as training, and state funds paid for the game kits.[6] *Kriegsspiel* had a major impact on Prussian successes in their mid-19th Century wars, particularly enabling them to out-think their Austrian and French opponents. GEN Kraft zu Hohenlohe-Ingelfingen wrote, "The ability to quickly arrive at decisions … which characterized our officers in the Franco-Prussian War of 1870-71 was in no small measure due to the wargames."[7]

Other nations adopted *kriegsspiel*-style wargames in the wake of the Franco-Prussian War, and they had a major impact on the conduct of World War II. Fleet ADM Chester Nimitz famously commented on the positive impact of the competitive wargames fought at the Naval War College in the interwar period in preparing the U.S. Navy to defeat the Japanese: "The war with Japan had been re-enacted in the game rooms here by so many people and in so many different ways that nothing that happened during the war was a surprise – absolutely nothing except the kamikaze tactics toward the end of the war; we had not visualized those."[8]

The Royal Navy's Western Approaches Tactical Unit relentlessly used

Figure 1. MCCC students play a game of *Force on Force*. *(Photo by MAJ Patrick O'Keefe)*

wargames to simulate engagements between U-boats and escorts, not only for training officers but also to predict German tactics and develop their own.[9] And the German army had leaders at all echelons, including noncommissioned officers, wargame to prepare for the invasion of France in 1940.[10]

The U.S. Marine Corps (USMC) strongly revitalized wargaming within its ranks. In his 2020 commandant's planning guidance, USMC commandant GEN David Berger said, "In the context of training, wargaming needs to be used more broadly to fill what is arguably our greatest deficiency in the training and education of leaders: *practice in decision-making against a thinking enemy*."[11], [12] The USMC implements this guidance with tactical decision-making games (TDGs), decision-forcing cases and other wargames frequently at PME.

There are also informal and semi-formal organizations to support gaming as leader development in the USMC. The Marine Corps Association allows units to request, at no cost to them, games to be used at levels all the way down to privates, lance corporals and corporals.[13] The Warfighting Society promotes "develop[ing] military minds of investigative curiosity, analysis and synthesis" through regular chapter meetings in which TDGs and wargames are possible centerpieces.[14]

In the U.S. Army, however, wargaming remains largely absent from tactical echelons.

Impact at MCCC

In April 2022 I approached the chief of tactics at the time with a proposal to develop and test a company-level wargame for integration into the course. My argument rested on the idea that wargaming engages students in all three learning domains from Bloom's Taxonomy: cognitive, psychomotor and affective.[15]

Wargaming engages students in the cognitive domain by forcing them to continually intake new information, analyze it and develop solutions to problems presented by a free-thinking opponent. It engages them in the psychomotor domain by using a physical map with miniature armor and infantry pieces and dice, engaging them at the guided-response level. And it engages them in the affective domain by inducing buy-in through its competitive nature, the fact that there is a winner and a loser, and the opportunity at the end to analyze through an after-action review (AAR) why one side won and the other lost.

When the concept was approved, development began of the initial set of rules which would become *Force on Force*, MCCC's internal educational company-level wargame. The system consists of players first conducting TLPs on a scenario prompt; once complete, Blue Forces players set up according to their plan, while Red Forces players set up according to their enemy situation template. The tabletop exercise then consists of a series of turns during which each player spends phases conducting information collection and fires, movement and maneuver, followed by direct-fire engagements, reinforcing the "trigger-fire-move" method of planning maneuver. The attacker acts first in each phase, and unpredictability is induced by dice rolls for indirect and direct-fire effectiveness, based on probability-of-kill data.

In June 2022, with the rule set drafted, I approached one of my team's SGLs and asked him to pilot the game with his seminar. He agreed and became my invaluable partner in the wargaming enterprise, providing countless hours of development work, research, resourcing and implementation on the game over the next nine months.

The seminar of 16 students piloted *Force on Force* through the entire company phase of MCCC Class 22-04, with noticeable results. Qualitatively, the participants lauded its effects on surveys; one student went so far as to say, "This was the single biggest factor in passing my opord." Quantitatively, the seminar averaged over 2.5 percentage points higher on their graded opords when compared with the rest of the class. The seminar had a total of only three failing opords from two students for the course, compared to an average total of 5.5 failing opords from an average of four students compared to the other seminars in the class.

Using those data points, we approached the new chief of tactics with the recommendation to move forward with a full-class pilot in Fall 2022. He approved, and in January 2023 we began the pilot with a class of 159 students, MCCC Class 23-02. The results mirrored those seen in the single seminar pilot.

Based on exit surveys of 63 students conducted after iterations of wargaming, 95 percent recommended **Force on Force** be implemented across all MCCC modules with an average rating of 8/10 for how well the game reinforced module outcomes. In terms of student performance, Class 23-02 saw a statistically significant increase in grades, especially among students who might struggle with the material. The number of students who scored above 80 percent compared with the historical average from the past two years increased by 7 percent (or 11 students) for A2 and 9 percent (or 14 students) for A4 (see Table 1).

While there is no noticeable difference in grades for A3, Class 23-02 implemented a new, more difficult A3 scenario than previous classes had done. However, grades did not decrease despite the increase in difficulty of material.

These statistics are not proven causation, but it is correlation and an indicator of impact.

The game's key qualitative success was student discovery learning of module outcomes. For example, the major learning outcomes for the A2 module are understanding how to plan a combined-arms breach, understanding the unique capabilities and tactical employment of a tank and mechanized-infantry company/team, and understanding Chinese defensive tactics. On the exit surveys conducted after the A2 iteration of **Force on Force**, 51 percent of students indicated that their most important takeaway from the game was the importance of effective breaching fundamentals (suppress, obscure, secure, reduce, assault) to successfully breaching an obstacle belt; 24 percent indicated it was tank and mechanized-infantry company direct-fire and maneuver planning; and 18 percent indicated it was their understanding of Chinese tactics. These

answers were free-response and generated by the students, not a multiple-choice response where they were prompted.

Impact beyond learning outcomes

Aside from the ability to reinforce tactical lessons-learned in the classroom and associated performance correlation, an intangible impact of **Force on Force** for our students is the ability to make tactical decisions in a real-time environment against a thinking opponent doing the same. Company-grade officers in the Army today receive fewer opportunities for real-world experience against a free-thinking enemy due to factors, including the drawdown and end of major combat operations, and the disruption by Coronavirus 19. Class 23-02's officers have an average of 4.7 years of service. Yet in that time, less than 20 percent deployed to combat, and less than 50 percent maneuvered a formation at a combat-training center (CTC).

Army Doctrine Publication (ADP) 1-01 doctrine primer states: "War is inherently chaotic. … Orders can and will be misunderstood, units will take wrong turns, obstacles will appear and units will consume supplies at unexpected rates. … This chaotic nature of war makes precise cause-and-effect determinations difficult, impossible or delayed."[16]

Without first-hand experience of that chaos, however, many of today's company-grade officers have difficulty conceptualizing the importance of action-based decision-making, and they fall back on the idea that we can "plan our way to victory."[17] Due to several factors, including time, resources and feasibility of conducting complex training against a thinking enemy, officers attending higher-level PME and out in the operating force spend more time planning than they do executing.

Wargaming is a low-cost, easily repeatable way for them to exercise tactical decision-making, especially when leaders are given an opportunity to conduct TLPs on the scenario beforehand.

Retired COL Eric Walters, former instructor at multiple PME courses and wargame developer, highlights the benefit of wargaming to building decision-making experience: "Wargaming demands continuous estimates of the situation and a seemingly never-ending series of time-constrained decisions that build upon dynamic interaction as forces collide. Wargame participants learn actively … must come up with options, quickly make a decision, execute it and subsequently assess their thinking when opponents react – and do this repeatedly. Unexpected outcomes, surprises and revised estimates are commonplace, as are changes in objectives and missions."[18]

Each **Force on Force** game turn, officers must make decisions about where to maneuver their platoons to gain positions of relative direct-fire advantage, but also if and how to employ enablers to help achieve their desired effects. Decisions on calling indirect fires, employing obscuration smoke and using company-level small unmanned aerial systems are all impacted by resource limitations.

For example, calling a smoke mission to cover a platoon's movement to engage an enemy reconnaissance platoon may ensure that unit is not destroyed in the open, but uses one of only a handful of turns of smoke allocated to that player for the entire game. Is that an effective use of the smoke, or is the risk to the maneuver platoon against a smaller reconnaissance element outweighed by the risk to the breach element if they have less smoke than originally planned later in the operation? Will a reduced-strength platoon be a greater risk than

Table 1. Students scoring 80 percent or higher.			
	A2 OPORD (ABCT company attack)	A3 OPORD (ABCT company defense)	A4 OPORD (SBCT urban attack)
Two-year historical average	72 percent	77 percent	72 percent
Class 23-02	79 percent (+7 percent)	77 percent	81 percent (+9 percent)

reduced-smoke time when conducting the breach?

These are commander decisions, and *Force on Force* allows students to make them in a consequence-free environment, followed by an AAR in which they can analyze their choices and codify lessons. Through the iterative cycle of repeated games, officers gain valuable "sets and reps" at tactical decision-making over an analog common operating picture far more than what they will normally experience in a field-training environment. This builds critical decision-making skills as well as experiential pattern recognition of common tactical problems they will face at a CTC or in combat.

Looking ahead

Wargaming should not be limited to PME. The entire force needs to take advantage of the benefits highlighted in this article. Training opportunities against a fully invested, free-thinking enemy are fewer than we would like in the active force for the same reasons as in PME: time, resources and feasibility. Wargaming, on the other hand, requires little cost in terms of setup, and many games can be played quickly; *Force on Force* can be played in under an hour, feasible for execution over a lunch break or between physical training and the beginning of the duty day, or even in austere environments.

Even if played only once per week, leaders would drastically increase their chances to exercise decision-making and naturally generate conversation on company-level tactics among each other. Units should use wargaming as low-cost, high-payoff opportunities for leader development, staff training and preparing for rotations to CTCs.

As professionals, we should seek out every opportunity to practice our craft, and wargaming is one such opportunity that is not widely publicized or popularized in the modern Army despite its long professional military tradition. Wargaming may not look like training on its surface, with game pieces, dice and a boardgame-like map. This can be an obstacle to employment, as some leaders may have an

Figure 2. An example situation in *Force on Force*: a U.S. armor and mechanized-infantry company/team attempts a combined-sarms breach against an Olvanan defending force. *(Photo by MAJ Patrick O'Keefe)*

emotional reaction to what they view as something for children or only for personal off-duty consumption. But like GEN von Müffling said, "It's not a game at all! It's training for war!"

The students at MCCC are leaving more prepared to out-think the enemy and win when they arrive at units in the force. Units should continue this training with wargaming programs. There is a vast catalogue of commercial and educational wargames units can access that are useful for reinforcing tactics and decision-making. These games scale from individual fire team or squad level up to simulating actions across the joint force at theater level.

Ultimately the specifics of the games chosen are not as important as the fact that units should be gaming, enabling leaders to compete in real time where they can exercise rapid decision-making in tactical situations. This builds competence and confidence in their ability to analyze situations and make the correct decision when it matters most: in combat, when the plan has failed and their Soldiers look to them and ask, "What next?"

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brigade-plans cells at the National Training Center, Fort Irwin, CA; tank-company commander; 1st Battalion, 12th Cavalry Regiment, 3rd Brigade, 1st Cavalry Division, Fort Cavazos, TX; and reconnaissance-platoon leader, 6th Squadron, 1st Cavalry Regiment, 1st brigade, 1st Armored Division, Fort Bliss, TX. He has deployed to both combat and contingency operations in Southwest Asia. MAJ O'Keefe's military schooling includes MCCC, Cavalry Leader's Course Armor Basic Officer Leader's Corse and Scout Leader's Course. He holds a bachelor's of arts degree in political science from Old Dominion University.

The rules for **Force on Force** and a to-scale map can be found at https://www.milsuite.mil/book/groups/forceonforce/ (Common Access Card protected). You can use these rules at your unit with print-and-play pieces or by ordering from your favorite vendor.

Notes

[1] The Joint Chiefs of Staff; ***Developing Today's Joint Officers for Tomorrow's Ways of War: The Joint Chiefs of Staff Vision and Guidance for Professional Military Education and Talent Management***; May 1, 2020; https://www.jcs.mil/Portals/36/Documents/Doctrine/education/jcs_pme_tm_vision.pdf?ver=2020-05-15-102429-817.

[2] The RAND Corporation; https://www.rand.org/topics/wargaming.html.

[3] Department of the Army; FM 5-0, ***Planning and Orders Production***; May 16, 2022.

[4] Milan Vego; "German Wargaming"; ***Naval War College Review***; Vol. 65, No. 4; 2012; https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1494&context=nwc-review.

[5] Ibid.

[6] Ibid.

[7] Ibid.

[8] CPT Dale C. Rielage; "Wargaming Must Get Red Right"; ***Proceedings***; Vol. 143/1/1; January 2017; https://www.usni.org/magazines/proceedings/2017/january/war-gaming-must-get-red-right.

[9] Paul Edward Strong; "Wargaming the Atlantic War"; paper for MORS Wargaming Special Meeting; October 2017; https://www.professionalwargaming.co.uk/171210WATU-MORS.pdf.

[10] Vego.

[11] Emphasis added.

[12] GEN David Berger; commandant's planning guidance; 2020; https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700.

[13] Marine Corps Association; https://mca-marines.org/request-a-wargame/.

[14] The Warfighting Society; https://www.themaneuverist.org/about-us.

[15] The London School of Management; "The Three Domains of Learning – Cognitive; Affective and Psychomotor – Its Application in Teaching and Learning"; Jan. 21, 2019; https://lsme.ac.uk/blogs/the-three-3-domains-of-learning-cognitive-affective-and-psychomotor-caps-its-application-in-teaching-and-learning/. "The cognitive domain aims to develop the mental skills and the acquisition of knowledge of the individual. …The psychomotor domain includes [using] motor skills and the ability to coordinate them. …The affective domain includes the feelings, emotions and attitudes of the individual."

[16] Department of the Army; ***Doctrine Primer: [ADP] 1-01***; July 2019.

[17] Eric M. Walters; "Developing Self-Confidence in Military Decision-Making"; ***Marine Corps University Journal***; Vol. 12 No. 2; https://www.usmcu.edu/Outreach/Marine-Corps-University-Press/MCU-Journal/JAMS-Vol-12-No-2/Developing-Self-Confidence-in-Military-Decision-Making/.

[18] Ibid.

Employment of Robotic Combat Vehicles in Large-Scale Combat Operations at Battalion Level:
Observations from Project Convergence 22

by LTC Brennan Speakes and
MAJ Sid McMath

"Blackhawk 6, what's your slant?"

"Sir, we only lost one robot."

The sun was just coming up over Tiefort Mountain and the fog still covered the desert floor. All troops completed pre-combat inspections and checks, boresighting and communication checks while they were still tucked into their attack positions.

The faint noise of a small motor and a green light moved in front of the squadron main body, slowly scanning, joined by three similar robotic combat vehicles (RCVs). Through a small screen, the vehicle controller identifies enemy boyevaya mashina pyekhotys (BMPs) massed behind the cover provided at Moose Gardens. The RCV operator sends the targeting data of the enemy BMPs almost instantly to the squadron mortars, and the platoon prepares the charges and rounds to destroy the threat.

The silence on the radio net is broken by a transmission from Apache Troop stating that three BMPs have been destroyed, while the RCVs continue their scan mere meters away from the precise mortar strike. Meanwhile, the squadron's troopers remain in relative safety behind the line of departure.

The RCVs continue scanning, cued by unmanned aircraft systems (UAS), and quickly uncover an anti-tank (AT) team nestled in the undulating terrain. The AT team spots the RCV and fires on the closest RCV, destroying it. The operator of the second robot in the swarm, serving as the human-in-the-loop, slews the RCV's M240 to the AT team, maneuvering to close the gap while firing several bursts. With the AT team destroyed, the remaining RCVs continue advancing to identify targets throughout the restrictive terrain.

After the destruction of an enemy platoon securing key terrain with observation of the central corridor, the squadron S-3 reports the updated battle-damage assessment to the squadron commander, followed by the S-2's assessment. It is a drastically different result than the previous day's events when the enemy handily destroyed a Bradley section from Blackhawk Troop. Today, the squadron owns the key terrain of the central corridor with only the loss of one RCV as the squadron continues to press the attack toward the east. And yet still, the squadron's main body remains concealed at the line of departure.

Introduction

The integration of RCVs on the front line during the fight against a determined and world-class opposing force (OPFOR) at the National Training Center (NTC) during Project Convergence 22 (PC22) greatly enhanced 1-7 Cavalry's ability to fight and win across all mission types while mitigating threats posed to the troopers. A surprising conclusion was that RCVs did not change the squadron's employment of current tactical doctrine. Instead, when used as the formation's vanguard, they extended the close fight within the existing battlefield framework through combined-arms layers of near-autonomous capabilities that allowed ground forces greater depth and reach.

Also, they proved promising in economy-of-force missions that enabled the commander to buy-down risk elsewhere on the battlefield while maximizing combat power at the decisive point. As well, the layers of depth created by these capabilities inherently reduced risk to the force by allowing friendly forces to make direct-fire contact with the enemy before the troopers themselves were exposed. In the end, however, despite these enhanced capabilities, their successful employment always came down to the fast-thinking ingenuity of the troopers and their leaders on the ground.

Concept of employment

The 1-7 Cav's main purpose at PC22 was to provide feedback on how to improve each technology's function, as well as to develop methods of employing these new technologies on future battlefields. Following 10 days of collective training from section, platoon and troop level and nearly three weeks of hands-on training with the new technology, the squadron deployed to the "box," prepared to fight Blackhorse (the OPFOR) daily for nine days.

The first day was fought without technology to establish the base case for the comparative case study. Each following day introduced a new type of technology, layering the complexity of the battlefield and providing the squadron with greater capabilities to defeat Blackhorse.

The squadron's first observation was how to design a battlefield framework given multiple unmanned aerial vehicles (UAVs) and RCVs. The standard tactic was combined-arms layering. Sensors such as UAVs served as the first layer, deployed forward of the formation as the forward-line of-sensors (FLoS), collecting information requirements and identifying targets to feed the division's targeting cycle.

The forward-line-of robots (FLoR) followed, acting as additional sensors, but also representing the first layer of direct-fire contact with the enemy. The forward-line-of-troops (FLoT), deployed in the supporting range of the FLoR, came last, shielded and informed by the first two layers. For the commander, this layered approach provided the additional decision space as enemy contact with the FLoS and
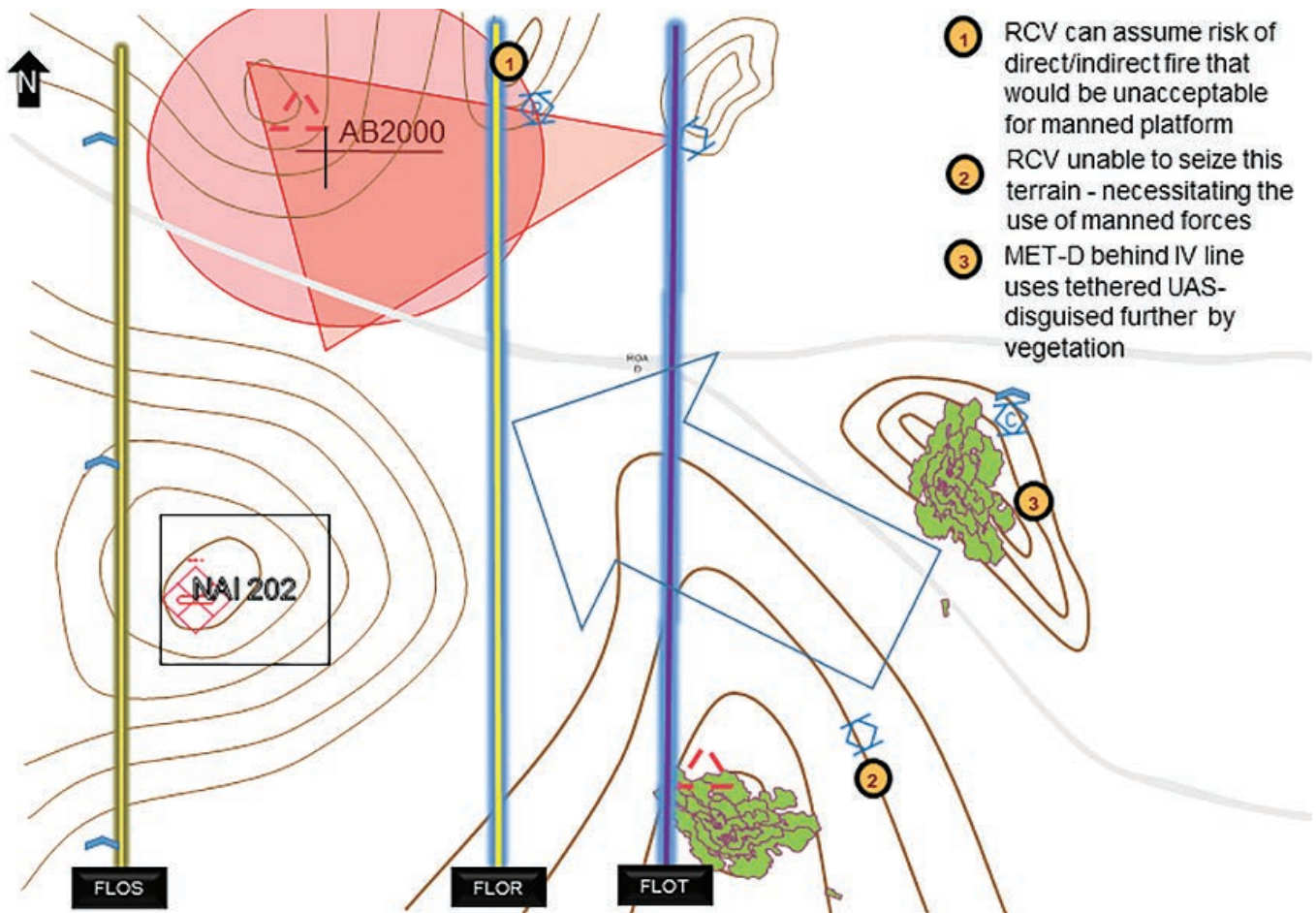
Figure 1. Templated area-reconnaissance tactics integrating RCVs. *(Graphic by CPT Andrew Hall, Troop B, 1-7 Cav, 1st Cavalry Division)*

FLoR stimulated the enemy to react, painting a picture of enemy activity and shaping the battlefield before committing troops.

With troopers safely postured behind the Brown and Debnam Pass complex, the squadron deployed the FLoS. These sensors extended the entire length of the central corridor, identifying enemy positions for division and squadron fires to destroy. The FLoS also extended to the squadron's exposed northern flank at Granite Mountain Pass, with capabilities that provided a near-autonomous reconnaissance force able to forewarn the commander of an enemy attack and allowing him to concentrate more combat power at the decisive point.

Once the enemy was attrited to an acceptable level, RCVs deployed across the area commonly called no-man's land, a place with expansive fields of fire where advancing forces are historically destroyed. The RCVs advanced to the opposite side of no-man's land, concentrated on the Iron Triangle and Moose Gardens, acquiring and firing on more enemy targets unseen by the FLoS. The enemy, knowing these were unmanned RCVs, faced the choice of firing and exposing themselves to mortar and artillery fire, quietly staying in place to await detection and destruction, or displacing altogether.

Only once the FLoR cleared the way to the opposite side of the no-man's land at the Iron Triangle and Moose Gardens did the squadron deploy its troopers beyond the protection of the pass complex. Once deployed, the FLoT remained within the supporting range of the FLoR to ensure the RCV's survivability, while the FLoR effectively extended the FLoT's direct-fire range and observation range well beyond its organic capabilities. The enemy, now engaged, exposed itself to mortar and artillery fire, and two layers of direct-fire capabilities.

Concept in action

As described, Blackhawk Troop, weighted with RCVs as the squadron's main effort, massed RCVs on the Iron Triangle, the operation's decisive point and key to opening the central corridor. Blackhawk Troop easily seized this key terrain at the cost of only one RCV instead of the two Bradley Fighting Vehicles and many dismounts they lost on the base-case iteration.

Apache Troop saw similar results. RCVs combined with indirect fire proved formidable, and the enemy either displaced from or was destroyed at Moose Gardens. These capabilities allowed Apache Troop to seize this key terrain with almost no casualties.

Each day the results of these attacks were the same: RCVs enabled the squadron to cross no-man's land without the historically catastrophic losses taken by so many Cavalry squadrons in years past, and gain that decisive foothold needed to enter the central

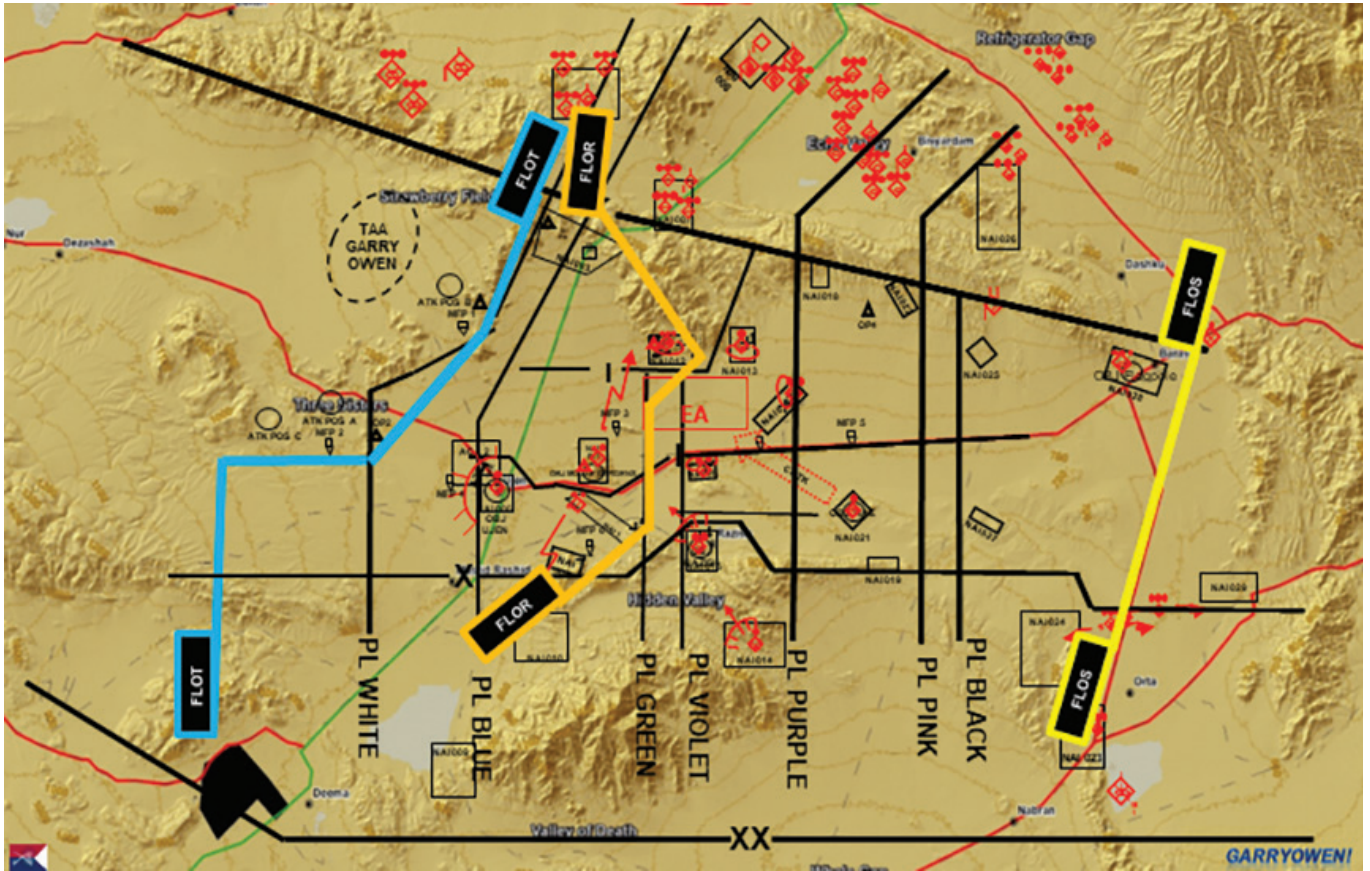**Figure 2. PC22 operations graphics depicting FLoT, robots and sensors in the "box" at NTC.** *(Graphic by CPT Max Laguna, 1-7 Cav, 1st Cavalry Division)*

corridor. RCVs proved equally decisive   on days when all UAVs were grounded   due to high winds. The squadron still
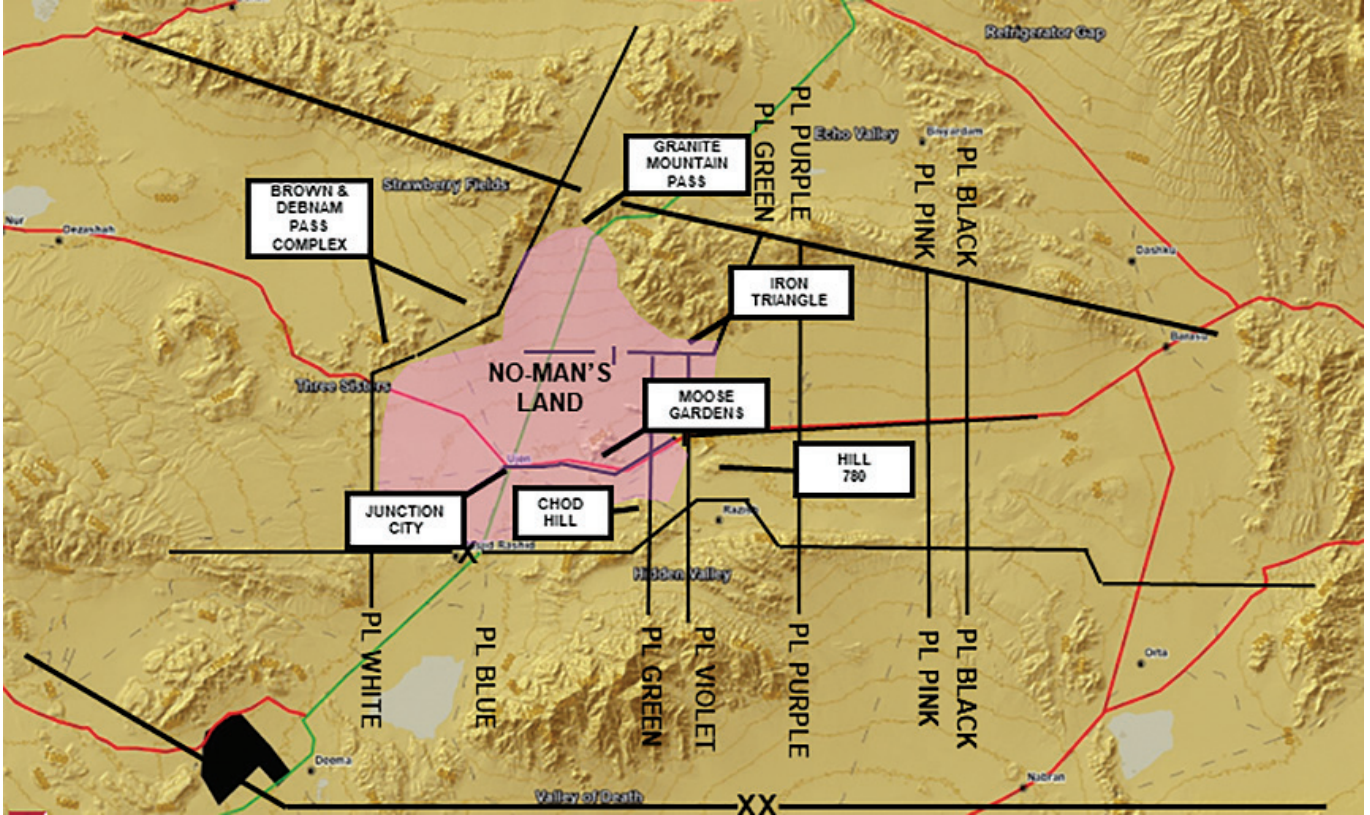

Figure 3. Key locations referred to during the scenario in this article. *(Graphic by MAJ Sid McMath, 1-7 Cav, 1st Cavalry Division)*

advanced with the ability to achieve forewarning and engage in direct-fire contact with the enemy before troopers were exposed.

As the only troop not augmented with RCVs, Comanche Troop encountered significantly more challenges than their counterparts throughout the operation. Though they easily crossed no-man's land toward Chod Hill, passing south of Junction City, they met significant resistance once near the Peanut. Augmented only with additional UAVs, they were unable to identify and destroy enemy positions behind the safety of the FLoR. Days with high winds were particularly challenging, in contrast to Apache and Blackhawk Troops who, under similar circumstances, still performed well while supported by RCVs. Unsupported by either the FLoR or the FLoS, Comanche Troop's losses were consistently higher, ensuring they seldom got further than Hill 780.

Providing contrast to the squadron's observations, the experiment only allowed for RCVs to accompany the troops to Phase Line (PL) Green. Crossing PL Green without RCVs marked a downturn in the squadron's success each day. Both Apache and Blackhawk Troops found themselves facing greater risk, forced to decide between pursuing a delaying enemy that ultimately led to a kill zone or a slow advance exposed to relentless indirect fire. Once Blackhawk Troop seized the Iron Triangle, the inability to advance their RCVs further left their troopers with the task of clearing the intensely undulating terrain and deep draws in the mountain's wall, where the enemy often hid. Consequently Blackhawk Troop's advancement always slowed to a methodical pace, enabling the enemy to attrit them in close combat.

Comanche Troop's inability to advance much further down the central corridor beyond Chod Hill left Apache Troop's advance exposed. Unable to achieve a comparative advantage as a lone troop, the enemy, arrayed across the width of the corridor, consistently attrited Apache Troop. The threat owned the best terrain in the area, affording them protection from fires and the ability to prevent the squadron's forward momentum.

OPFOR reactions

Though the squadron's understanding of the OPFOR's reactions and decision-making when they were confronted by RCVs was limited, they clearly evolved over those nine days of fighting. The result was a daily contest where each side learned from and adjusted their previous day's plan, leveraging new tools and tactics to defeat the enemy.

When first confronted, the OPFOR withdrew to avoid observation. This proved advantageous to the squadron's ability to seize the Iron Triangle and Moose Gardens with almost no casualties on the first day of RCV employment. Their withdrawal enabled the squadron to retain maximum combat power when crossing PL Green, resulting in the squadron's most successful experimental day.

The OPFOR quickly adapted, however. Realizing that RCVs are just another combat vehicle on the battlefield, they began destroying them instead of withdrawing. These tactics worked well initially as the squadron's attrition rates of both RCVs and manned vehicles increased relative to previous days.

However, these tactics exposed the OPFOR to observation, as the squadron answered in kind with ever-increasing proficiency in mortar employment in support of robotic and manned vehicles. Simply enough, the squadron better integrated RCVs into the unit's combined-arms maneuver, allowing troops to destroy the enemy more quickly with direct and indirect fires while preserving RCVs and keeping troopers at relatively safer distances.

Observation and implications

Despite the potentially revolutionary implication of RCV employment on future battlefields, these implications and recommended changes to doctrine remain simple. The FLoS serves as a control measure, marking the extent of the unit's sensors and, when coupled with the range of indirect fires, defines the unit's deep fight.

The greatest change is in the depth of the close fight. Defined by the FLoR, RCV employment extends that depth by combining the RCV's direct-fire weapons range with that of those human operators in overwatch at supporting range and distance. One can further extend this depth by adding layers of overwatch between manned and unmanned systems. Consequently, these minor doctrinal changes allow easy integration of RCVs into the Army's current way of thinking.

Figure 4. A Soldier operates a .50-caliber on an RCV variant during training.
(Photo by LTC Jennifer Bocanegra, 1st Cavalry Division Public Affairs Office)
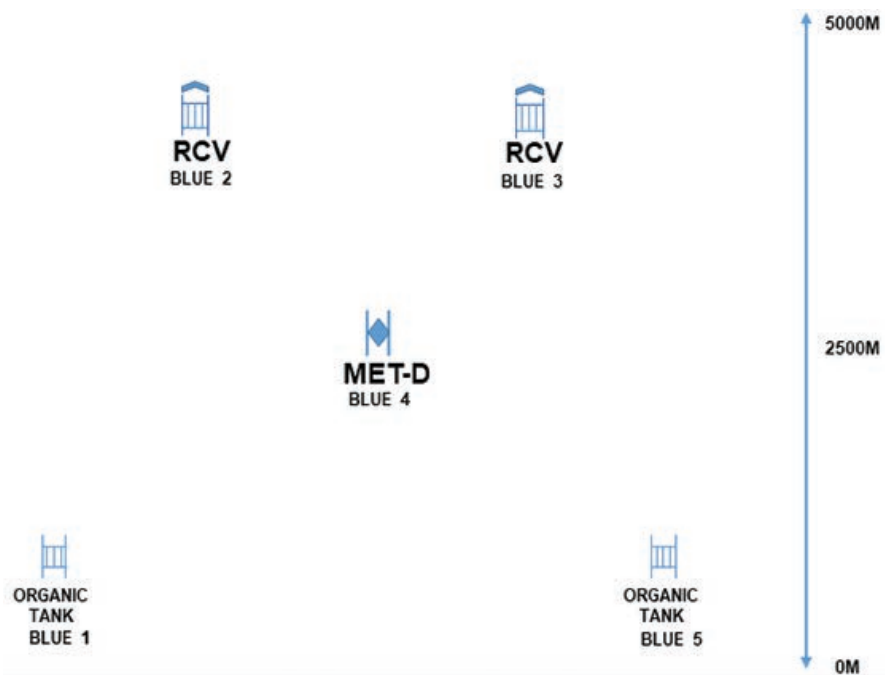
Figure 5. Example "M" vehicle formation integrating RCVs in-depth. RCVs lead the formation followed by the RCV control vehicle. Manned vehicles are last in order of march, remaining within supporting range. *(Graphic by 1LT Hailey Kozma, 1-7 Cav, 1st Cavalry Division)*

Tactical changes are where RCV employment proved most advantageous. RCVs are most suitable in jobs that proved dangerous, dirty or dull by limiting troopers' exposure to enemy fire and saving lives, or by keeping troopers focused on more meaningful tasks that only critically thinking humans can perform. This employment ranged from economy-of-force missions that freed up more combat power for the commander to use at a decisive point, to the decisive operation, where the commander could mass RCVs to buy-down risks to both force and mission at times and places that mattered most.

There was an array of missions not performed at PC22 where RCVs could play potentially critical roles such as combined-arms breaches, wet-gap crossings, prepared defenses, retrogrades and many more.

Conclusion

It is important to note that RCVs are not a silver bullet. By themselves, they are as exposed to enemy fire and easily destroyed as any other asset when not properly integrated into a balanced combined-arms approach. Though more attritable relative to troopers, RCVs are still a finite resource and need to be treated accordingly. Commanders must determine how RCVs fit within their total combined-arms concept and provide these capabilities the proper protection required to ensure their survivability for continued use.

Furthermore, RCVs do not remove, only reduce, the threats posed to troopers. Critically thinking troopers still play an indispensable role on the battlefield to make moral and ethical decisions and ensure a balanced employment of the total combined-arms team.

In short, RCV employment proved best when treated as just another tool in the combined-arms team while adjusting the battlefield framework to account for combined-arms layers. These simple changes enabled the squadron to more easily identify and destroy enemy positions while preserving both RCVs and, most importantly, troopers' lives.

Despite the significance of these new technological advancements, troopers, noncommissioned officers and officers proved the key to the technology's successful employment. Much of the technology was intuitive enough that operators quickly picked up the basics, and then adaptive leaders developed innovative employment concepts. The squadron's "digital natives," young people who grew up with modern technology, proved exceptionally adept at thinking through each technology's use and developing practical applications.

In the end, technology without human creativity is just an expensive target.

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MAJ Sid McMath is the executive officer for 1-7 Cav, 1st Cavalry Division, Fort Cavazos. Previous assignments include deputy G-5, 1st Cavalry Division, Fort Cavazos; troop commander, B Troop, 2-13 Cavalry, 3rd BCT, 1st Armor Division, Fort Bliss, TX; troop executive officer, Dragon Troop, 2nd Squadron, 3rd Cavalry Regiment, Fort Cavazos; squadron scout-platoon leader, 2nd Squadron, 3rd Cavalry Regiment, Fort Cavazos; and tank-platoon leader, E Troop, 2nd Squadron, 3rd Armored Cavalry Regiment, Fort Cavazos. His military education includes the School of

Advanced Military Studies (SAMS), Art of War Scholars Program at CGSC, CLC, Marine Corps Expeditionary Warfare School, Ranger Course, Army Reconnaissance Course and ABOLC. MAJ McMath holds a master's of arts degree in military operations from SAMS, a master's in military arts and science degree from Art of War Scholars Program, CGSC, a master's of arts in international relations from American University and a bachelor's of arts degree in political science from Hendrix College. His awards and honors include the Bronze Star and four Meritorious Service Medals.

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.

SCOFIELD, DAVID H.
Rank and unit: Quartermaster sergeant, Company K, 5th New York U.S. Cavalry. Place and date of action: Cedar Creek, VA, Oct. 19, 1864. Entered service: Unknown. Born: Mamaroneck, NY. Date of issue: Oct. 26, 1864. Citation: Capture of flag of 13th Virginia Infantry (CSA).

SEWARD, GRIFFIN
Rank and unit: Wagoner, Company G, 8th U.S. Cavalry. Place and date of action: Chiricahva Mountains, AZ, Oct. 20, 1863. Born: Dover, DE. Date of issue: Feb. 14, 1870. Citation: Gallantry in action.

SHAHAN, EMISIRE CPL
Unit: Company A, 1st West Virginia Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: Preston County, WV. Date of issue: May 3, 1865. Citation: Capture of flag of 76th Georgia Infantry (CSA).

SHEPHERD, WILLIAM PVT
Unit: Company A, 3rd Indiana Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Entered service: Dillsboro, IN. Born: Dearborn County, IN. Date of issue: May 3, 1865. Citation: Capture of flag.

SHIELDS, BERNARD PVT
Unit: Company E, 2nd West Virginia Cavalry. Place and date of action: Appomattox, VA, April 8, 1865. Entered service: Ironton, OH. Born: Ireland. Date of issue: May 3, 1865. Citation: Capture of flag of Washington Artillery (CSA).

Divisional SHORAD: Using Historical Examples to Build a Future Formation

by CPT Leopoldo Negrete

The average armor or infantry Soldier has probably never met an air-defense-artillery (ADA) Soldier wearing the same divisional patch. The 14-series military-occupation specialty Soldiers in a division usually serve in either the air-defense airspace-management/brigade aviation element, the air-missile-defense (AMD) element in the G-3 or the Sentinel radar section in the division artillery. Further, most 14-series Soldiers serve in one of the Army Air and Missile Defense Commands around the world.

However, it will soon be a common sight to see air defenders wearing division patches.

As a young tanker on my first National Training Center (NTC) rotation in 2001, I was part of Alpha Company, 1st Battalion, 34th Armor, 1st Brigade Combat Team, 1st Infantry Division. During a break in the battle, a Bradley vehicle pulled up next to our Abrams tank. I assumed it belonged to our sister infantry battalion, 1st Battalion, 16th Infantry Regiment. I looked at the bumper number that read "4-3 ADA" instead of "1-16 IN." I asked myself, "Who are these Soldiers wearing the same patch as myself, riding in a Bradley, but are not infantry?"

I approached the two Soldiers who had dismounted from the Bradley and had a good conversation about the roles and capabilities of the Bradley Stinger Fighting Vehicle (BSFV). The BSFV carried a dismounted Stinger team in addition to the vehicle crew. I was relieved to know there were air defenders organic to 1st Infantry Division fighting right next to my tank.

ADA and maneuver forces

The relationship between ADA and maneuver forces traces its history back to World War II. "In 1942, after the North African invasion, [GEN] Jacob Devers, commander of the Armored Command, and [GEN] Dwight D. Eisenhower, Operation Torch commander, argued that antiaircraft artillery was needed continuously by ground units," according to an Office Chief of Air-Defense Artillery (OCADA) publication.[1]

Soon thereafter, ADA units were organic to divisions for almost 60 years. When Task Force Centurion (1st Battalion, 34th Armor) deployed to Kuwait in the Fall of 2001 for Operation Intrinsic Action, a platoon of BSFVs deployed as part of the task force. When 1st Brigade, 1st Infantry Division, deployed to Iraq in the Fall of 2003, Charlie Battery, 4-3 ADA deployed as part of the brigade. The 4-3 ADA was an integral part of the Big Red One. They fought next to infantry and armor Soldiers and were tasked with many of the same missions as their fellow Devil Brigade brothers and sisters. Those tasks included many non-ADA tasks. This was not unique to 4-3 ADA but was common to every other divisional short-range air-defense (SHORAD) battalion.

During the mid-2000s, the Army removed the SHORAD battalions from divisions. There were no enemy rotary or fixed-wing aircraft to pose a threat to maneuver forces in Iraq or Afghanistan. The Army needed other capabilities in both the brigade combat teams (BCTs) and air defense. SHORAD units were inactivated or reflagged. The 4-3

ADA was stripped of its Bradley vehicles and eventually converted to a Patriot battalion. The need for high-to-medium altitude air-defense capabilities exceeded those of SHORAD. After 60 years, SHORAD was no longer organic to divisions.

Rebirth of SHORAD

Recent conflicts around the world have brought SHORAD back to the forefront. There are many examples of how unmanned aircraft systems (UAS) can be a pivotal factor in combat operations. Also, a layered air-defense system can vastly reduce or eliminate a force's ability to provide close-air support, as we have seen in Ukraine. The proliferation of UAS and our ability to conduct multidomain operations re-established SHORAD's relevancy on the modern battlefield.

This is why air-defense modernization is a priority. GEN Mark Milley said in 2017, "None of this is going to matter if you're dead, and that's why you need air defense," he said.[2]

The 1st Calvary Division (6-56 ADA) and 1st Armored Division (4-60 ADA) are the first two divisions to receive a SHORAD battalion organic to their formations. These two battalions, along with 5-4 ADA in Europe, are part of the Army's modernization effort to meet the current strategic environment. These battalions will be fielded with Maneuver-SHORAD (M-SHORAD) and additional ADA systems. The Army plans to field more SHORAD battalions across other divisions.

So why place M-SHORAD on a Stryker platform? "The M-SHORAD battalions provide a maneuverable and survivable air-defense capability in direct support of BCTs and the subordinate maneuver battalions against rotary-wing and fixed-wing aircraft and UASs," according to Field Manual (FM) 3-01.44, *Short-Range Air-Defense Operations*.[3] The Army did not bring back the BSFV or the upgraded Bradley Linebacker with mounted Stinger pods, and it is also not investing in the Avenger.

"The Avenger air-defense system entered the Army inventory in 1988 and has not seen a major upgrade since 2004," according to Mann, Mathews

and Mahon. "It is a rear-area air-defense system, not designed to support a maneuvering force, and it would not survive nor be effective in defending a heavy force on the move. M-SHORAD is the right solution to solving this operational need."[4]

The Army is working diligently to ensure ADA has the most modern technology in the fight.

There is also the Directed Energy (DE) M-SHORAD. DE M-SHORAD is a Rapid Capabilities and Critical Technologies Office project that will mount a laser weapon system to a Stryker chassis. What this capability will look like and how it will be incorporated into division SHORAD battalions is yet to be seen. There are many ADA modernization projects out there; however, M-SHORAD is the backbone of the division SHORAD battalion.

While I was attending the ADA Captain's Career Course, I was informed there was a possibility I would be joining 4-60 ADA as my follow-on assignment. As a former enlisted tanker, I was excited about the possibility of working with an armored formation again. As a future battery commander, I could envision the challenge of training my platoon leaders and vehicle commanders in maneuvering with an armored formation. ADA has not maneuvered with an armored formation in 20 years. There is also no current doctrine for M-SHORAD at the battery level and below.

However, as an historian I looked to the past, referencing my copy of FM 71-1, *Tank and Mechanized Infantry Company Team*.[5] This FM is easy to read and full of illustrations on offensive and defensive operations on the micro level. If I had this as a tanker, I knew there also had to be a BSFV SHORAD FM. I located FM 43-44, *Bradley Stinger Fighting Vehicle Platoon and Squad Operations*.[6] This was the perfect gold mine I needed to develop training and products until the Army publishes updated doctrine.

FM 44-43 is also easy to read, with many illustrations on formation and movement techniques at the platoon and squad level. It covers offensive and defensive operations in support of a battalion task force. FM 44-43, along

with FM 71-1, are the historical foundations to begin the process of re-learning maneuver SHORAD. A soon-to-be-published 4-60 ADA Battalion tactical standing operating procedure (TACSOP) will incorporate the doctrine found in these two publications. It will be a TACSOP we will share with not only our fellow air defenders but also our maneuver brothers and sisters.

A division SHORAD battalion in 2001 was composed of three BSFV batteries and one Avenger battery, in addition to the maintenance and headquarters battery. The BSFV batteries were task-organized to support one BCT each. The Avenger battery was normally tasked to provide ADA coverage for the division command post and the division-support area. At the BCT level, the BSFV platoons were task-organized based on the brigade commander's guidance. Normally, one platoon would support a task force. In a task force, the platoon would be split into sections to support company teams.

In 2003, most mechanized divisions looked the same, so division SHORAD battalions in support of mechanized divisions looked the same. The battlefield is changing with emerging technology and modern threats. Army divisions will be designed to support a variety of different objectives. With that in mind, division SHORAD battalions should not be a cookie-cutter design as in 2003. Each SHORAD battalion should reflect the division it is assigned to.

Building relationships

What can a division SHORAD battalion provide right now? A valuable resource. Building positive relationships now can pay dividends in the future. Currently we cannot accompany brigades to NTC or their next operational deployment. We can, however, begin building support relationships.

The Mission Training Complex (MTC) provides many valuable resources to provide training in the digital realm. Our formations have master gunners who can conduct and evaluate sustainment training for a division's 14M additional-skills identifier (ASI) population. (14M is the ASI awarded to non-ADA Soldiers who complete Stinger-team training.) Every commander at

every level is responsible for air defense; we can provide the subject-matter experts to support training for non-dedicated combined-arms air defense.

February 2023 CPX

In February 2023, 4-60 ADA supported 1st Armored Division during a command-post exercise (CPX) at Fort Bliss, TX. Our battalion sent a team to augment the division AMD section and provide operators for the BIZWIZ system at the MTC. It was a great opportunity for our battalion to integrate into the division. The 4-60 ADA team learned a lot from its participation and seeing how the division fights. Relationships were established at every step from planning to the final after-action report.

One of the lessons-learned was how to control a division SHORAD battalion on BIZWIZ. M-SHORAD platoons and sections were spread across the entire battlefield. More operators were needed to support each brigade or battalion's scheme of maneuver and tactical tasks. In addition to the more BIZWIZ operators, an air-defense response cell was needed to deconflict and coordinate with supported units. For example, it is a challenge to provide air-defense coverage to a divisional Cavalry squadron or regiment spread out in front of a division. However, by working together, any challenge can be overcome.

Those of us currently serving in M-SHORAD battalions wish we could snap our fingers and have all our equipment fielded this week. The Army and its partners are moving as fast as they can to have all M-SHORAD battalions fielded as quickly as possible. As M-SHORAD and other systems are fielded, we will begin the process of relearning how to provide SHORAD to a maneuver force. Our maneuver brothers and sisters will also need to relearn how we can integrate within their formations. The process will be long and challenging, but exciting and rewarding at the same time. However, we will not be doing anything that hasn't been done before. I acknowledge that multidomain operations during large-scale combat operations have changed the battlefield, yet the fundamentals are the same.

Maneuver units also need to ensure ADA Soldiers are part of the planning process and understand the scheme of maneuver. "In offensive situations, BSFV or Bradley Linebacker units will accompany the main attack. They may maneuver with the task force's lead company teams, orienting on low-altitude air avenues of approach," according to FM 71-1. M-SHORAD will also need to accompany the main attack. Having air defense in a close fight is where M-SHORAD will be expected to deny the enemy air support. Condition checks will need to be established and communication will be key to ensure successful re-integration.

Air defenders have had a very specific way of doing things for the last 20 years. We have focused on asset protection from fixed or semi-fixed positions. Most ADA units have been deploying to a "base" to provide air defense at the operational level. However, our training and future doctrine will need to focus on now providing air defense at the tactical level. FM 3-01.44 is a good first step in the right direction for integration.

SHORAD doctrine states that "SHORAD supports the specific mission of the supported commander against air threats."[7] This is true from an ADA section all the way to the division SHORAD battalion. Although air-defense employment is guided by employment tenants, there is no directive on how to deploy SHORAD units.[8] Furthermore, "The SHORAD mission is defined by the BCT or battalion task-force commander, who assigns air-defense priorities."[9]

Air-defense commanders will have an implied responsibility to teach capability/employment to our maneuver commanders and cultural changes will need to occur. This can happen now during warfighter exercises on the macro level. SHORAD battery commanders and platoon leaders can also begin to dialogue and share techniques, tactics and procedures with battalion/company-level commanders and staff. Joint leader professional development and platoon-level field-training exercises with maneuver units are methods of creating a shared understanding among junior leaders and Soldiers. As stated earlier, building

relationships and trust now can pay dividends in the future.

Maneuver doctrine also needs to change to reflect the addition of divisional SHORAD. Current doctrine states, "A ground force's primary air-defense systems are joint fighter aircraft, such as today's F-22 and F-18s, conducting offensive counter-air operations operated by the joint-force air-component commanders."[10] With M-SHORAD, even company commanders will have a dedicated air-defense system at their level. Employment of those systems will take a team effort. FM 71-1, Chapter 6, Section 3, has a good description on ADA support.

There is also the subject of M-SHORAD being used in a ground support role. M-SHORAD vehicle crews will need to know how to fight their vehicle against ground targets. The ability to incorporate into a maneuver formation to accomplish tasks not associated with air defense cannot be overlooked. Platform proficiency on M-SHORAD will be key.

During Operation Iraqi Freedom in March of 2003, COL Charles Branson earned a Silver Star while in a ground-support role in a Bradley Linebacker. Branson, who was a captain and a battery commander at the time, was given a tactical mission order by the commander of 1st Brigade, 3rd Infantry Division. His mission was to secure a bridge with his two Bradley Linebacker platoons and was also given a platoon of tanks from 3-69 Armor.[11] According to Branson's Silver Star citation, "An air-defense battery commander leading a Bradley and tank company team in an attack was unprecedented."[12] Branson's actions were bold and aggressive in securing the bridge and setting up Task Force 3-69 Armor for success. We will need to train our air-defense leaders and Soldiers to be able to execute any mission.

I hope what I experienced at NTC in 2001 will become a common scene soon. I already picture a young tanker approaching a young air defender, having conversations about the roles and capabilities of M-SHORAD. Both ADA and maneuver leaders will have challenges as the integration of SHORAD begins at every division; however,

with a good attitude and a drive to make positive change, nothing is impossible. The 4-60 ADA mission is "the enemy will not surveil, target, interdict or attack our formations from the air." This is a promise we plan to keep. The future looks bright.

CPT Leopoldo Negrete is a tactical operations officer with 4th Battalion, 60th Air Defense Artillery, Division Artillery, 1st Armored Division at Fort Sill, OK. Previous assignments include commander, Echo Battery, 1st Battalion, 31st Field Artillery, 434th Field Artillery Brigade at Fort Sill; and executive officer and platoon leader, Delta Battery, 3rd Battalion, 43rd Air Defense Artillery, 11th Air Defense Brigade, Fort Bliss, TX. His military schooling includes the Air Defense Artillery Captain's Career Course, Space Operations Course and Observer/Controller Academy. He holds a master's of arts degree in history and a graduate certificate in intelligence and national security studies from The University of Texas at El Paso.

Notes

[1] Frank J. Caravella, *First to Fire*, Fort Bliss, TX: OCADA, 1995.

[2] David L. Mann, Roger F. Mathews and Francis G. Mahon, "None of This Is Going to Matter if You're Dead": Modernizing Integrated Air and Missile Defense Must Remain Army's Top Priority," *Real Clear Defense*, https://www.realcleardefense.com/articles/2020/06/16/none_of_this_is_going_to_matter_if_youre_dead__modernizing_integrated_air_and_missile_defense_must_remain_armys_top_priority_115381.html.

[3] FM 3-01.44, *Short-Range Air-Defense Operations*, Headquarters Department of the Army: Washington, DC, July 21, 2022.

[4] Mann, Mathews and Mahon.

[5] FM 71-1, *Tank and Mechanized Infantry Command Team*, Headquarters Department of the Army: Washington, DC, Jan. 26, 1998.

[6] FM 44-43, *Bradley Stinger Fighting Vehicle and Squad Operations*, Headquarters Department of the Army: Washington, DC, Oct. 3, 1995.

[7] FM 3-01.44.

[8] Ibid.

[9] Ibid.

[10] FM 3-90-1, *Offense and Defense, Volume 1,* Headquarters Department of the Army: Washington, DC, April 13, 2015.

[11] *Military Times*, "Charles Earnel Branson," The Hall of Valor Project, https://valor.militarytimes.com/hero/3833.

[12] Ibid.

Raising the Guidon:
Leveraging Cultural Excellence for Reconnaissance and Security Operations

by MAJ Tobias Raimondo, Australian army

You win or you die in the profession of arms. As GEN Donn A. Starry argues, we cannot rely on technology.[1] We also cannot be terrified by the prospect of peer-threat large-scale combat operations (LSCO).[2] Winning matters,[3] and to develop a cohesive team focused on achieving their best, it is vital to foster a culture of excellence to be better than your enemy.

Reconnaissance and security (R&S) operations are essential to all successful LSCO.[4] Therefore developing and leveraging a culture of excellence in R&S operations is particularly important in Cavalry units at all echelons.

But culture is hard to influence. It is iterative and takes time as personnel rotate through units. This difficulty is exacerbated if achieving excellence is not perceived as crucial to winning. Given the importance of the Cavalry to the commander in allowing brigade combat teams to achieve positions of relative advantage,[5] how can leaders harness the potential that exists within their people to be better than the enemy?

This article discusses three frameworks for the Cavalry to leverage a culture of excellence in R&S operations:

- First, through a better understanding of how enemy and friendly forces will fight.
- Second, through consistency of planning sessions combined with tough training under realistic combat conditions.
- Finally, through the correct employment of reward and recognition that reinforces lessons-learned and effort applied toward R&S training.

This article concludes that most mechanisms proposed apply more widely than R&S operations and that developing and maintaining a culture of excellence is vital to the success of the U.S. Army and its allies into the future.

Disclaimer. The author wishes to acknowledge that effective leadership and communication are persistent and fundamental factors within each of the following frameworks and recommended mechanisms. However, these will deliberately not be included as a focus of this article.

Understanding enemy and friendly forces

Mission analysis. Understanding both the threat and the friendly forces you are going into battle with is essential for the Cavalry, who generally operate ahead of the main body in R&S operations. During planning sessions, mission analysis is the most important step of the military decision-making process (MDMP) for this very reason. As the 2012 version of Field Manual (FM) 6-0 concisely articulated, "Since no amount of subsequent planning can solve an insufficiently understood problem, mission analysis is the most important step in MDMP."[6] But how is it possible to develop a culture of excellence in these areas?

Know the enemy. Without a good understanding of the enemy, it is impossible for commanders to provide focused and relevant training for R&S operations. Accordingly, following initial training, developing a baseline understanding of pacing challenge and acute threat[7] [8] capabilities should be prioritized given that they are more foreign to Cavalry leaders than their own forces.

Commanders can accept some risk in lack of complete familiarity with enemy forces given that tactics, techniques and procedures will evolve over the course of a conflict. Both the armed forces of Ukraine and Russian forces attempted to adapt, with varying degrees of success, in 2022.[9] [10] However, once a threat to the nation is realized and a campaign is underway, investing time in understanding the specific enemy commander and the precise capabilities faced will produce significant dividends.

To strengthen information collection of a threat force's course of action (CoA), Cavalry professionals should be encouraged to attend the Cavalry Leader's Course (CLC) and military-intelligence courses to enhance their ability to rapidly answer priority intelligence requirements (PIRs). Use of simulation, combined with professional-development briefs (at different security levels) using realistic potential adversaries, will also ground Cavalry mindsets in reality and mitigate the risk posed by insufficient division and brigade funds to train in the field at unit level.

Force-on-force competition in the field that employs an opposing force (OPFOR) mimicking enemy capabilities and methods of fighting based off doctrine is a recommended technique that can produce a beneficial performance-pressure environment.[11] If unit-level resources do not allow for this mechanism, a similar effect can be achieved at a smaller scale using games, either wargaming or barracks-based competition. From a lessons-learned perspective, it is essential that OPFOR provide backbriefs on how they successfully targeted U.S. forces, mirroring combat-training center (CTC) OPFOR during rotations. These backbriefs should occur at the lowest level possible to assist all personnel in Cavalry units to understand their own strengths and weaknesses.

Know yourself. Understanding friendly forces, including joint and international allies, and enablers is similarly vital to leveraging cultural excellence in R&S operations. During CLC many students are initially unable to apply the fundamentals of R&S because they are unaware of how to employ their

assets. They lack the knowledge of and experience with certain capabilities for correct employment.

This can be overcome with training and education. Attendance in established courses such as the Joint Firepower Course, which requires integration of multiple friendly capabilities, offers an established model to Cavalry leaders. In a peer-threat LSCO scenario, it will likely take place with limited notice, with attachments being allocated almost certainly at the eleventh hour.

To overcome the inevitable friction, chaos and uncertainty of changes or additions to task-organization, familiarization briefs and training events such as leader professional-development sessions should occur in advance to mentally prepare the unit. Cavalry leaders should, at a minimum, understand and be able to explain employment of all assets that can assist with R&S across their brigade. However, it must not be overlooked that LSCO are extensive joint combat operations and during ground combat typically involve operations by multiple corps and divisions.[12] Familiarity with and understanding this larger pool of available assets will engender confidence, improve morale and is fundamental to generating a culture of excellence in Cavalry units.

Planning and training under tough, realistic conditions

Planning under tough, realistic conditions. Consistency of tough, realistic planning sessions, combined with training under combat conditions, is key to developing a culture of excellence. During peacetime training, the fear and danger elicited by executing operations against a live, thinking enemy intent on killing you is difficult to replicate.

J.F.C. Fuller wrote, "Tactical success in war is generally gained by pitting an organized force against a disorganized one."[13] Organization can only be achieved through planning and training. Officers generally bear the burden of planning. Noncommissioned officers (NCOs) should therefore be focused on providing advice and

verifying that Soldiers are able to execute routine tasks that enable success and survivability on the battlefield.

Maintenance and fitness must be key events that are never missed. NCOs enforce standards and discipline that give commanders confidence and create true morale among Cavalry Soldiers. It is not enough to plan for major exercises and CTC rotations – this creates an incorrect mindset of planning for the exercise. Units train for war and must plan accordingly under tough, realistic conditions.

There are several other mechanisms that can be employed to make planning tough and realistic for Cavalry units. There is no monopoly on ideas. For example, normalize removal of personal electronic devices at all levels, including commanders, except for designated safety staff. Ban tents for planning staff if appropriate. Plan to execute a deception operation as GEN George S. Patton did in August 1944 that inflicts multiple dilemmas on an enemy and achieves economy-of-force.[14] [15]

Commanders should force planning staff to follow processes in doctrine rather than unit standing operating procedures or abbreviated guides formulated during career courses. Planning should incorporate, at a minimum, both a most likely and most dangerous enemy-force CoA with several branches and sequels.

Plan for R&S operations to take place in contested airspace on terrain that is unfavorable or challenging to force doctrinally correct employment of ground-reconnaissance assets as a priority, with enablers used to enhance collection. Focus evaluation of commanders and planning staff in R&S operations using 360-degree feedback against intent statements, commander's reconnaissance guidance and commander's security guidance. If those vital areas are in any way unclear to subordinates, retraining must occur. These planning mechanisms are strengthened when coupled with R&S training under tough, realistic conditions.

Training under tough, realistic conditions. There are countless

mechanisms that may be employed during R&S field-training opportunities created for Cavalry units. Two stand out as highly effective in quickly developing a culture of excellence. First, R&S training should take place with limited notice and replicate a rapid-deployment scenario. Second, using David Kolb's experiential-learning model,[16] an effective tool would be to modify unit collective-training methodology to "run" (with close evaluation) in the crawl-walk-run pattern. This close evaluation should occur before the Cavalry unit is given time to train and conduct its own internal field training. Lessons-learned from the initial "run" phase will focus subsequent training and will show leaders the pathway to excellence at multiple levels.

There are many other mechanisms that may be employed to simulate tough, realistic conditions during R&S training. Cavalry leaders should plan to deliberately "kill off" subordinate leaders and force the one-up drill at appropriate points in the exercise design using a conditions-based trigger. Train using the eight-step training model[17] that incorporates combined arms and mission command, using junior NCOs to maximum effect to minimize the burden on senior leaders.

Aim to reach a sufficiently challenging level of training safely. This may look like R&S operations being conducted at night, avoiding roads, in poor weather conditions and using Mission-Oriented Protective Posture-4 equipment.

Train gunnery using the Standardized Armor Base of Training created using the new readiness-level progression[18] model with experienced master gunners. Test the transitions between operations and logistics resupply and seek to exploit gaps created. Verify that Cavalry elements at echelon understand the defeat mechanisms that exist in doctrine and are training to enact them using innovative approaches. Rehearse endlessly routine but important tasks such as establishing observation posts, engagement-area development and passage of lines.

Repetition in a variety of environments is vital to train Cavalry units to

failure to ensure that task mastery is achieved.[19] Execute training scenarios against a live enemy repeatedly until it becomes legitimately effortless and not falsely represented to senior commanders. Test every element in the organization at the "threshold of failure."[20]

These mechanisms, if employed appropriately during training, will assist in leveraging a culture of excellence in a traditional sense, but what of multidomain operations (MDO)?

Multidomain operations. In 2023 and beyond, U.S. Army tough, realistic training must include a focus on MDO. It is clear the U.S. Army and allies are still coming to terms with MDO, including within R&S operations. The new FM 3-0 provides an excellent and timely starting point based in doctrine for Cavalry forces at all echelons. FM 3-0 demonstrates the first principles of speed, range and convergence of the cutting-edge technologies needed to achieve future decision dominance and overmatch against our adversaries.[21]

An additional mechanism given recent global events would be to seek to integrate members of the armed forces of Ukraine to instruct U.S. Army and allies on key lessons-learned from combat against Russian forces in a multidomain context.

Ensuring Cavalry forces at echelon are allocated the correct assets to collect information to answer PIR across domains is vital. Training with those enabling assets in advance of real conflict is even more crucial. Modular construction of Cavalry forces also offers a solution to the problem of training for multiple potential adversaries with varying capabilities, but such a construct inadvertently weakens personal relationships and the human capital essential in military operations.[22] Training together will set conditions for teams to overcome the unknowns.[23]

There are further mechanisms to develop a culture of excellence in R&S operations using MDO. Train to gain and maintain enemy contact using all currently known forms of contact, particularly those rarely used. Train all elements of the primary-alternate-contingency-emergency plan, including a period of complete communications blackout.

Another recommended method of training to fight across domains is through tactical checklists, nested with doctrine and training circulars. However, importantly, checklists tie proficiency to procedure rather than mission success. Cavalry professionals who rely solely on checklists in training are at risk of formulaic mission preparation and execution, risking less room for initiative, imagination and adaptation against a thinking enemy. To ensure training is worthwhile, MDO should be externally evaluated and immediately subject to an after-action review (AAR) that emphasizes points to improve and highlights areas to sustain.

Cavalry command posts at each echelon, including division, must be small and agile, able to rapidly establish and displace, be redundant (to a degree), with a deceptively small electromagnetic footprint. Ensure all unit personnel understand that both encrypted and unencrypted communications emit a signature that can be detected. As mentioned, use of non-secure means of communication should be banned unless tied to deception. Accordingly, rehearse active deception operations that include a focus on enemy information denial and active counterreconnaissance and measure the effectiveness during the AAR. Conversely, passive deception and camouflage techniques should also be heavily emphasized theoretically and applied practically in training environments.

Masking should occur in the full spectrum, multidomain effort to deceive enemy sensors and disrupt enemy targeting. Create competitions in units to determine the most cunning elements (including headquarters, sustainment and fighting elements) that employ deception and camouflage across MDO using masking or obscuration via passive and active countermeasures. It is vital to include MDO as a focus when leveraging excellence in R&S operations to win during LSCO.

Reward and recognition

Basic application. Effective reward and recognition enables a culture of excellence within Cavalry units. Reward and recognition should be public and inspire others to achieve excellence in R&S operations. To guide thinking, principles of reward and recognition used by the Australian Defence Force are *personalized*, *immediate*, *aligned* and *fair*. If done effectively, reward and recognition will tap into the discretionary effort that exists within a Cavalry unit and within each individual officer and Soldier. For those who would argue that the U.S. Army already recognizes its personnel too much, consider that if there is indeed no quota on discipline, perhaps there should be no quota on recognition – if correctly focused to aid in leveraging cultural excellence.

The U.S. Army already uses several formal and informal mechanisms across units to recognize and reward, but

Figure 1. Pathways to attain an R&S badge / tab.

how can this be applied to R&S operations?

To identify what to recognize in R&S operations, the AAR remains one of the most useful mechanisms for units to identify points to improve and sustain into the future. However, post-AAR, rewarding effort, not just success, is key.[24] The previous sections on understanding enemy and friendly forces as well as planning and training under tough, realistic conditions may be useful in guiding what commanders choose to recognize.

In addition, go out of your way to recognize leaders who display brilliant examples of tactical foresight and adaptation. Reward those who read widely, use doctrine and incorporate lessons from the past into training. Recognize those individuals within the staff who consistently develop three CoAs for the commander with a clear recommendation. Reward leaders who invest time with their Soldiers rather than cower in their offices. Clearly, reward and recognition are essential to establish, sustain and leverage a culture of excellence.

Future opportunity. Another proposed method to leverage reward and recognition to generate a culture of excellence for R&S specifically is the introduction of a "reconnaissance and security" badge / tab for Soldiers to wear on their uniforms. This proposal is a skill identifier similar to an Airborne badge or a Ranger tab. To obtain the badge / tab, officers and Soldiers must complete training at the U.S. Army Armor School at Fort Moore, GA, graduating from both CLC and the Scout Leader's Course. A separate pathway would exist for officers and Soldiers as depicted in Figure 1.

Conclusion
The potential for excellence exists within each individual officer and Soldier. It is evident that many of the mechanisms proposed in this article are applicable to the wider force and not simply Cavalry units conducting R&S. However, R&S operations are essential to all successful LSCO[25] and must always be a primary focus of Cavalry units.

Developing and leveraging a culture of excellence in Cavalry units in R&S operations is vital to the future success of the U.S. Army and allies. This article has demonstrated that leveraging a culture of excellence can be achieved through multiple mechanisms within three frameworks:

- First, through a better understanding of enemy and friendly forces.
- Second, through consistency of planning and training under tough, realistic combat conditions.
- Finally, through correct employment of reward and recognition that reinforces lessons-learned and effort displayed during R&S training.

If these mechanisms are successfully employed by Cavalry leaders at every echelon, winning is not in question. Raise the guidon!

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Notes
[1] "The more intense and difficult the battle becomes because of numbers, weapons ranges, all the lessons cited a moment ago regarding the Yom Kippur War, the more Soldiers and their leaders become the critical and deciding element. Which is the better tank? The one with the better crew, of course! And so it is and ever shall be that battles are won by the courage of Soldiers, the excellence of the leaders and the effectiveness of the training in their units before the battle begins. Technical developments in new weapons systems increase range, lethality and precision. Increased also is the intensity of the battle, the effects of fatigue, the destruction of battle, the presence and pervasiveness of fear. No amount of technology can be invoked to solve these problems. And so we're back to the Soldiers, their leaders and the excellence of the training of these units in which they fight." –GEN Donn A. Starry; *American Military Thought: A Perspective*; U.S. Army Training and Doctrine Command historians conference, Fort Monroe, VA; Jan. 17, 1989.

[2] Department of the Army FM 3-0, *Operations*, 2022.

[3] Army Chief of Staff GEN James McConville first outlined "People First, Winning Matters" in the 2019 Army People Strategy.

[4] Department of the Army FM 3-98, *Reconnaissance and Security Operations*; 2023.

[5] Ibid.

[6] Department of the Army FM 6-0, *Commander and Staff Organization and Operations*; 2012.

[7] Updated terminology used to describe China as the pacing challenge and Russia as an acute threat at the 2022 Maneuver Warfighting Conference at Fort Moore, GA.

[8] FM 3-0, foreword by GEN McConville.

[9] A.S. Bowen; *Russia's War in Ukraine: Military and Intelligence Aspects*; Congressional Research Service report, R47068; 2022.

[10] T. Ripley; *Russian Military Adapts Command and Control for Ukraine Operations*; Janes IHS; 2022.

[11] Robert Eisenberger and Justin Aselage; "Incremental effects of reward on experienced performance pressure: positive outcomes for intrinsic interest and creativity"; *Journal of Organizational Behavior*, 30(1); 2009.

[12] FM 3-0.

[13] J.F.C. Fuller; Fuller's plan 1919; first edition May 24, 1918, in *Autobiography: Memoirs of an Unconventional Soldier*; London: Nicholson and Watson; 1938.

[14] S.L. French; "Gaining the advantage: how Patton's unique information forces and competitive approach to information enabled operational-level success in August 1944"; *Military Review* March-April 2022.

[15] FM 3-98, *Reconnaissance and Security Operations*; 2023.

[16] D.A. Kolb; *Experiential Learning: Experience as the Source of Learning and Development* (second edition); Pearson Education Inc.; 2015.

[17] FM 7-0, *Training*; 2021.

[18] LTC Daniel Cannon and LTC John Nimmons; "Readiness-Level Progression: Certifying Expertise in Lethality as a Subset of the Armor Standardization and Training Strategy 2030"; *ARMOR* Summer 2022 edition.

[19] FM 7-0.

[20] Terminology used by MG Curtis A. Buzzard at the 2022 Maneuver Warfighter Conference, Fort Moore, GA.

[21] FM 3-0, foreword by McConville.

[22] C. Boon, R. Eckardt, D.P. Lepak and P. Boselie; "Integrating strategic human capital and strategic human-resource management"; *The International Journal of Human Resource Management*, 29(1); 2018.

[23] Donald Rumsfeld; U.S. Secretary of Defense news briefing; Feb. 12, 2002.

[24] Useful discussion and analysis regarding both valence and expectancy theory for rewarding effort can be found in A.S. DeNisi and R.D. Pritchard; "Performance Appraisal, Performance Management and Improving Individual Performance: A Motivational Framework"; *Management and Organization Review*; 2(2); 2006.

[25] FM 3-98.

Acronym Quick-Scan

AAR – after-action review
CLC – Cavalry Leader's Course
CoA – course of action
CTC – combat-training center
FM – field manual
LSCO – large-scale combat operations
MDMP – military decision-making process
MDO – multidomain operations
NCO – noncommissioned officer
OPFOR – opposing forces
PIR – priority intelligence requirement
R&S – reconnaissance and security

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.
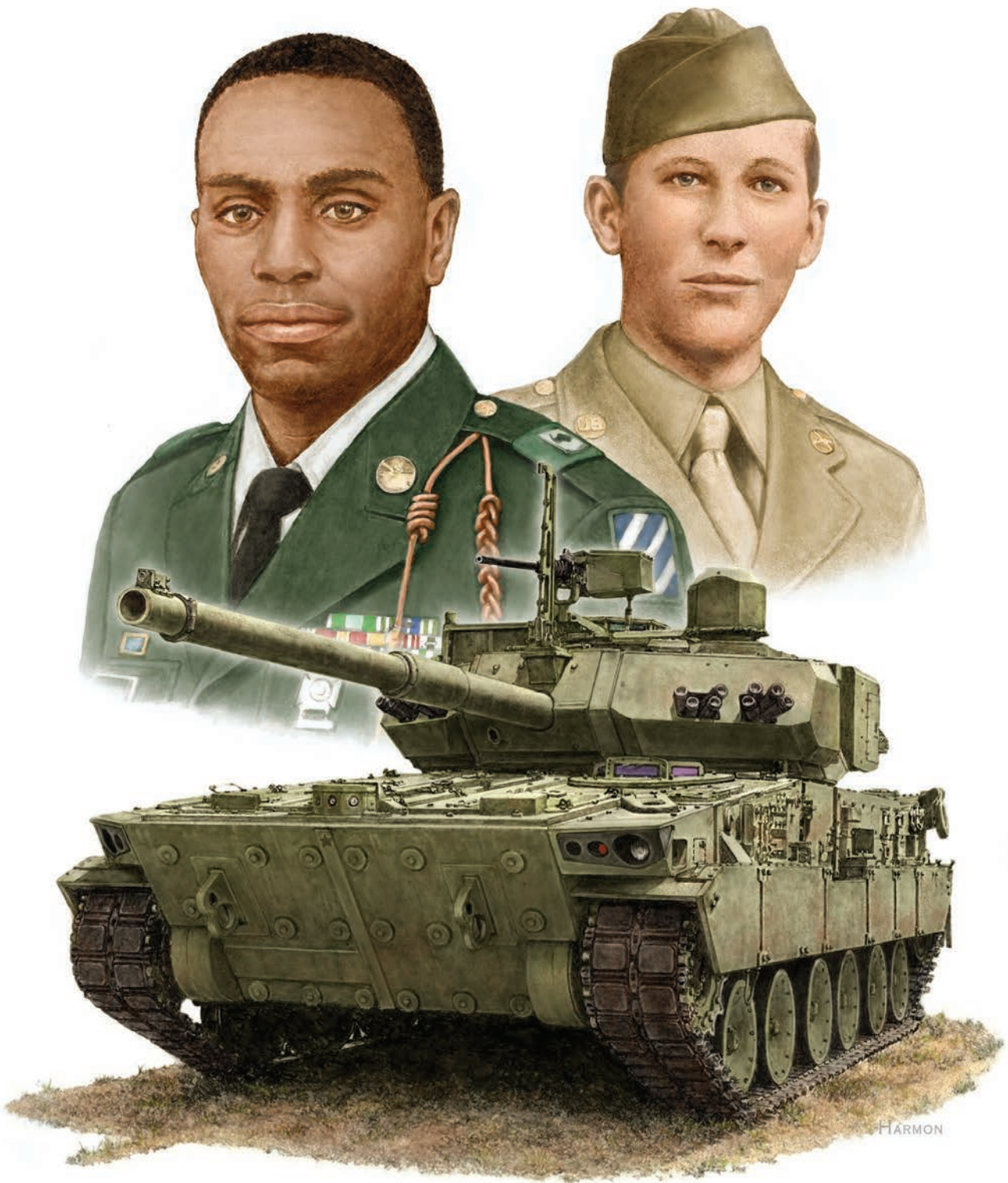
SSHOEMAKER, LEVI SGT
Unit: Company A, 1st West Virginia Cavalry. Place and date of action: Nineveh, VA, Nov. 12, 1864. Born: Monongalia County, WV. Date of issue: Nov. 26, 1864. Citation: Capture of flag of 22nd Virginia Cavalry (CSA).

SLUSHER, HENRY C. PVT
Unit: Company F, 22nd Pennsylvania Cavalry. Place and date of action: Near Moorefield, WV, Sept. 11, 1863. Born: Washington County, PA. Date of issue: April 4, 1898. Citation: Voluntarily crossed a branch of the Potomac River under fire to rescue a wounded comrade held prisoner by the enemy. Was wounded and taken prisoner in the attempt.

SMITH, CHARLES H. COL
Unit: 1st Maine Cavalry. Place and date of action: St. Mary's Church, VA, June 24, 1864. Entered service: Maine. Born: Hollis, ME. Date of issue: April 11, 1895. Citation: Remained in the fight to the close although severely wounded.

SOUTHARD, DAVID SGT
Unit: Company C, 1st New Jersey Cavalry. Place and date of action: Sailors Creek, VA, April 6, 1865. Born: Ocean County, NJ. Date of issue: July 3, 1865. Citation: Capture of flag and was the first man over the works in the charge.

SOVA, JOSEPH E.
Rank and unit: Saddler, Company H, 8th New York Cavalry. Place and date of action: Appomattox Campaign, VA, March 29 to April 9, 1865. Born: Chili, NY. Date of issue: May 3, 1865. Citation: Capture of flag.

BOOKER

The M10 Booker was formerly known as mobile protected firepower. See discussion in Chief of Armor Hatch and Gunner's Seat.

114TH CAVALRY REGIMENT

THE PRAIRIE SENTINELS

Yellow is the color traditionally associated with Cavalry. The blue has been adapted from the Kansas state flag. The spur rowel refers to the unit's designation and reflects the multifaceted mission and capabilities of Cavalry. The sheaf of wheat on the blue background alludes to the unit's home location in Kansas, often called the bread basket of the United States. The embattled division of the shield symbolizes defense and the purpose of a National Guard unit. The distinctive unit insignia was approved June 24, 1981.