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Mounted Maneuver Journal

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MASTERY OF THE FUNDAMENTALS

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Maneuver Leader Fundamentals

The last few months have been exciting at Fort Benning, GA, as we celebrate the 75th year of the Armored Force:

- The Armor School hosted the Saint George Ball April 24 with U.S. Army Training and Doctrine Command (TRADOC) commander GEN David Perkins as the guest speaker and 91-year-old CPL Neil French as the guest of honor. French was a Sherman gunner involved in the relief of Bastogne.
- From May 4-8 we hosted the 2015 Gainey Cup Best Scout Squad Competition. This competition physically and mentally challenged all troopers by rigorously testing knowledge, tactical competence and fundamentals of reconnaissance-and-security operations. The 2015 Gainey Cup winners were from 2nd Cavalry Regiment; congratulations for earning the title of Best Scout Squad in the Army!
- Finally, we are very proud of CSM Tim Metheny, who was selected as the first 19-series Maneuver Center of Excellence command sergeant major. His demonstrated competence and character will contribute greatly to the development of our future maneuver force.

As we look to the future, we must focus our training to becoming unequivocally unmatched and highly capable to effectively operate across the range of military operations.[1] As an institution, we have not fully transitioned our training emphasis, even though we constantly hear about getting back to the fundamentals. The question we need to answer is: "What are the fundamentals?" At Fort Benning, we are working toward a common framework with a leader-development strategy to develop *smart*, *fast*, *lethal* and *precise* Soldiers and formations. In the next few paragraphs, I will discuss briefly what I see as maneuver-leader fundamentals (platoon sergeant through company commander).

The intent is to focus the development of our maneuver leaders on a reasonable number of fundamentals so they can work toward mastery. Otherwise, we are likely to develop a broad array of tasks that achieves neither mastery nor proficiency from one unit to another. Training, supply and maintenance management are important aspects all leaders should master, but the following list is tailored specifically toward maneuver leaders as defined above.

1. **Troop-leading procedures.** We are doing well in getting rid of the one-page concept of operations but must get back to complete orders with graphics and a means to provide command and control such as an execution matrix.
2. **Maneuver.**
   - Fire: Leaders must master the weapon systems/platforms assigned to their unit and fully understand direct-fire planning.
   - Move: Leaders must understand the elements of command and control that allow their formation to gain positional advantage. Also, maneuver leaders must master actions on contact to act faster and more decisively than their adversary.
3. **Employ fires and enablers.** Leaders must understand how to effectively employ and integrate additional enablers as part of their maneuver to ensure the initiative and overmatch are maintained. Enablers to focus on are fire-support assets, engineers, unmanned aerial systems and aviation, at a minimum.
4. **Sustainment.** For armored forces, sustainment is our lifeblood, and maneuver leaders are responsible for synchronizing and integrating sustainment in their operations. We've established the Maneuver Leader Maintenance Course on Fort Benning to develop maintenance competencies. Key areas of emphasis are *fixing*, *fueling*, *arming, resupply* and *casualty evacuation;* these functions should be trained with the same intensity as

we have on the gunnery range.

5. **Manage tactical risk.** Tactical risks are those actions that may preclude successful mission accomplishment. Maneuver leaders must develop the skills to visualize, assess and identify tactical risk and be capable of developing mitigation measures or of identifying the risk to their next higher command for more resources.

Leaders will remain the most decisive element of combat power, and leadership is more critical than any emerging technology. The maneuver-leader fundamentals are intended to focus our leaders' development on establishing the skills and attributes to be smart, fast, lethal and precise. With this foundation, leaders will be best prepared physically, socially and cognitively to close with, engage and destroy threats in close combat and then have the necessary skillsets to adapt to a changing set of battlefield circumstances.[2]

I encourage leaders to use Armor School media outlets to present your viewpoints on these topics. Share your leader development and education plan, best practices and lessons-learned on the U.S. Army Armor School (USAARMS) Facebook page (https://www.facebook.com/USAARMS) or on milSuite (www.milsuite.mil/book/Armored_Force).

Notes

[1] TRADOC Pamphlet 525-3-1, ***Army Operating Concept, "Win in a Complex World,"*** dated Oct. 7, 2014.

[2] TRADOC Pamphlet 525-3-7, ***Human Dimension Concept***, dated May 21, 2014.

Acronym Quick-Scan

TRADOC – (U.S. Army) Training and Doctrine Command
USAARMS – U.S. Army Armor School

GUNNER'S SEAT

CSM Michael Clemens
Command Sergeant Major
U.S. Army Armor School

Noncommissioned Officer Expertise

"There are three reasons I failed. Not enough training. Not enough training. And not enough training." —Haruki Murakami

If our goal is the mastery of fundamentals, then noncommissioned officers (NCOs) are the start point. An NCO's primary duty is to train, and to him or her is entrusted the responsibility for training enlisted Soldiers, crews and teams. They take broad guidance from their leaders; identify the necessary tasks, standards and resources; and then plan, prepare, execute and assess training. NCOs ensure Soldiers demonstrate proficiency in their individual skills, warrior tasks and battle drills. Simply put, the NCO is responsible for training and maintaining the Soldier. On their shoulders rests the individual expertise, adeptness of the team and crew, and in large part, the proficiency of the organization.

The NCO has served many roles in the U.S. Army. The sergeant has been, and forever will be, in charge of training the individual Soldier. Sergeants know their Soldiers, their skills and their shortcomings.

One of the earliest examples of the use of the NCO in American history is SGT John Ordway of the famed Lewis and Clark Expedition. Throughout the winter of 1803-04, Ordway, an experienced soldier from 1st Infantry Regiment, assisted CPT William Clark in establishing Camp River Dubois. During the five months of the encampment, Clark and Ordway received, selected, trained and disciplined personnel for the expedition. On several occasions, Ordway commanded the camp in the officers' absence. He was the top sergeant of the expedition, expected to maintain order and discipline and to see that daily operations ran smoothly.

He was also expected to lead. On the trip back to Saint Louis, MO, where they started, Ordway was placed in command of 10 men entrusted to make the trip back to the head of the Jefferson River, where the expedition had left their canoes before crossing the mountains. They were to follow the river and travel to the Missouri River, where they would meet Lewis and Clark. Ordway and his group successfully completed this challenging assignment, reuniting with the main body and bringing to a close one of the most dramatic episodes in American history. Throughout the expedition, military training and discipline proved critical, and NCO expertise proved pivotal to the mission's success.

Another illustration of NCO expertise, adeptness of a crew and organizational proficiency is SGT Curtis Grubb Culin III. A native of Cranford, NJ, Culin was serving as a tanker with 102nd Cavalry Reconnaissance Squadron (New Jersey National Guard, "Essex Troop," 2nd Armored Division) when he came up with the four-pronged plow device created from scrap steel from a German roadblock. When attached to the front of his tank, it was successful in rapidly plowing gaps in the hedgerows during the Battle of Normandy.

Culin's innovation and initiative were mentioned in one of the last addresses by President Dwight D. Eisenhower in a Jan. 10, 1961, speech to the American Society of Mechanical Engineers: "There was a little sergeant. His name was Culin, and he had an idea. And his idea was that we could fasten knives, great big steel knives in front of these tanks, and as they came along they would cut off these banks right at ground level – they would go through on the level keel – would carry with themselves a little bit of camouflage for a while. And this idea was brought to the captain, to the major, to the colonel, and it got high enough that somebody did something about it – and that was GEN [Omar] Bradley – and he did it very quickly. Because this seemed like a crazy idea, they did not even go to the engineers very fast, because they were afraid of the technical advice, and then someone did have big questions, 'Where are you going to find steel for this thing?' Well, now, happily the Germans tried to keep us from going on the beaches with great steel *chevaux de fries* – big crosses – there were all big bars of steel down on the beach where the Germans left it. And [Culin] got … these things sharpened up, and it worked fine. The biggest and happiest group, I suppose, in all the Allied armies that night were those who knew that this thing worked. And it worked beautifully."

Culin's story perfectly demonstrates an NCO's mastery of his craft, ability to innovate and then train his unit and others to overcome a problem.

As illustrated in ***The Story of the Non-commissioned Officer Corps*** published by the U.S. Army's Center of Military History, in both the 20th and 21st centuries, technology dramatically changed the Cavalry, as it has warfare in general. The NCO Corps coped with the new inventions, just as it had taken other developments in stride. NCOs met this new challenge by becoming the commanders of individual tanks and armored cars and mastering the technical skills to maintain the fleets of new war machines, just as they had led patrols and cared for horses and saddles. It was the NCO Corps that in many ways provided the glue that held the branch together during the wrenching changes from horses to the internal-combustion engine.

The sergeants and corporals found that when technology changes, many functions continue, whether Soldiers are mounted on chargers, tanks or helicopters. Reconnaissance, screening and raiding can be performed by armored vehicles and helicopters; shock action by main battle tanks and attack aircraft. In each case, the fundamental techniques of leading, training and supervising troops on a day-to-day basis do not change. Whether on horseback or in a turret, the Cavalry NCO carries a great deal of responsibility. He must make quick decisions about deployment of forces on all types of terrain while remaining ready to respond quickly to mechanical breakdowns or the actions of hostile forces. He remains the immediate link between the officer and the private, translating planning into action.

In short, throughout our Army's history, it is the NCO who, as a master of the fundamentals, is an expert in his field and a trainer of the Soldier on which the success of our formations has rested. In the future, our success may well rest on the NCO's ability to maintain this level of expertise in a complex world.

Forge the Thunderbolt!

A Suggested Career Progression for the Cavalry Soldier

by MAJ Levi Thompson and MSG Jacob Stockdill

The past 14 years of war diminished the way the Army trains and employs its Cavalry squadrons in reconnaissance-and-security operations. Assigning areas the size of Rhode Island (or larger) to a Cavalry squadron and expecting it to achieve success along lines of effort focused on security, development and governance resulted in brigade commanders with the inability to fully develop their battlespace and make an actual impact on operations. This misuse of the Cavalry squadron comes from a lack of understanding how to conduct reconnaissance-and-security operations at all levels of leadership and is a primary result of not knowing what that reconnaissance Soldier brings to the fight.[1]

Understanding this crisis within the Armor and Cavalry community – but also within the Army – Fort Benning, GA, developed the Department of Reconnaissance and Security in Summer 2014 to initiate a future career progression for Cavalry and reconnaissance leaders. The Department of Reconnaissance and Security falls under 3rd Squadron, 16th Cavalry, 316th Cavalry Brigade. This organization is made up of subject-matter experts dedicated to providing future leaders and Soldiers with the tools to rebuild these gaps within our training through professional development steeped in reconnaissance-and-security doctrine and personal experiences.

Enlisted career path

So how do we develop a young Soldier or officer and turn him into a Cavalry leader well versed in reconnaissance and security? Through professional development and a proposed career path that provides specific training at essential points within the individual's career. The career path follows two separate developmental timelines defined as officer and enlisted. Eventually these training paths intertwine with each other as training and time in service progress.

Of note, the scout's career progression military-occupation specialty (MOS) is irrelevant within the Operations Division (maneuver, maneuver support, fires and Special Operations Forces); the training path is what is important. This is essential to shaping and molding Soldiers who will serve in Cavalry

Figure 1. Course career timeline. The Army trains scouts in a variety of developmental schools, including RSLC, ARC, Ranger, Pathfinder, Sniper, mountain warfare, master gunner and Javelin.

organizations into reconnaissance-and-security leaders. Though this article will primarily focus on Cavalry and infantry Soldiers, these reconnaissance-and-security courses are essential to reconnaissance leaders at all levels.

After enlistment and identification of a 19D Cavalry scout MOS, transformation from civilian to Soldier to scout begins. At completion of one-station unit training, the young warrior's career begins upon assignment to a Cavalry squadron within an armor brigade combat team (ABCT), infantry BCT (IBCT) or a Stryker BCT (SBCT) to begin to master his fieldcraft.

The Skill Level 10 Cavalry scout should master individual Soldier tasks associated with reconnaissance and security – namely:

- Send and receive reports in SALUTE format;
- Adjust indirect fire;
- Camouflage self and equipment;
- Conduct land navigation, both dismounted and mounted;
- Emplace an observation post (OP);
- Identify vehicles; and
- Understand operational terms and graphics.

Before consideration for promotion to sergeant, that young scout should take part in at least one full gunnery cycle (Tables I-VIII) and one full multi-echeloned training exercise from squad to squadron level. This is in addition to his Soldier tasks of weapons proficiency, first aid and other general Skill Level 10 tasks. Throughout all of this, the young scout must maintain a level of physical fitness that allows the freedom to explore other training without having to conduct extensive physical conditioning to be at the needed training level. It is at this stage the scout pursues opportunities for airborne, air assault and weapons-training schools.

During his tenure within the platoon, this young Soldier should have been exposed to nearly all the leadership positions within the scout platoon, developing a strong understanding of the role each leader plays within the organization.

Officer career path

Simultaneously, the commissioned officer's career path begins upon completion of his respective Basic Officer Leader's Course (BOLC) and receipt of orders assigning him to a Cavalry squadron. Unlike the enlisted Soldier, the future platoon leader will attend further schooling before he arrives at his unit.

Upon graduation from BOLC, future scout platoon leaders will attend the Army Reconnaissance Course (ARC). ARC must be priority for officers on assignment to a Cavalry squadron and should be highly sought after by those graduating in the top third of their BOLC course.

If an individual has recycled his BOLC course for failing to maintain standards, then Armor Branch, Human Resources Command (HRC), evaluates the Soldier for continued service within the Army or the Armor Branch and he loses his Cavalry assignment. These future leaders must be able to display a higher level of thinking. They must be able to anticipate where a supported unit might fail and work to mitigate those factors.

Leader grooming

As the enlisted Soldier spends more time within the scout platoon, he is eventually identified through performance and potential for more responsibility and leadership, thus beginning the trek of becoming a reconnaissance-and-security leader. Once identified for a position of greater responsibility, the Soldier is simultaneously groomed for attendance in the Warrior Leader's Course (WLC) and the Army's Ranger School.

WLC will teach young leaders basic skills to lead small groups of Soldiers, with emphasis on leadership. WLC is the initial course preparing these leaders to transition to noncommissioned officers (NCOs). Attendance at Ranger School after WLC will hone core leadership skills, transforming that future leader into a competent, tactically and technically smart leader in small-unit tactics.

Reconnaissance and Surveillance Leader's Course

Reconnaissance and Surveillance Leader's Course (RSLC) is an essential course to follow Ranger School. Though not the fourth phase of Ranger School, RSLC will provide the transition from the small-unit direct-action thought process to a leader who understands the importance of reconnaissance operations. In particular, if the reconnaissance leader failed at his mission, then in turn the supported unit's mission was a failure as well.

RSLC is a 29-day, live-in course that focuses on training and preparing young reconnaissance leaders for the conduct of dismounted long-range surveillance in support of a larger overall area reconnaissance mission.[2] RSLC will sharpen, hone, instill and enforce good habits of camouflage, infiltration and exfiltration techniques, small-unit dismounted patrolling and land navigation. The course's focus on conducting surveillance in support of area-reconnaissance objectives enhances the leader's adaptability and understanding of gathering and identifying information, which supports his higher commander's information requirements.

Also, the exposure to communication platforms while attending this course is world-class, using current issued equipment as well as soon-to-be-fielded communication equipment. The training, knowledge and expertise these young leaders receive ensures they are prepared to report information from anywhere on the battlefield during extreme conditions.

As a graduate of RSLC, the warrior possesses the knowledge and ability to operate in small teams under extreme mental and physical conditions on the edge of the battlefield. Enlisted Soldiers who graduate the course are awarded Additional Skill Identifier (ASI) B6.

As the reconnaissance leader grows within the reconnaissance community and his organization, his next step is to take what he learned at Ranger School and RSLC and apply those lessons and techniques to home-station training. It then falls on the individual Soldier to not only perfect his own skills but also to mentor and develop younger Soldiers within his unit. This process starts the next training cycle of the next gen-

Figure 2. RSLC students use specialized communication equipment during the course. *(Photo by Company D, 3-16 Cavalry)*

eration of leaders trained in reconnaissance-and-security operations.

As the enlisted Soldier continues to excel and develop, the next hurdle this Soldier will face is the Advanced Leader's Course (ALC). Upon graduation, he should prepare to assume the role of the section sergeant and eventually the senior scout and scout-platoon sergeant.

Army Reconnaissance Course

Immediately after graduating ALC, these NCOs must attend ARC. Attendance at ARC hones and develops these core skills, raising them to a higher fundamental level. The Army doesn't currently require ARC of NCOs to obtain the position of senior scout or scout-platoon sergeant, but the Army needs the best-qualified individuals in those positions.

ARC will provide NCOs and recent BOLC graduates with a higher understanding of reconnaissance-and-security operations. RSLC's program of instruction focuses on developing team-level reconnaissance missions, specifically:

- Occupying OPs/surveillance sites;
- Enabling detailed reconnaissance of named areas of interest (NAIs) and targeted areas of interest (TAIs); and
- Subsequently allowing commanders to make decisions on the battlefield.

ARC further develops this skillset by testing the scout-platoon leader's ability to layer his reconnaissance effort through multiple OPs and to incorporate air and ground assets. The ARC graduate builds on the instruction provided at RSLC and walks away with a higher fundamental understanding, nesting his mission within the commander's reconnaissance guidance. Through further refinement of higher NAIs/TAIs and developing platoon reconnaissance objectives associated with priority intelligence requirements, the platoon leader is able to provide time-sensitive information to enable the commander to make a decision on the battlefield.

Potential reconnaissance-and-security leaders must demonstrate an ability not only to persevere under physical and mental pressure but also be able to make the right decision in tough circumstances and be able to provide sound recommendations to higher-level leadership under those same conditions.

For recent BOLC graduates, attendance at Army Ranger School is highly recommended before attending ARC. If they are unable to do so, it is imperative that these future reconnaissance-and-security officers attend Ranger School immediately following their graduation from ARC. Though not a requirement, Ranger School is and has been a proven small-unit leadership course. The Army's future reconnaissance-and-security leaders must be experts in leadership; they must know and understand the limitations and capabilities of not only their own organizations but also of themselves. Earning the coveted Ranger Tab will set them apart from their peers and will bring with them to follow-on units initial credibility, especially those serving in infantry organizations who are not branched infantry.

ARC is a 27-day course spread over five weeks and two days that focuses on section- and platoon-level reconnaissance-and-security operations. The Adaptive Soldier Learning Training and Education methodology is the baseline for teaching students, fostering adaptive intangible leader attributes while reinforcing doctrine as a basis for solving problems. While attending the course, the student acquires:

- Additional communication- and sensor-platform training;
- Higher skills of land navigation and route planning; and
- Ability to conduct reconnaissance-and-security operations regardless of the platform he is assigned to or terrain on which his mission occurs.

Throughout the course, students will conduct reconnaissance-and-security operations, not only dismounted but also across multiple mounted platforms – from the individual to section and finally graduating at platoon level. An ARC graduate is awarded ASI R7, regardless if the student is enlisted or commissioned, and is a confident and agile reconnaissance leader who can operate in unpredictable combat environments within his commander's intent.[3]

After completing his initial schooling, a young officer trained in reconnaissance-and-security operations arrives at his duty station and is prepared to step into the role of a scout-platoon leader. The NCO returns to his unit, where he applies the tactics and techniques he was taught, working directly with fellow ARC graduates in creating a team that understands reconnaissance-and-

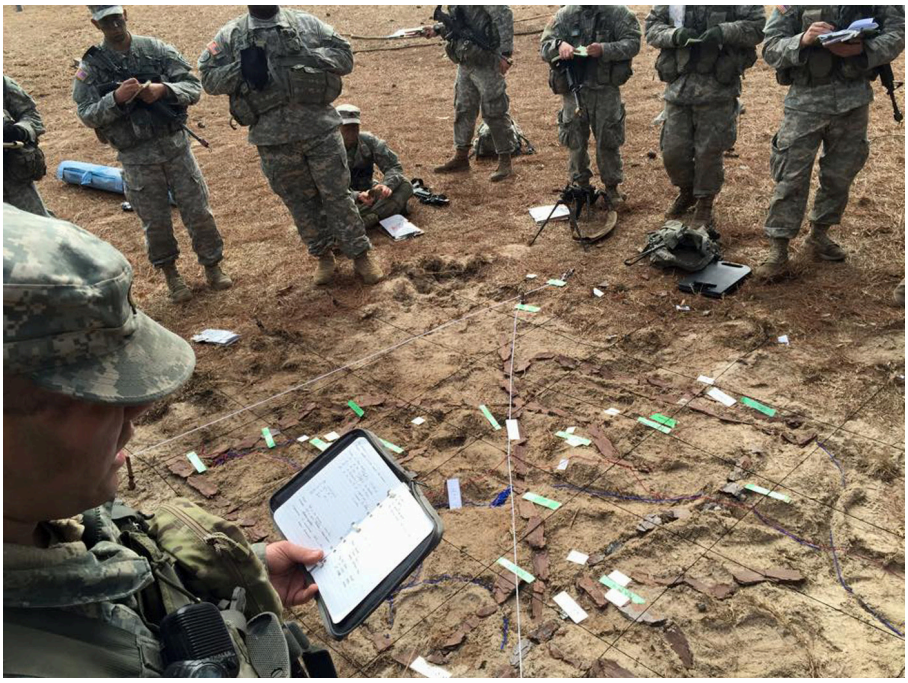

Figure 3. ARC students conduct troop-leading procedures in preparation for a reconnaissance-and-security mission. *(Photo by Troop B, 3-16 Cavalry)*

security operations. This pivotal time is where those leaders and Soldiers hone and improve their skills, providing their higher command with a lethal asset that can be employed to answer the commander's information gaps.

Natural progression of the platoon leader is to assume the duties of either another scout platoon or an executive-officer position within a Cavalry troop or company.

Cavalry Leader's Course

When the officer has successfully graduated the Maneuver Captain's Career Course (MCCC), the focus is on developing skills and understanding in reconnaissance-and-security planning at the troop and squadron levels and not on trying to earn more skill badges before arriving at his unit of assignment. Through attending the Cavalry Leader's Course (CLC), those Soldiers are developing the necessary skills. This course is pertinent for those who are scheduled to take command or serve as primary staff within a Cavalry squadron.

This same concept is applied to the NCO as the Soldier progresses in rank to the grade of master sergeant or is assigned to a staff to gain an understanding of reconnaissance-and-security planning at the troop and higher. ARC culminates at the platoon level, with a greater understanding of the commander's intent nesting the Cavalry troop mission with the squadron operation. CLC bridges this gap by teaching students how to plan and understand reconnaissance-and-security operations at the Cavalry troop, squadron and brigade level. The experience gained at RSLC and ARC enables the CLC student to consider tactical implications in his planning while developing realistic reconnaissance objectives and missions.

CLC is a three-week course (15 days) that prepares leaders for assignments in Cavalry units or BCTs as troop commanders. The course prepares staff officers/NCOs for tactical employment of Cavalry units and BCTs to conduct reconnaissance-and-security operations in unified land operations – as well as integration and synchronization of all warfighting functions in combined, joint and multinational operations.[4]

In addition to CLC, another reconnaissance-and-security course is offered to majors attending Command and General Staff College (CGSC) at Fort Leavenworth, KS. This elective provides future squadron operations officers and executive officers who have not previously attended CLC with a grounded understanding in reconnaissance-and-security doctrine. For those who have already attended CLC, attendance at this elective is highly encouraged to broaden their previous knowledge.

Concerns and discussion

CLC elective at Sergeants Major Academy. However, why is this

Figure 4. CPT Jared Graham, a CLC instructor assigned to 3-16 Cavalry, 316th Cavalry Brigade, provides insight on reconnaissance-and-security mission planning to two senior leaders within 1-7 Cavalry during a mobile-training-team CLC course at Fort Hood, TX. *(Photo by CPT John Farmer, 1st Brigade Combat Team, 1st Cavalry Division Public Affairs)*

same opportunity not afforded to our sergeants major when they attend the U.S. Army Sergeants Major Academy at Fort Bliss, TX? It is imperative for the development of senior NCOs. The Sergeants Major Academy needs to have an elective that is mirrored off the CGSC's CLC elective. This is essential because command sergeants major or operations sergeants major are the senior-enlisted personnel advising the commander or senior staff officer during the planning and execution of Cavalry operations. Command teams should be thinking and speaking alike, and understanding the same doctrine, ensuring continued success in training for and on the battlefield.

The CLC elective priority at the Sergeants Major Academy would be dedicated to those on assignment to a Cavalry squadron. Once the course has established itself within the academy curriculum, the ability to offer a reconnaissance-and-security operations elective, in addition to a requirement for select students, would benefit senior NCOs across the Army. Some of these senior NCOs might have attended CLC in the past, but if not, the academy would offer a venue for further development of our future reconnaissance-and-security sergeants major before they are assigned to a Cavalry squadron. This is a logical follow-on because the Army has already invested in the individual's promotion selection and attendance to the academy.

Professional development at Allies' courses. Professional development of the enlisted and commissioned Cavalry leader not only follows courses offered at the U.S. Army Armor School's Department of Reconnaissance and Security but should also look at other military schools and reconnaissance courses offered by our North Atlantic Treaty Organization allies. Some of these schools include the Mountain Warfare School, Jungle Operations Training Course, Canadian Advanced Recce Course, Canadian Pathfinder Course, Battle Staff, Intelligence-Collection Planners Course, Joint Fire Power Course, Heavy Weapons Leader's Course and Airborne. Fellowships are extremely important in rounding out a Soldier, whether NCO or officer. The fellowship provides an opportunity for a leader to further develop on an academic level.

Instructor placement. Crucial to the continued development of RSLC, ARC and CLC is the proper placement of instructors, both enlisted and officer. To ensure the best-qualified Soldiers are selected to instructor positions, the use of DA 1059s (Academic Evaluation Reports) is essential to these courses. This provides cadre the ability to identify potential candidates as future instructors and allows HRC's Armor Branch to assign nominative positions based off experience and conduct within the selected course. For officers, upon handing over the guidon, the post-command captain should transition to a broadening assignment in either a fellowship or as an instructor in a nominative position in RSLC, ARC or CLC. For NCOs, upon branch certification at the section sergeant, platoon sergeant or first sergeant positions, those who have outperformed their peers should consider a nominative position as an instructor in RSLC, ARC or CLC.

Assignment as an instructor is the Army's opportunity to ensure that knowledge and experience is not lost but is instead ingrained into the next generation of reconnaissance leaders as they begin their careers. Assignment to one of these courses is considered as important – if not more important – than assignment as a small-group instructor at a captain's career course. This same thought process is applied to the enlisted Soldier; an instructor position at one of the three courses is considered a nominative position identical to drill sergeant. It is imperative not only for the individual but for the future of our Cavalry force that the right individuals are placed in the right positions. This cannot be seen as hindering their career but looked at as a position that continues to set them apart from their peers and sets the stage for continued advancement through promotion.

This article is an initial thought on how to create and develop a well-rounded leader steeped in reconnaissance-and-security doctrine and execution. Currently some Soldiers might not have had the opportunity to attend some of these courses in their careers. This should not necessarily mean they are not considered for promotion or advancement throughout the force. If applicable, now is the time to start providing Soldiers with the support to attend these courses.

In closing, the Army is at a pivotal point, one where the next generation of Cavalry leaders can either be lost or developed. The Department of Reconnaissance and Security is the foundation for the process at each vital point in the Soldier's career. These core courses – RSLC, ARC and CLC – are where we have the ability to further train and develop those skills, building on each other while creating a more versatile reconnaissance and security professional. The onus is also on the individual Soldier and his leaders to ensure training based in doctrine occurs and that he employs his reconnaissance formation effectively. There is always a requirement for the information a reconnaissance leader confirms or denies as the threats on the battlefield constantly evolve.

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Notes

[1] Common recommendations from the combat training centers (CTCs) expressed during quarterly "CTC Review of Trends with [the Maneuver Center of Excellence]" via video teleconference.

[2] 316th Cavalry Brigade ***Course Learning Outcomes Handbook***.

[3] Ibid.

[4] Ibid.

Acronym Quick-Scan

ABCT – armored brigade combat team
ALC – Advanced Leader's Course
ARC – Army Reconnaissance Course
ASI – additional skill identifier
BCT – brigade combat team
BOLC – Basic Officers Leader's Course
CGSC – Command and General Staff College
CLC – Cavalry Leader's Course
CTC – combat training center
HRC – Human Resources Command
ILE – intermediate-level education
JSOC – Joint Special Operations Command
LRS – long-range surveillance
MCCC – Maneuver Captain's Career Course
MOS – military-occupation specialty
NAI – named area of interest
NCO – noncommissioned officer
ODA – Operational Detachment Alpha
OGA – other government agency
OP – observation post
RSLC – Reconnaissance and Surveillance Leader's Course
SLC – Soldiers Leader's Course
TAI – targeted area of interest
WLC – Warrior Leader's Course

Doctrine: Our Professional Language and Observations from the Joint Readiness Training Center

by CPT Gary M. Klein

Most Soldiers have witnessed a civilian's puzzled face as he listens to a running dialogue of Army acronyms and terminology. Like most professions, the Army's language and operating concepts are quite specialized. On the surface, our language represents our unique franchise on violence, but at its depths, our operating concepts capture our professional expertise based on centuries of military theory. The Army captures its expert knowledge and theory in doctrine, thereby codifying a common language and standards all Soldiers and leaders should understand. One's foundational understanding of doctrine begins during initial military training, and it must continue throughout one's career in both operational and institutional assignments.

Doctrine is the foundation leaders use to efficiently and effectively plan and communicate. It embodies the shared language and understanding that enables Soldiers and leaders to easily move from one unit to another. Leaders modify the application of doctrine based on the mission variables of mission, enemy, terrain, troops available, time and civil considerations, but the unit that neglects its doctrinal foundation does so to its own detriment. A lack of doctrinal proficiency can manifest itself in inefficiency, miscommunication or even mission failure.

Observations from the Joint Readiness Training Center (JRTC) indicate there are frequent challenges that could be overcome through a more thorough understanding of doctrine. Each rotational training unit (RTU) has distinct strengths and weaknesses, including varying levels of doctrinal proficiency. A few of the more frequent and significant doctrinal challenges RTUs struggle with include not understanding the primacy of purpose; misunderstanding the difference between a backbrief and a rehearsal; and misusing doctrinal terms, including those that have been rescinded, modified or are simply non-doctrinal.

In one instance, during a parallel-planning process between a brigade combat team (BCT) and its subordinate Cavalry squadron, the BCT assigned the squadron the task "screen" and purpose "to identify friendly avenues of approach." However, the assigned screen line was a significant distance from the brigade's objective, which limited the squadron's ability to observe and identify avenues of approach up to the objective. If the Cavalry squadron had conducted a "zone reconnaissance" or "route reconnaissance," it would have been able to accomplish its purpose fairly effectively, but it did not. Instead, the Cavalry squadron executed its assigned task to the detriment of its purpose.

This is only one example, but the scenario is all too common. Mission command requires leaders to have a shared understanding and to take disciplined initiative while achieving their missions. An increased emphasis on purpose and commander's intent helps leaders implement mission orders and fosters mission command.

Doctrine enables mission command

Army Doctrine Publication (ADP) 6-0, ***Mission Command***, defines the mission-command philosophy as "the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent. … *The exercise of mission command is based on mutual trust, shared understanding and purpose*."[1]

The emphasis has been added, but it highlights two prerequisites for mission command: mutual trust and shared understanding. Leaders must trust their fellow leaders to execute orders based on purpose and shared understanding. To understand purpose and gain the desired shared operational understanding, however, leaders need to develop a shared understanding of doctrine. This doctrinal

Figure 1. A commander's update brief takes place in the field during JRTC Rotation 15-03 in January 2015. *(Photo by CPT Gary M. Klein)*

foundation is the first step toward building trust and enabling mission command.

Leaders must be able to comfortably rely on their subordinates to accomplish their collective mission. This begins with the issuance of orders, continues while subordinates execute in a decentralized environment and includes reporting up and down the chain of command. Leaders use doctrine throughout this process as the descriptive and explanatory language through which they communicate.[2] If leaders do not have a common understanding of this language, they are likely to misunderstand each other or act based on false assumptions. In both cases, there is potential for the erosion of trust. Leaders must emphasize doctrine in their leader-development and self-study programs to enable proficiency in our professional language, trust and mission command.

Challenges in doctrinal concepts and terminology

RTUs wrestle with various challenges at JRTC, but one of the most detrimental is the struggle to conduct effective rehearsals. During decisive-action training rotations, the RTU begins in an intermediate staging base (ISB), where it conducts reception, staging, onward movement and integration (RSOI) before entering the operational area. Units typically conduct various combined-arms and support rehearsals during RSOI, including a rehearsal of its staging and departure from the ISB. Unfortunately, these rehearsals often devolve into a sterile backbrief on a terrain board instead of accurately reflecting the friction that a combined-arms rehearsal would reveal.[3]

Doctrinally, a backbrief is "a briefing by subordinates to the commander to review how subordinates intend to accomplish their mission," while a rehearsal is "a session in which a staff or unit practice expected actions to improve performance during execution."[4] When units backbrief their plans to move out of the ISB instead of rehearsing them, they fail to adequately understand their actions in relation to adjacent units, which results in units struggling to uncoil, failing to meet timelines and, ultimately, desynchronizing operations in the operational environment.

Units often struggle with select sustainment concepts and terminology as well. During their initial movement into the operational area, mounted units typically plan to conduct a refuel-on-the-move (ROM) to support their extended move from the ISB. A ROM helps the unit maintain its tempo and extend the time before it requires another Class III resupply.[5] This intent is favorable to that of the slower service-station method, but most units struggle to plan and execute the tasks required to accomplish a ROM.

Figure 2. A field rehearsal in preparation for offensive operations during JRTC Rotation 14-08 in June 2013. *(Photo by CPT Gary M. Klein)*

Most units are not experienced at conducting a ROM, nor have they researched ROM operations to ensure they sufficiently plan to execute one. ***Concepts and Equipment of Petroleum Operations***, Field Manual (FM) 10-67-1, has an entire chapter that details the planning of a ROM. The doctrinal difference between a ROM and a standard service station is that a ROM delivers a predetermined amount of fuel (usually timed), along a dedicated refueling path where there are many refueling points to minimize the time the refueling march unit is stationary.[6] Depending on the size of the march unit conducting a ROM, this usually requires the supporting unit to have multiple fuelers; holding areas before and after the ROM site; and signal standard operating procedures for controlling movement, etc. Alternately, supporting and supported units could swap fuel cans in a similar fashion, but units rarely plan these levels of detail into their resupply operations.

Another doctrinal challenge highlights the precision of terminology in the Field Artillery Branch. The effects of *disrupt*, *neutralize* or *destroy* have very specific implications for both the observer and the firing battery. If the forward observer does not correctly understand or communicate these effects, the firing battery might fire too many rounds, wasting ammunition. Conversely, the battery may not fire enough rounds to meet the commander's intent, which could result in disaster for a unit fixed by enemy fire.

These examples highlight the implications of our doctrinal knowledge, or lack thereof. Without a firm doctrinal foundation, leaders will struggle to efficiently and effectively rehearse, plan and communicate.

Doctrine enables efficient, effective communications

Army doctrine is the language that its leaders – both noncommissioned and commissioned officers – use to plan and communicate efficiently

and effectively. Consider the following situations, defined by the lack of doctrinal understanding. What if a platoon leader had to re-explain what the tactical mission task *support-by-fire* and purpose *fix* meant during every operations order? Or, what if the first sergeant had to re-explain what an ambulance exchange point, logistics resupply point and unit maintenance collection point were and why they were important for the company's mission? Leaders would have to spend significantly more time giving orders, explaining concepts and developing a shared understanding within their units if we did not have a foundation rooted in doctrine. Without doctrine, leaders would be significantly less efficient.

A common understanding of doctrine is required for concise, effective communication as well. If a commander orders his shaping operation to establish a support-by-fire position to enable the decisive operation's attack, then the shaping operation should not maneuver to seize and/or secure the objective. If it did, it is likely there would be synchronization problems. Soldiers and leaders can avoid these problems by having a thorough understanding of doctrine.

Rescinded, modified and non-doctrinal terms

Once leaders have learned doctrine, though, they must continue to stay abreast of changes because the Army continuously updates its doctrine. One of the most common updates is the addition of new terms or changes to existing terminology. This creates the potential for leaders to use rescinded or modified terms as a product of habit, but as the Army adopts new terms and definitions, leaders must adapt to avoid potential confusion.

For example, the Army and intelligence community recognize the joint term *intelligence, surveillance and reconnaissance* (ISR), but the Army has replaced its common joint usage with the term *information collection* (IC). The Army did this because ISR became overly associated with the technical aspects, whereas IC includes ground reconnaissance and the human element.[7] Some of these changes are relatively minor, but all leaders need to be using the same language to facilitate shared understanding.

Another commonly used rescinded term is *tactical operations center* (TOC), which the Army replaced with *main command post* (CP). This change took place before 2013, when the Combined Arms Doctrine Directorate (Combined Arms Center, Fort Leavenworth, KS) created the doctrine-change historic database, so the reasoning is not recorded, but there are a couple of reasons that seem to make sense.[8] First, this change aligned the use of the term *CP* from *company CP* and higher headquarters all the way up the chain of command. Also, this change alleviated a potential misunderstanding where the acronyms *TOC* and *TAC* (tactical command post) sound very similar, especially over a radio.

Another bad habit is the use of slang in describing our operations. Slang is disadvantageous because it does not have the descriptive and explanatory details that doctrinal terms contain. Three common examples are *flex*, *take out* and *hit*. These terms' ambiguities are not effective at conveying intent, and they present an even bigger challenge to subordinate leaders who are trying to develop shared understanding. For example, when a leader orders his subordinate to "flex forces from Location A to Location B," this order omits many planning details. What are the priority routes? Is the unit expected to be able to avoid enemy contact, thereby enabling movement? Or, is enemy contact likely, in which case it should maneuver?

The other two terms, *take out* and *hit*, are equally ambiguous. When a leader tells his subordinate to execute one of these "tasks," do they know whether to disrupt, neutralize or destroy the enemy? Should they use direct or indirect fire?

These examples highlight a few of the challenges in dealing with non-doctrinal terms.

Where do we learn doctrine?

It is safe to assume that if leaders do not learn or maintain their proficiency in doctrine, they are more inclined to revert to rescinded, modified or non-doctrinal terms. Traditionally, leaders receive most of their exposure to doctrine from instructors during professional military education (PME) or from observers/coaches/trainers (O/C/Ts) at the Army's combat training centers (CTCs). As they progress, leaders will be re-immersed in and learn additional doctrine during subsequent schooling and CTC rotations. However, leaders must seek more opportunities to make the learning process continuous instead of episodic. Leaders should study doctrine and write professional articles within the self-development domain and discuss the art of its application as part of their operational unit's leader-development, self-study or professional-writing programs.

When researching doctrine, a good reference to start with is Army Doctrinal Reference Publication (ADRP) 1-02, ***Terms and Military Symbols***. This manual serves as the Army's dictionary because it compiles the Army's unique and descriptive terms, symbols and language. ADRP 1-02 facilitates more study by referencing each term's proponent manual, where leaders can find additional details and context to expand their understanding of these terms. Collectively, the Army has many ADPs, ADRPs, FMs or Army techniques publications (ATPs), which constitute our doctrine.

Another excellent resource for keeping abreast of doctrine is the quarterly ***Army Doctrine Update*** and supporting ***Doctrinal Term Quarterly Updates***, available from the Combined Arms Doctrine Directorate.[9] These quarterly updates summarize newly published doctrine and highlight changes in doctrinal terminology. While these newsletters are not systematically distributed to the force, leaders can easily share them with their units to foster professional and self-development. These updates are a quick and easy way for leaders to stay attuned to doctrine and doctrinal changes.

Conclusions

Leaders must use doctrine as the language to describe our operations and enable efficient and effective communications. Learning and staying up-to-date with doctrinal changes should not be the exclusive responsibility of PME

Figure 3. Screenshot of the Combined Arms Center's doctrine Website, http://usacac.army.mil/core-functions/doctrine. *(Retrieved April 2015)*

instructors and O/C/Ts, nor be limited to when officers and noncommissioned officers attend PME classes. Leaders in the operational Army must tap into resources such as the quarterly doctrine updates; reinforce priority doctrine as part of leader professional development; and encourage self-development and writing to develop a more proficient and professional force. This renewed emphasis on building a doctrinal foundation will help the Army and its leaders establish a shared understanding, build trust and enable a mission-command climate.

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Notes

[1] Department of the Army, ADP 6-0, ***Mission Command***, Washington, DC: Army Publishing Directorate, May 2012, Page 1-2.

[2] MAJ Ryan T. Kranc, "Cavalry Organization and Task Terminology," ***ARMOR***, March-June 2014, Page 10.

[3] Recommended tactics, techniques and procedures to help leaders conduct rehearsals: 1. Leaders should physically walk and stay on the terrain board. This allows leaders to visualize their adjacent units and synchronize actions in time and space. 2. Leaders should say their anticipated radio transmissions aloud during the rehearsal to practice triggers, expected actions and synchronization as it will unfold on the battlefield. 3. Leaders should designate a Red Team member to introduce enemy actions or contingencies into the rehearsal. These recommendations will help units rehearse their actions in the context of the overall scenario and improve their shared understanding. These recommendations are simply "a way." In the end, rehearsals should provide a venue to practice anticipated actions, enable leaders' shared understanding and challenge them to synchronize their efforts using the commander's intent.

[4] Department of the Army, ADRP 1-02, ***Terms and Military Symbols***, Washington, DC: Army Publishing Directorate, September 2013, Pages 1-5 and 1-49.

[5] Department of the Army, ATP 4-90, ***Brigade Support Battalion***, Washington, DC: Army Publishing Directorate, April 2014, Pages 1-4 and Appendix A.

[6] Department of the Army, FM 10-67-1, ***Concepts and Equipment of Petroleum Operations***, Washington, DC: Army Publishing Directorate, April 1998.

[7] Carlos L. Soto, "Army Doctrine Terms Changes Historical Database v.48," Army Doctrinal Terminology and Symbology MilSuite Site, https://www.milsuite.mil/book/groups/army-marine-corps-terminology, March 9, 2015.

[8] The Combined Arms Doctrine Directorate maintains a copy of the Army doctrine-terms changes historical database at https://www.milsuite.mil/book/groups/army-marine-corps-terminology.

[9] For ***Army Doctrine Updates***, go to https://combinedarmscenter.army.mil/orgs/mccoe/cadd/adpd/docupdate/Forms/AllItems.aspx, or follow the links from the Combined Arms Center's doctrine Website at http://usacac.army.mil/core-functions/doctrine. The doctrinal-term quarterly updates are usually linked in the doctrine updates but can be found on the following MilSuite site: https://www.milsuite.mil/book/groups/army-marine-corps-terminology.

Acronym Quick-Scan

ADP – Army doctrine publication
ADRP – Army doctrinal reference publication
ATP – Army techniques publication
BCT – brigade combat team
CP – command post
CTC – combat training center
FM – field manual
HHT – headquarters and headquarters troop
IC – information collection
ISB – intermediate staging base
ISR – intelligence, surveillance and reconnaissance
JRTC – Joint Readiness Training Center
O/C/T – observer/coach (or controller)/trainer
PME – professional military education
ROM – refuel-on-the-move
RSOI – reception, staging, onward movement and integration
RTU – rotational training unit
TOC – tactical operations center

Troop-Leading Procedures in the Austere Environment

by CPT V. Paul Brancato

The troop-leading procedures (TLPs) constitute the fundamental process in which Army organizations of troop size and smaller plan operations. TLPs follow a simple method troops and platoons can use, whether planning for training operations at their home base or conducting combat operations in theater.

The austere environment in which military units find themselves conducting combat operations presents a unique set of challenges to the planning process. Here, units will find a situation that is fundamentally antagonistic. In addition to the effects of terrain and weather, units must counter the effects of enemy forces on planning and operating. Also, leaders will not have hard structures with electricity available to support their planning. They will have to be able to conduct detailed planning without the use of computers and weatherproof structures.

Three steps of the TLPs that troops and platoons often struggle to perform correctly are the making of a tentative plan, the initiation of movement alongside reconnaissance, and supervision and refinement.

The tentative plan

The third step – making a tentative plan – requires the leader to use the process of course of action (CoA) development. Troops and platoons will typically only generate one CoA, but if time allows, a leader may find it useful to create more than one.

Due to limited time, a leader may desire to delegate elements of his plan to others. Delegation can be a useful tool to distribute work; however, delegation compartmentalizes elements of the plan with separate planners and requires synchronization so each planner can have a shared understanding of the whole plan. The troop command post already has many of the necessary products required for planning.

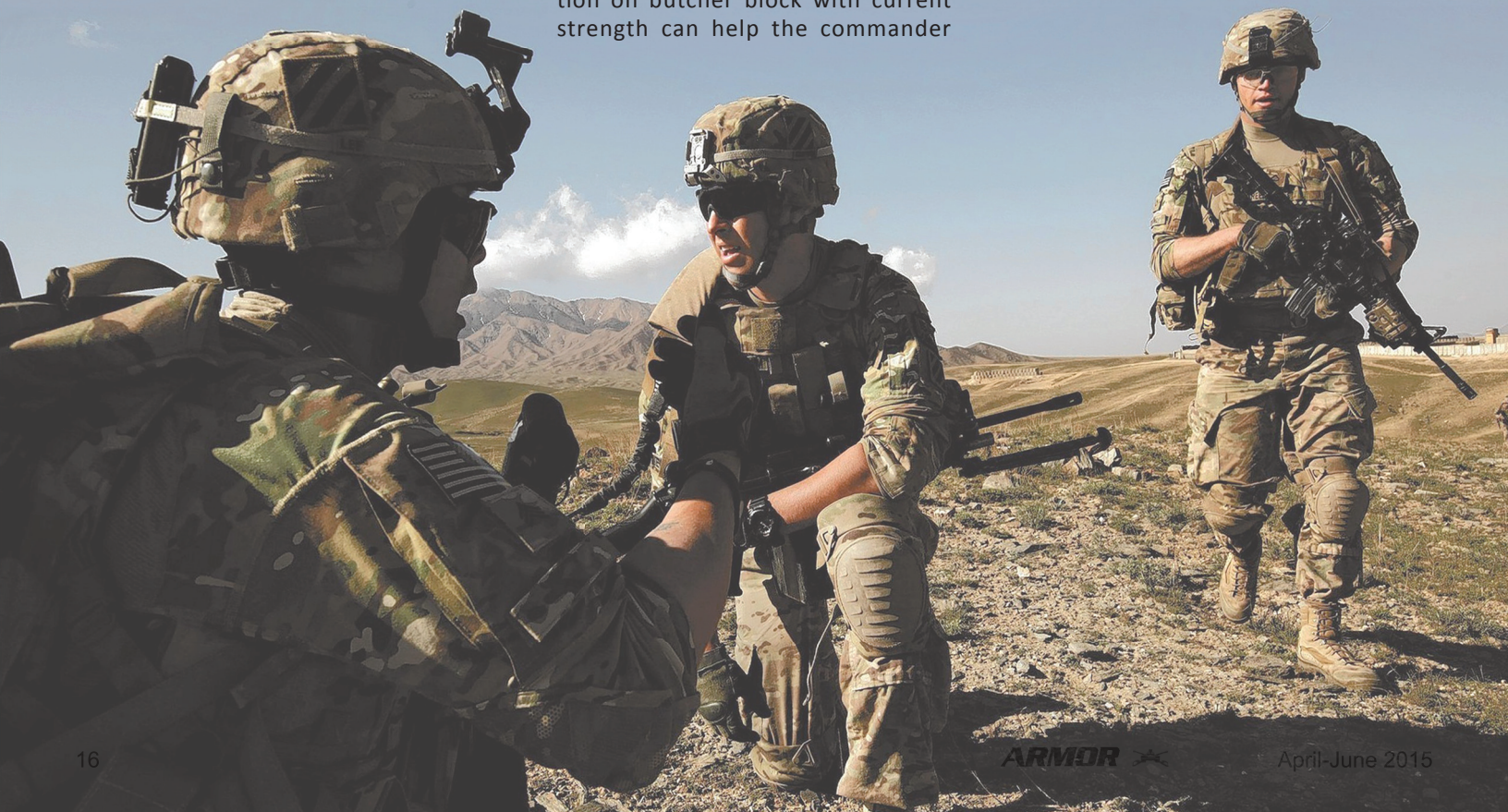
Following the steps of CoA development, the leader must first analyze his available forces and then brainstorm ideas of what he can execute with his available forces. Drawing his organization on butcher block with current strength can help the commander understand the combat power he has available.

The next step involves the assignment of a specific task to a specific subordinate unit. At this point, the leader can complete the concept of the operation and assign headquarters elements to control portions of the operation. At troop and platoon levels, leaders will not likely be able create another headquarters, and the unit leader will most likely act as the only headquarters.

Now the leader can complete his CoA statement and sketch. In the austere environment, he'll most likely draw a statement and sketch on whatever notebook paper he has available. Regardless of his presentation's poor aesthetics, the leader will now be able to competently explain the basic idea of his plan.

Movement and reconnaissance

The fourth TLP step is the initiation of movement, which will often be performed alongside Step 5, reconnaissance. Once CoAs are made, leaders



can begin to acquire supplies and synchronize assets so they can have the maximum combat power available during the mission. Reconnaissance allows leaders to have an idea of any changes or developments in the situation. Giving organizational leaders a clear task, purpose and intent will allow them to operate with little supervision.

The executive officer and first sergeant take charge of starting necessary movement. The executive officer analyzes the CoA's supply requirements and begins requisitioning supplies with the assistance of the supply sergeant, and plans for maintenance with the assistance of the team chief. The first sergeant supervises noncommissioned officers (NCOs) in their preparation of equipment for the mission and plans for any medical and administrative requirements with the assistance of the senior medic and training-room NCO.

During this time, commanders, platoon leaders and section leaders collect as much information about their area of operations as possible. The first, simplest and most readily available method of information collection to a troop or platoon is a map reconnaissance. Troops, however, will have the option to use their Ravens to conduct area reconnaissance and acquire intelligence updates from the troop intelligence-support team. Enemy and weather updates from the intelligence officer will ease preparation of operation, as the enemy and weather timelines will affect the friendly timeline.

The fire-support officer will begin to build the fire support plan at this point. Collaborative planning among all these elements throughout this step is essential so the troop commander can synchronize his entire organization.

Supervising, refining

The eighth step of the TLPs is supervising and refining. A key step in this phase is rehearsing the plan. Units often rehearse contingency plans such as actions on contact, but the rehearsal most important to synchronizing the operation is rehearsing the plan itself. At a minimum, units should rehearse their actions on objective. In an austere environment, the easiest rehearsals to perform are ones where leaders simply talk through the plan while looking at a map. This type of rehearsal does not require resources, is quiet and can quickly identify issues with the plan.

TLP steps

The eight TLP steps:
1. Receive the mission
2. Issue a warning order
3. Make a tentative plan
4. Initiate movement
5. Reconnoiter
6. Complete the plan
7. Issue the operations order
8. Supervise and refine

From Field Manual 3-21.10, Chapter 2. See more at https://rdl.train.army.mil/catalog-ws/view/100.ATSC/423B3CC4-3606-4E1B-86A6-F37C4BC72C3-1274572553978 /3-21.10/chap2.htm.

An often-overlooked aspect of a rehearsal is operational risk incurred by the rehearsal itself. While it is true that a more detailed and involved rehearsal creates a greater shared understanding, commanders must ensure that the risk of revelation to the enemy has been properly mitigated. Enemy reconnaissance is always watching, and a near-peer enemy will have remote piloted aircraft available to perform area reconnaissance on friendly formations. If not properly obfuscated, the rehearsal could forecast the operation to the enemy.

Another important part of the rehearsal is identification of major friction points. A good example is the amount of time needed for a recovery asset to reach a stuck vehicle. Talking through this point in the rehearsal may lead to a specific readiness-condition level for the recovery vehicle at a certain point in the operation.

Other key steps of this phase are the pre-combat checks (PCC) and pre-combat inspections (PCI). PCCs are performed by junior NCOs and are all-inclusive and ongoing. PCIs are performed by the unit leader and are restricted to mission-essential equipment. During the operations order (opord), the leader publishes a list of equipment he deems as essential to completing the mission, and he verifies that the equipment is operational and that its operator is capable of using it.

Throughout this phase, leaders will modify their plan through the use of fragmentary orders (frago) that change a part of the opord based on changes in the situation. These fragos are best delivered through a communication system, as they are typically small and do not require personal delivery.

The making of a tentative plan, the initiation of movement alongside of reconnaissance, and supervision and refinement are three steps of the TLPs that troops and platoons often struggle to perform while operating in an austere environment. Troops and platoons are more than capable of performing all the TLP steps while planning from their offices, but the struggle comes from performing the same level of detail while operating deep in the forest or desert where electricity and weather protection is not readily available. Analog systems such as butcher block, dry-erase boards and maps are some of the products that will support planning. Troops and platoons must have these products available so they can plan their operations at a detailed level.

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Acronym Quick-Scan

AR – armored regiment
CoA – course of action
Frago – fragmentary order
NCO – noncommissioned officer
O/C/T – observer/coach/trainer
Opord – operations order
PCC – pre-combat checks
PCI – pre-combat inspections
TF – task force
TLP – troop-leading procedures

Objective Curly: One Leader's Experience with the Operations Process

by CPT Lazaro Oliva Jr.

The U.S. Army has conducted continuous overseas contingency operations, including combat operations in Afghanistan from 2001-2014 and in Iraq from 2003-2010, for more than 13 years. This ongoing overseas commitment has forced a very high operational tempo (optempo). As a result, we as an organization developed "field expedient" methods that allowed us to maintain an appropriate level of readiness required to deploy and accomplish our mission in a time-constrained environment.

While it was important to make an effort to disseminate lessons-learned to deploying units so they could incorporate them into their training for upcoming deployments, the unintended consequence of this approach was that the operational force became strictly reliant on our tactics, techniques and procedures and consequently ignored doctrine. Therefore, we have forgotten how to employ the most basic doctrinal concepts. As the deployments slow and optempo comes back down to a sustainable pace, we must once again shift our focus back to our doctrinal concepts to re-establish our technical proficiency.

Operations process

One key concept we have forgotten how to use is the operations process, which helps a leader understand, manage and account for the uncertainty inherent in the operational environment. Army Doctrinal Reference Publication (ADRP) 5-0 defines the operations process as the Army's framework for exercising mission command; in laymen's terms, the operations process serves as a common language through which we can plan, prepare and execute our mission. This process applies at all levels of leadership – from the platoon level up to the highest levels of command, with different methodologies prescribed for each echelon.

The prescribed methods to apply the operations process are troop-leading procedures (TLPs), which are employed at the company and below, and the military decision-making process, typically employed by battalion and above. The operations process is driven by the commander, who – with the help of his staff – strives to understand, visualize, describe and direct his organization by providing leadership and continuous assessment.

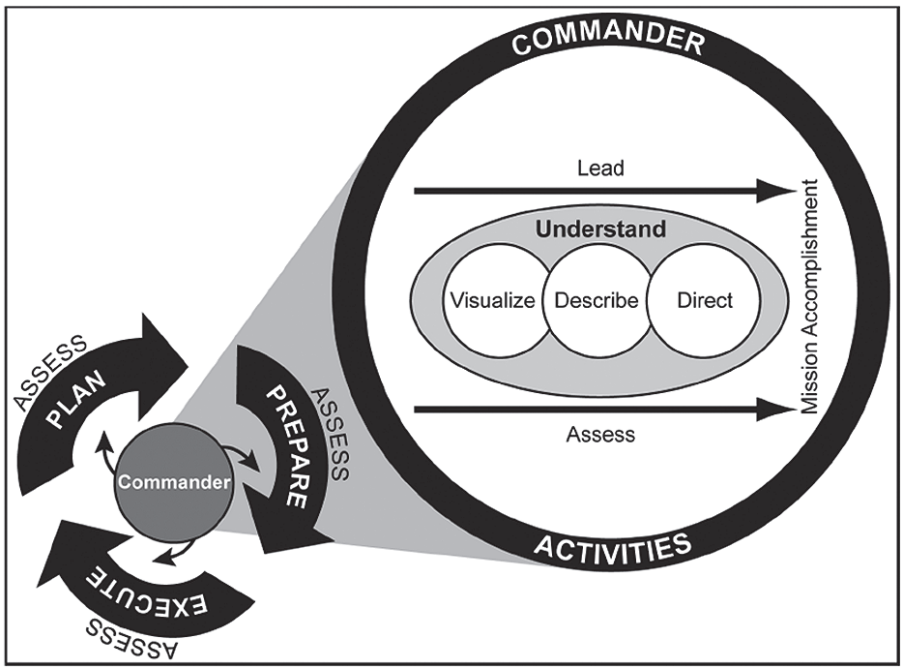

Figure 1. According to ADRP 5-0, the operations process serves as a common language through which we can plan, prepare and execute our mission.

One example of how to properly employ the operations process at the company level using TLPs was demonstrated by a young captain on Objective Curly the morning of April 7, 2003, prior to the biggest fight of his professional military career.

Late on the evening of April 6, 2003, the events unfolding on Objective Peach, a bridgehead over the Euphrates River, were part of a much larger military campaign known as Operation Iraqi Freedom (OIF), which was designed to topple Saddam Hussein's dictatorial government. At the tip of the American spear was 3rd Infantry Division (Mechanized), and its 2nd Brigade was the decisive operation. The following morning, on the heels of a successful raid (the first Thunder Run), brigade commander COL David Perkins devised his plan to conduct an audacious attack into the heart of Baghdad and attempt to seize the city, and this time he intended to stay there; this assault would come to be known as Thunder Run 2.

Leading this raid for 2nd Brigade was Task Force (TF) 4-64 Armored Regiment (AR) and TF 1-64 AR; they would attack to seize Objective Woody and Objective Diane, respectively, which were in the heart of Baghdad. If this assault were to succeed, the largest route leading in and out of Baghdad would have to be secured to ensure that TF 4-64 AR and TF 1-64 AR had access to the resupplies they would need. This was critical if Perkins intended to retain the city of Baghdad and attempt to exploit the opportunity to end the war much more quickly than anticipated.

The critical task of securing Highway 8 fell to TF China (3rd Battalion, 15th Infantry). LTC Stephen Twitty, the TF commander, knew that to accomplish this task, TF China would have to seize three key intersections along Highway

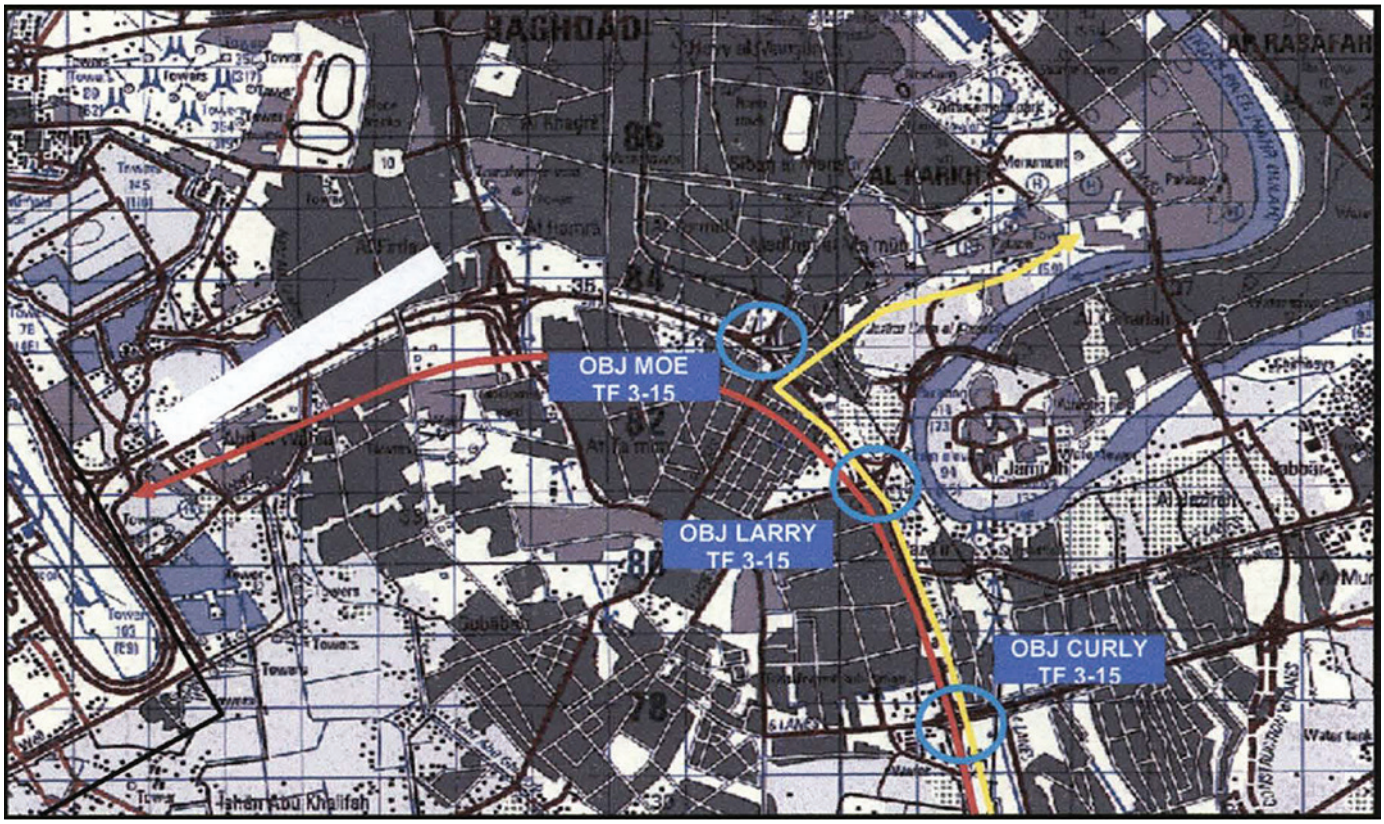

Figure 2. Seizing the objectives of Moe, Larry and Curly would prevent Iraqi soldiers and foreign fighters from gaining control of the largest avenue of approach in and out of the city and would secure lines of communications necessary to maintain freedom of maneuver for friendly forces.

8; these intersections would be named Objectives Moe, Larry and Curly, in order from north to south. Seizing these key intersections would prevent Iraqi soldiers and foreign fighters from gaining control of the largest avenue of approach in and out of the city and would secure the lines of communications necessary to maintain freedom of maneuver for friendly forces. Just before the TF was to execute this mission, brigade headquarters informed TF China's leadership that one of its three line companies would have to remain on Objective Saints to occupy a blocking position to the north of the objective. This effectively reduced TF China's combat power by one-third, leaving it with more objectives than it had companies to defend them.

To mitigate the loss of one company, the TF commander compiled a makeshift team, now referred to as Team Zan, from various elements within the TF. The tall order of defending the southernmost objective, named Objective Curly, fell to an unsuspecting captain serving as an assistant operations officer in the TF; his name was CPT Harry "Zan" Hornbuckle III. Twitty informed Hornbuckle of his new mission one minute after midnight April 7, 2003, just six hours before the start of the mission.

Team Zan comprised one mechanized-infantry platoon, another Infantry Fighting Vehicle (Bradley), the battalion's mortar platoon, a scout section, an engineer squad, one armored combat earthmover (ACE), the battalion's main aid station (MAS) and the TF's tactical-operations center (TOC) Alpha (two M577s and one M114). Hornbuckle, now the commander of "Team Zan," along with his senior noncommissioned officer (NCO), SFC Vincent Phillips, began to devise a plan to seize Objective Curly and prevent it from falling into the enemy's hands.

The plan

With the difficult task of securing Objective Curly and defeating whatever the enemy would throw at him and his team, Hornbuckle began to develop his plan by using the TLPs he had been taught how to employ time and again throughout his military career. He had just received his mission, and the first step in the commander's activities was to understand the problem; he focused on the enemy and the time he had available. The next step was to issue a quick warning order (warno) that would facilitate parallel planning.

"I met with LT Matt McKenna, LT Rob Woodruff and CPT Trey Lawrence first to disseminate a quick [warno]," Hornbuckle recalled. "I focused on our timeline and what I knew of the enemy situation, while getting an updated status on where they stood in regard to men, weapons and equipment."[1]

The next step in the TLPs is to make a tentative plan; here, the commander analyzes the mission variables to visualize how he believes the enemy would fight; he also determines his decisive point, commander's intent and initial risk assessment. "The two defining challenges to effective planning are uncertainty and time," according to ADRP 5-0. Both of these added to Hornbuckle's sense of urgency. He spent the next few hours developing his plan for Objective Curly; he also met periodically with the subordinate leaders of his newly

formed team to continue describing his vision and provide updates to the plan. "The smartest two moves I made that night were to develop a quick and easy plan and to designate the chain of command," Hornbuckle wrote.[2]

He then went on to do his terrain analysis on a satellite map; he knew that the decisive terrain was the high ground on the two-lane overpass running west to east over Highway 8. It would provide Team Zan with superior observations and fields of fire in all directions. By occupying this overpass, he could also deny the enemy use of the high ground and freedom of maneuver.

Once Hornbuckle understood his terrain, which then allowed him to visualize the enemy situation, the next step in his planning process was to develop a course of action (CoA) that would defeat the enemy and retain Objective Curly. He did his analysis of relative combat power, generated options and began arraying his forces, developing a broad concept and assigning responsibility; "my plan was to put the mech platoon Bradleys in the east and west on top of the overpass,"[3] he said, and secure the high ground. He would then place his scout section oriented north, along with the engineer squad and his Bradley. To the south, he put the mortar platoon, along with his ACE, so they could cover the southern avenue of approach and provide fire support to all three of the battalion's objectives, not just Objective Curly. Finally, he would "tuck the TOC and MAS under the overpass."[4]

The next step was to prepare a CoA statement and sketch. "The basic concept was to occupy battle positions (BPs) and orient our fires by sectors," Hornbuckle wrote.[5] He divided his sectors of fire by using a terrain-based quadrant that would help him to avoid target overkill while still effectively massing his fires on the enemy.

"My decisive point for the operation was to set BPs 1a and 1b, with the Bradley-Fighting-Vehicle split sections oriented to Quadrants 1 and 2. … The intent I issued to the team was [to] quickly seize the objective and set in hasty defense; control the high ground to prevent the enemy from shooting down on us; keep all communications short and concise (give distance, direction, description); and ensure interlocking fires with element on left and right (cross-talk). Endstate: Objective Curly is secured, U.S. forces can pass north through the objective, enemy forces destroyed."[6]

With his operations order complete,

Figure 3. CPT Harry "Zan" Hornbuckle, assistant operations officer, TF 3-15 Infantry, directs the battle. *(Photo by Dennis Steele, **ARMY** Magazine. From Steele's photo essay "Baghdad: The Crossroads" in **ARMY** Magazine's June 2003 edition. Copyright 2015 by the Association of the U.S. Army and republished by permission of **ARMY** Magazine.)*

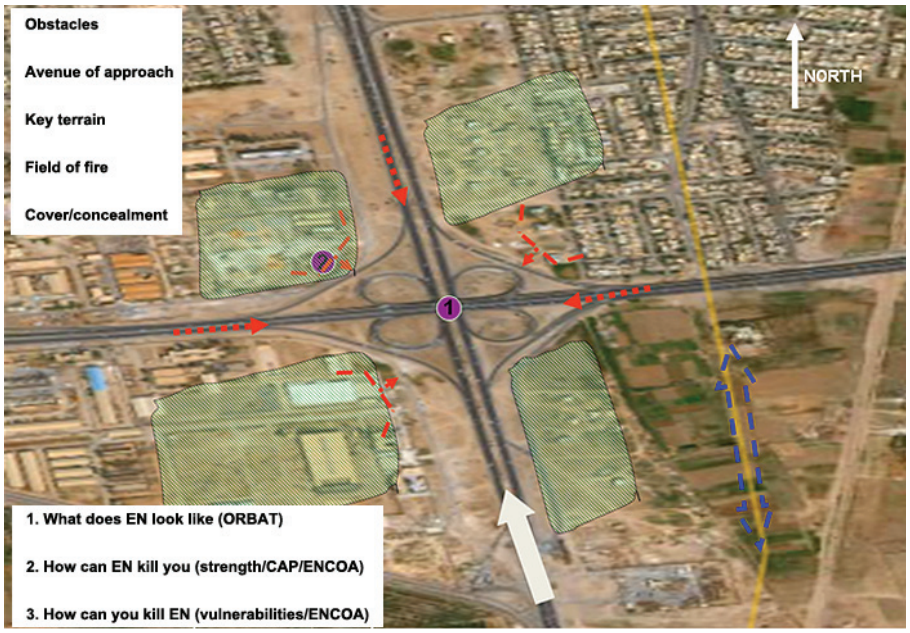

Figure 4. Hornbuckle's next step was to prepare a CoA statement and sketch. He divided his sectors of fire by using a terrain-based quadrant that would help him to avoid target overkill while still effectively massing his fires on the enemy.

Hornbuckle gathered all the leaders from his subordinate elements and issued his plan. After Hornbuckle issued the plan, it was late; the movement was to begin at 4:30 a.m. with a line-of-departure time of 6 a.m. By this point, "I had planned, briefed and spot-checked the best I knew how. ... I played all the parts in my head, trying to visualize all the possible scenarios. … Little did I know, even my worst-case scenarios would pale in comparison to the action we would face at Curly."[7]

Preparations

As stated in ADRP 5-0, "The activities of the operations process are not discreet; they overlap and recur as circumstances demand. … Preparing begins during planning and continues through execution." Hornbuckle's warno was all Phillips, his team first sergeant, needed to initiate movement. "He began the task of linking up units and conducting resupply in the dark,"[8] Hornbuckle recalled. These preparations also occurred at the platoon and crew level, with each senior NCO getting his unit ready for the mission that was now only a few hours away from execution.

This began with assigning priorities of work to each crew and squad. The highest priority is, without a doubt, security. Team Zan would have to maintain between 33 percent and 50 percent security at all times. The second-highest priority is cleaning and inspecting weapons; this includes everything from the individual Soldier's M-16 to the 25mm Bushmaster chain gun on the Bradleys. Included in this was Class (CL) V ammunition to ensure that every weapon had a full unit basic load.

Next was ensuring that all maintenance on the vehicles was completed to ensure they were fully mission capable and ready for the next day's operation – including any CL III petroleum, oils and lubricants. This was followed by the individual Soldier's equipment, including night-vision goggles, PAQ4s and optics; Phillips needed to ensure that everyone had a fresh pair of batteries and that they, too, were fully mission capable. Last, but not least, came the Soldier's chow, hygiene and rest.

While these priorities of work were being supervised, the leaders of each element were developing their own plans and conducting their own TLPs to ensure their plans were nested with their immediate higher headquarters. "Effective preparations ensure that the right forces are in the right place at the right time with the right equipment and other resources ready to execute the operation," according to Paragraph 3-7, ADRP 5-0. However, no amount of preparation could have fully prepared these men for what they were about to experience.

Figure 5. As the rest of the battalion seized its objectives, Team Zan occupied Objective Curly. The mechanized-infantry platoon wasted no time establishing a BP over Highway 8, oriented on Quadrants 1 and 2 to the north. *(Photo by Dennis Steele,* ***ARMY*** *Magazine. Copyright 2015 by the Association of the U.S. Army and republished by permission of* ***ARMY*** *Magazine.)*

Execution

The attack began promptly at 6 a.m. April 7, 2003, in accordance with the plan. Team Zan was as ready as it could be; it was now time to execute. Execution is defined as "putting a plan into action by applying combat power to accomplish the mission … to gain and maintain a position of relative advantage" (ADRP 5-0). TF China was third in the order of march for the brigade behind TF 1-64 and TF 4-64. The plan was that TF China would follow and support by securing lines of communications along Highway 8. The order of movement within TF China was Alpha Mech, Bravo Tank and Team Zan.

It wasn't long before Hornbuckle began hearing contact reports over the radio; the lead tank battalion was reporting "heavy rocket-propelled grenade (RPG) fire at MB415777. As I [CPT Hornbuckle] plotted it on my map, I realized that was Objective Curly." He did his best to assure himself and his men this was expected and they would accomplish their mission.[9]

As the rest of the battalion seized its objectives, Team Zan occupied Objective Curly, and the mechanized-infantry platoon wasted no time establishing BP over Highway 8, oriented on their Quadrants 1 and 2 to the north. Simultaneously, the mortar platoon established BP and oriented south along Highway 8. "All the leaders and Soldiers rapidly occupied their points of domination and established what would become a perimeter defense. The thing I remember was how glad I was that they all knew the plan," Hornbuckle recalled.[10]

The objective was surrounded by multi-story buildings on three sides and a single-story home on the southeast. The terrain under the overpass consisted of rubble and bunkers. The enemy used the very elaborate trench system under the overpass to conceal his movements.

"It seems to me now that the enemy was waiting for us to stop before they began their serious counterattack," Hornbuckle said. "The enemy

consisted of 150 to 200 dismounts with small arms and RPGs ... believed to consist of Iraqi Special Republican Guard and Syrian jihad fighters."[11]

Just north of the objective along Highway 8 lay a grim reminder to Hornbuckle of the reality of war: "a burning enemy MTLB to my front and destroyed M1 tank to my northwest."[12] It was now that all hell broke loose on the objective. Hornbuckle was directing the fight over the radio from his Bradley, trying to maintain situational understanding and constantly repositioning his forces to respond to wave after wave of enemy soldiers who would assault the objective from the urban areas with reckless abandon. On more than one occasion, Hornbuckle found himself engaging dismounted enemy RPG teams with his personal rifle before his Bradley gunner would identify and destroy them.

Figure 6. Hornbuckle, kneeling on the right, and other Soldiers rush to stop an enemy attack. *(Photo by Dennis Steele,* ***ARMY*** *Magazine. From Steele's photo essay "Baghdad: The Crossroads" in* ***ARMY*** *Magazine's June 2003 edition. Copyright 2015 by the Association of the U.S. Army and republished by permission of* ***ARMY*** *Magazine.)*

Figure 7. Hornbuckle and his gunner engage vehicles trying to penetrate the perimeter under the overpass while their Bradley experienced problems with its 25mm cannon. *(Photo by Dennis Steele,* ***ARMY*** *Magazine. Copyright 2015 by the Association of the U.S. Army and republished by permission of* ***ARMY*** *Magazine.)*

During execution, the success of any plan hinges on timely decision-making and disciplined initiative by agile and adaptive leaders who can recognize opportunities. These variances present themselves in one of two ways: the first is an opportunity to accomplish the mission effectively, and the second is a threat to mission accomplishment or survival of the force. Without mutual trust and leader development, subordinates will not exercise the initiative required to gain a position of relative advantage.

One example of this was when Phillips recognized a threat to the survival of the force in the form of enemy soldiers using the trench system underneath the overpass to be able to move unobserved. He immediately approached Hornbuckle to request permission to take a three-man fire team to clear the trenches. Hornbuckle replied, "Roger, you really need to go do that."[13] He watched as Phillips quickly assembled an ad hoc squad and began to clear the trenches. "By the time he had the squad set in place, they had destroyed 15-18 of the enemy," Hornbuckle wrote.[14]

Back in his Bradley, Hornbuckle and his gunner were engaging vehicles trying to penetrate the perimeter. At some point in the fight, the Bradley began to experience problems with its 25mm cannon. The crew then began to work diligently to try to repair it. Little did the Soldiers know that the motor had broken, and it would be down until the next day when they could get a replacement from the unit-maintenance collection point. At this point, with the fight raging all around him, Hornbuckle realized that "if [the enemy] managed to coordinate and attack all at once … they might be able to overwhelm his undermanned combat team just by force of sheer numbers."[15]

Another critical factor of the operations process is the commander's ability to understand, visualize, describe and direct. To do this, the commander must have the energy to be at the point of friction and lead his team to mission accomplishment; this requires a leader to be in excellent physical condition. Hornbuckle, at one point, dismounted the Bradley and

Figure 8. Hornbuckle dismounts his Bradley and begins running between friendly fighting positions under enemy fire to increase his situational understanding and bolster his men's confidence through his presence and leadership. *(Photo by Dennis Steele, **ARMY** Magazine. Copyright 2015 by the Association of the U.S. Army and republished by permission of **ARMY** Magazine.)*

began running between friendly fighting positions under enemy fire to increase his situational understanding and bolster his men's confidence through his presence and leadership.

"At one point, as he hustled between positions, an enemy gunman rose up from a trench and aimed his rifle at Hornbuckle. The captain raised his own rifle and fired. The man went down," wrote David Zucchino in his book, ***Thunder Run***.[16]

Figure 9. Hornbuckle and SFC Vincent Phillips discuss adjusting their perimeter during a lull in the fighting. *(Photo by Dennis Steele, **ARMY** Magazine. Copyright 2015 by the Association of the U.S. Army and republished by permission of **ARMY** Magazine.)*

Shortly after a conversation between Twitty and Hornbuckle about the location and status of each fighting position of Hornbuckle's team, Twitty ordered Bravo Mech to reinforce Hornbuckle. Once they arrived, Bravo Mech conducted a hasty transfer of authority. By this time, Team Zan had been engaged in a close and intense fight for eight hours, and the fighting would continue for a while before eventually dying down prior to 2-7 Infantry's arrival.

Mission accomplishment

When the fight was over and the dust settled on Objective Curly, Team Zan had accomplished its mission. The conditions for this victory were set long before Team Zan, along with the rest of TF China, began its movement north. It started when Hornbuckle started the first critical step in the operations process: the plan. He did this by using the TLPs and then disseminating information to his team to facilitate parallel planning. Concurrently, his team was taking all the necessary steps to prepare for the operation. His simple plan allowed his team to exercise disciplined initiative and seize opportunities that presented themselves throughout the day.

Hornbuckle also played an active part in the execution through his ability to identify and be at the point of friction. Hornbuckle's understanding of doctrine and employment of the operations process allowed him to visualize, describe and direct through his leadership and continuous assessment. His use of the operations process is just one example that illustrates how our doctrine can serve as a combat multiplier.

Way ahead

As Paragraph 1-1, ADRP 5-0 states, "Military operations are human endeavors, contests of wills characterized by continuous and mutual adaptation among all participants. … Uncertainty pervades operations in the form of unknowns about the enemy, the people and the surroundings." To ensure our victory while minimizing our casualties, we understand our enemy, exploit his weaknesses and protect against his strengths. We must make the enemy fight us on our terms.

Also, we must be well-versed in our doctrine. It serves as both a foundation and a common language, "through understanding you can apply judgment in its use. … This lends itself to understanding how to think."[17]

Finally, as leaders, we must prepare ourselves for command; we must understand what our nation expects of us. We are entrusted with our nation's sons and daughters, and as a result, we

have a moral obligation to do everything in our power to prepare, so when that moment presents itself, we will be ready to lead.

Lessons-learned

Courtesy of now-LTC Hornbuckle:

- Be a student of your profession; know your doctrine and tactics. If you understand the process, you can put it all together in combat.
- Continue to assess the situation. Understand what your strengths and weaknesses are. Be willing to accept risk to exploit an enemy vulnerability.
- To lead effectively, you must stay calm on the radio, and you must have the endurance to be at the point of decision.
- See yourself, see the terrain, see the enemy and make bold decisions while considering risk.
- Don't train your subordinates on what to think; teach them how to think.

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Notes

[1] From the student paper "Objective Curly Task Force 3-15" by MAJ Harry "Zan" Hornbuckle, Army Writing Program, Dec. 12, 2006. To access Hornbuckle's paper, from http://www.benning.army.mil/library/, click on "Digital Collections" on the left, then in the center, under "MCoE Army Writing Program Student Papers," click on "Operation Iraqi Freedom (OIF)-(CAC access required)." OIF student papers are alphabetized by the author's last name.

[2] Ibid.

[3] Ibid.

[4] Ibid.

[5] Ibid.

[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] Ibid.

[10] Ibid.

[11] Ibid.

[12] Ibid.

[13] David Zucchino, ***Thunder Run***, New York: Grove Press, 2004.

[14] Hornbuckle, "Objective Curly Task Force 3-15" student paper.

[15] Zucchino.

[16] Ibid.

[17] Hornbuckle, "Objective Curly Task Force 3-15" student paper; confirmed in an interview with the author March 13, 2015.

Acronym Quick-Scan

ABCT – armored brigade combat team
ACE – armored combat earthmover
ADRP – Army doctrinal reference publication
AR – armored regiment
BP – battle position
CAP – capabilities
CL – class
CoA – course of action
EN – enemy
ENCOA – evaluating enemy course of action
MAS – main aid station
MCCC – Maneuver Captain's Career Course
MCoE – Maneuver Center of Excellence
NCO – noncommissioned officer
OBJ – objective
OIF – Operation Iraqi Freedom
Optempo – operational tempo
ORBAT – order of battle
RPG – rocket-propelled grenade
TF – task force
TLP – troop-leading procedure
TOC – tactical-operations center
Warno – warning order

Building the Alliance: Multinational Integration in the Decisive-Action Training Environment

by LTC Esli T. Pitts

Given the reduction in force structure across our North Atlantic Treaty Organization (NATO) allies and other partnered nations – combined with the increasing likelihood of multinational operations at lower and lower echelons – it is highly likely that leaders at brigade and below will participate in training or contingency operations in a multinational task force (TF). Multinational task organization at this echelon has become the norm at the Joint Maneuver Readiness Center (JMRC) in Hohenfels, Germany. This article looks at the difficulties associated with such operations and provides some solutions.

The sun was going down on TF Hammer, a combined-arms battalion (CAB) task-organized with a mechanized-infantry company, 3rd Company Panthers, from a NATO ally. The TF had fought all day, but now conditions had changed significantly. In the latest wrinkle, although it had 7,500 gallons of Jet Propellant (JP) 8 on hand, the distribution platoon was unable to refuel Panther's tracks, which used Diesel Fuel 2 (DF2).

It was the most recent, but certainly not the last, in a long series of instances of "discovery learning."

As the shadows lengthened into full darkness, it only grew worse for TF Hammer when they discovered that Panthers' personnel carriers did not have night-vision capabilities … and neither did the infantrymen. Hammer 6 shrugged his shoulders. Reasoning that the streetlights on Objective Ford – combined with effective suppression from Archer Company's Bradleys in the support-by-fire (SBF) – would mitigate the risk, he launched the attack.

There were no issues at first. The 3rd Company reached the dismount point and quickly maneuvered toward the objective. It was just as the enemy cut power to the streetlights that their lead infantry squad discovered the wire obstacle surrounding the objective. Deadly accurate small-arms fire began to strike them, and it quickly became apparent that 3rd Company was the only force that could not see in the dark. The company commander lost two rifle squads before he got through the obstacle and began his final assault on the objective. Sadly, 3rd Company had no organic medics, and most of the casualties bled out at the point of injury. They lost another squad as the boyevaya mashina pekhoty (BMP) behind the objective opened fire. The BMP was too far away for Panthers' rocket-propelled grenades (RPGs) to hit, and critical time was lost as they relayed the BMP's location to Archer 6 in the SBF.

As Panthers' infantry dismounts closed on Objective Ford, it became more and more difficult to differentiate friend and foe: nobody was marked with the battalion standard. Archer 6 ordered Red Platoon to move from the SBF around to the flank to engage enemy forces that might withdraw to the north. Mindful of the potential for fratricide, he called Panther 65, the U.S. liaison officer embedded with 3rd Company, and got an acknowledgement that Red Platoon was moving. However, the word never made it down to Panthers' line platoons. As their lead platoon exited the same building as the enemy force, they were confronted with "enemy" armor to their flank. They did what any good infantrymen would do and engaged the close threat with a volley of RPG fire, rendering Red 2 a mobility kill. Red 4 quickly realized what had happened, but his call to cease fire came too late. Red 3 killed 3rd Company's anti-armor team in a hail of coax and 25mm high explosive.

Hammer 6 was now in a dilemma. He ordered Archer 6 to a weapons-control status of "tight" and backed them off. He thought about putting Archer's dismounts into the fight, but Archer 5 reported that he did not have Panthers' operational graphics. Actions on the objective turned into a slugfest as 3rd Company fought through the three short rows of buildings on their own. In the end, the company commander seized the objective but, having lost two-thirds of his combat power, and with the battalion's emergency resupply of fuel and ammunition built for American tanks and Bradleys, he was unable to stave off the counterattack.

The 3rd Company's commander had seemed like a gift when he arrived. He was well versed in the local culture. His Soldiers were experienced and motivated – a definite asset. But the attachment had occurred at the last minute and now Hammer 6 was reaping the rewards of hasty and ineffective integration. What the attached company apparently learned was that Americans don't care, don't provide enough information to attached multinational units and will misuse them. The Americans learned that they have to do the hard jobs themselves and that our allies can't be trusted to accomplish the mission. In both cases, nothing could be further from the truth.

This battle never happened, but various elements of it happen routinely at JMRC. In the last 18 months, JMRC has truly reinvented itself from the combat training center (CTC) that only supported 173rd Airborne Brigade, 2nd Stryker Cavalry Regiment and a periodic Kosovo force mission-rehearsal exercise into a high-tempo training center that supports the United States' NATO allies and partners in training rotations. It is not unusual to see as many as 4,500 Soldiers from 13 nations conducting a variety of named U.S. Army Europe exercises with strategic impact.

At JMRC, the lessons begin during the pre-rotational Joint Combined Academics Program (JCAP), during which

a brigade combat team (BCT) begins to form as a multinational team. Other than planning conferences, it is unlikely that these units did more than exchange a few emails before the rotation. Certainly, they have done little regarding what is required to mesh differing systems of mission command, movement and maneuver, intelligence, fires and sustainment together.

There are challenges here that no other CTC or operational environment can replicate. There is not an operational TF anywhere as uniquely organized as those rolling into the training area at JMRC, where we routinely see brigades or battalions with units from two to four nations task-organized under them. Not only is the rotational training unit task-organized in this way, but the opposing force and special-operations forces participating in the rotation also operate with attached multinational elements. In a first-time instance, the Lithuanian Iron Wolf Brigade participated in a recent rotation, providing mission command to several U.S. and NATO battalions, each of which was also task-organized with multinational attachments at company and platoon level. Consider that most units are still struggling to generate decisive-action training environment proficiency and there are many lessons to be learned. JCAP focuses on the big ones: capacity-building, integration and interoperability.

Aside from obvious problems such as differing radios and communications security (COMSEC), how do we simply build a multinational TF? It all begins with integrating the unit. Taking team photos and hosting a social gets the leaders together, and JCAP provides an academic framework; however, integration begins when units' leaders and staff get down to the details. It comes after gaining a complete understanding of the following questions: what are the attached unit's capabilities? What are the attached unit's limitations? And from these answers come the subsequent questions: given these capabilities and limitations, how will/can we best use the attached unit? And what must we do to best ensure the success of the attached unit? To ignore these questions, or the answers, invites surprises at best – or mission failure, fratricide and acrimony at worst.

Figure 1. Danish soldiers exchange information while conducting zone reconnaissance during Exercise Combined Resolve III at JMRC Nov. 5, 2014. Combined Resolve III is a multinational exercise that includes more than 4,000 participants from NATO and partner nations. The exercise is designed to provide a complex training scenario that focuses on multinational unified land operations and reinforces the U.S. commitment to NATO and Europe. *(U.S. Army photo by PFC Lloyd Villanueva)*

Figure 2. A Royal Danish Army soldier, left, of 3rd Reconnaissance Battalion, Guard Hussar Regiment, and a U.S. Soldier, right, of 91st Brigade Engineer Battalion, 1st Brigade Combat Team, 1st Cavalry Division, provide medical assistance to a simulated casualty, a Romanian soldier of 21st Mounted Battalion, during Exercise Combined Resolve III at JMRC Nov. 3, 2014. *(U.S. Army photo by SGT Ian Schell)*

We hand out a four-page integration checklist during JCAP. It is not the catchall but only a start point for a focused conversation between higher headquarters and subordinates by staff and warfighting function.

Anybody with a few spare minutes could identify a long list of questions to ask on interoperability. My intent here is not to generate a list but to highlight some of the questions and some associated perils as we integrate an attachment.

Movement and maneuver:

- Are there national caveats on employment of this unit? (Aside from the obvious ones such as restrictions on combat operations.) We were recently surprised by the national labor laws of a well-trained and well-equipped modern European army that mandated that drivers receive six hours of uninterrupted sleep a night. We only understood the full impact of this when that battalion crossed the line of departure 90 minutes later than the others during a brigade attack. Surprise!
- What are the operational capabilities of this unit? Are they mounted, dismounted, motorized? Capable of air assault/air insertion? What do they possess in terms of anti-armor, breach, organic fire support and night-vision capabilities? A recent rotational armored BCT was surprised to find that one of the attached multinational units brought Stinger man-portable air defense, thus providing the only capability for short-range air defense in the rotation.
- Conversely, what are the operational limitations of this unit? What missions can't they do, and what essential equipment are they lacking?
- What is the level of training proficiency within this organization?

Fires:

- Does this unit possess organic mortars?
- Can they provide observers for themselves?
- What are the capabilities of our attached multinational fire-support assets?
- What are the release authorities for various types of ordnance?
- Are the fire-support coordination measures and clearance of fire procedures compatible?

Intelligence:

- What organic intelligence assets does this unit possess? Tactical unmanned-aircraft system and/or company intelligence-support team equivalent? One-System Remote Video Terminal equivalent?
- What does "tactical questioning" vs. "interrogation" mean to a multinational partner?
- How does this unit traditionally receive and assess intelligence? Some nations are accustomed to receiving all their intelligence from higher, with the result that they do little analysis or refinement of that product. Nor do they provide much in the way of analysis of intelligence pushed from lower to higher.
- What is the ability of this company to participate as a tasked element in the battalion's information-collection plan?
- Are we ready to accept their reporting?

Sustainment:

- Are Class (CL) I, III and V truly interoperable in type, quantity and material-handling equipment requirements? Many nations use DF2 or other grades of fuel, while the U.S. fleet burns purely JP8. Surprisingly, U.S. standard fuel nozzles don't fit some of our partners' vehicles.
- What munitions will our multinational force require in emergency resupply, and how do we get them?
- Are there restrictions on rations? Does the attached unit require augmentation in the field-feeding section?

Figure 3. A Romanian soldier takes aim on a UH-72A Lakota helicopter simulating hostile forces during Exercise Combined Resolve III at JMRC Oct. 30, 2014. *(U.S. Army photo by SPC John Cress Jr.)*

- What is the capability of the attached unit to support itself from the standpoint of maintenance (i.e., recovery, mechanics, parts, etc.)?
- What is the company's capability with respect to medics, Combat Lifesaver Course equivalents and CL VIII? Discovering that the attached company typically does not provide medics at the platoon or company level leads to awkward decisions about who to evacuate first.
- What is our ability to offset gaps in their maintenance and medical capability?
- How will the battalion report and track multinational casualties, and request replacements?
- What is the typical involvement of the company's first sergeant and executive officer in sustainment?

Protection:

- What are their capabilities in terms of chemical-defense equipment and training readiness?
- What are the dimensions of attached vehicles? A two-tier fighting position looks a little bit different for a Danish CV90, a BMP and a Bradley, or an M1A2 and a T-72.
- What are their capabilities and doctrine in terms of obstacle emplacement? What are their national caveats on the use of mines? Do they have picket pounders?
- Does this multinational partner have a risk-management process? Many countries' outlook on risk is significantly different than the U.S. view. For example, a recent rotational partner at JMRC experienced a death and several injuries during a rollover in a U.S.-issued uparmored humvee. The use of seatbelts in this country was not the norm. In this instance, JMRC policy was violated and none of the five occupants were using their seatbelt or gunner's restraint system.
- Do they have appropriate field gear? Some deploy without sufficient cold- or wet-weather clothing or sleeping systems.

Mission command:

- What are the command and support relationships of our respective organizations? NATO doctrine adds tank-automotive and armaments command and operational command to the normal U.S. standards. Can they be further task-organized?
- What communication systems do they use, and are they capable of secure communications? The emerging standard at JMRC is use of the NATO COMSEC key.
- How does our multinational element usually receive and issue operations orders? Some countries are much more comfortable with a traditional paper Word document in five paragraphs than they are in PowerPoint concept-of-operation orders.
- What tools do we use at our multiple echelons to maintain the common operating picture (COP)? Equivalents to the Blue Force Tracker (BFT) and Command Post of the Future are rarely common or interoperable. If we vary between digital and analog systems, who is responsible for standardizing them?
- What is our common language on the command net? Picture a recent example of a Romanian infantry battalion using English as the common language with subordinate Romanian and non-Romanian attached companies.
- Are we using U.S., NATO or partnered national doctrine, and what are the foreign-disclosure requirements of each?
- Have we over-classified our documents? Have our allies over-classified theirs?
- What are the traditional roles and capabilities of our allies' noncommissioned officers (NCOs) and junior officers? Some of our allies still follow the Soviet tradition of doing only what the commander says – no more and no less.

Fratricide reduction:

- What uniforms, equipment and paint schemes do the attached forces and adjacent units use?
- Do we have standard vehicle markings that enable low-light or thermal recognition?
- Do we have a common understanding of operational terms and graphics?
- Have we kept the plan as simple as possible?
- Where will we actually meet on the

Figure 4. A U.S. Soldier, left, of 2nd Battalion, 12th Cavalry Regiment, 1st Brigade Combat Team, 1st Cavalry Division; an Armenian soldier, center; and a Danish soldier update map information during Exercise Combined Resolve III at JMRC Nov. 7, 2014. *(U.S. Army photo by SPC John Cress Jr.)*

ground with adjacent units? Events such as forward/rearward passage of lines (FPoL/RPoL) are filled with potential for fratricide.

Cultural:

- Are there historically contentious relations between multinational allies? Placing these nations in the same TF is not a good idea.
- Are there cultural considerations to be aware of, including religion or the use of alcohol, which should be known?

The previous considerations are just a sampling of the depth of questioning you need to do to truly understand your attached units. Without it, you are potentially in for some strange surprises.

Now that we have learned a lot about our attached multinational elements, what do we do with this information? There are some broad truisms about working with our multinational allies:

- First, assign an appropriate and achievable task and purpose. A CAB during a recent rotation with two attached companies from two nations used them as light infantry to great effect, clearing defiles before committing heavy forces. However, one of these same companies was a poor choice to throw into an urban environment at night; they lacked a plan, night-vision goggles, crew-served weapons or experience in that environment.
- That unit's leader is the acknowledged expert on that unit. Ask him for his recommendations on employment. A recent heavy battalion did not use the attached allied light-infantry platoon throughout the duration because they were not sure what to do with them.
- In a digital Army, ensure you have analog products as necessary to provide the attached units, and ensure you are prepared to accept their analog products. Experience shows their primary concern will be that they feel like they are not being provided with enough information.
- If the attached unit does not have a capability you want them to have, you will have to provide it – either out of hide or as an additional attachment.
- Integration will not begin until both sides sit down at the table and begin the discussion.

Movement and maneuver:

- Again, assigning appropriate and achievable tasks is paramount. No unit should ever be assigned as the main effort in a battalion/TF attack out of a sense of team-building or multinational goodwill, but only based on appropriate analysis that they can accomplish the mission. Make no mistake, there are some well-trained multinational units coming into JMRC, but not all nations' armies are trained or equipped to the same standards.
- Focus on developing capabilities within the attached unit. A recent rotational commander directed his attached companies to improve lethality with their 18 RPG launchers through training to increase accuracy and techniques of volley fire. This manifested itself on the battlefield with some timely BMP kills during a mission.
- Task-organization – a squad of sappers is an obvious choice to gain some breach capability within the attached companies. Not as obvious are attaching a Javelin team, fire-support officer (FSO) or medics as other options to generate capabilities.
- Consider options such as developing air-assault capability, lift with organic trucks or employing early line of departure (LD) of dismounted forces.
- Understand the impacts on tempo (i.e., incorporating light forces into a heavy unit) as well as increased requirements for tactical patience because of both this and language barriers.

Fires:

- Be prepared to attach an FSO to your attached company, even at the expense of losing an FSO with an organic company.
- Ensure your LNO to your attached company is capable of planning and executing fires.
- Limit some multinational forces' tendency to use polar plot as a method of calling for fire. Language barriers and voice calls-for-fire result in a higher-than-acceptable likelihood of the observer's location being fired upon.
- Conduct a fire-support rehearsal and confirm understanding.

Intelligence:

- Don't hesitate to incorporate the attached unit into the battalion's information-collection (IC) plan. Provide them with tasks and purposes linked to observable named areas of interest. A recent example is that a U.S. battalion tasked an attached company to clear and secure high ground to facilitate a breach but did not use the IC plan to focus the company. Ultimately, that company destroyed an outpost and manually breached the now-unobserved obstacle; however, it all came about as actions on contact rather than from a focused plan that provided operational guidance to the attached company based on intelligence.

Sustainment:

- Your ability to sustain your attached units will hinge on their ability to plug into a U.S. system of sustainment. This system will probably be unfamiliar to them and based largely on a U.S. tradition of execution at the NCO level, which may be unfamiliar to many of our allies. Getting them involved, particularly in medical evacuation, will be a steep learning curve for some nations. Establishing an accurate logistics COP (LOGCOP) will be another area in which units may struggle. Developing and reporting the LOGCOP, and understanding sustainment issues unique to each country, are critical. A sustainment rehearsal, while often the first thing to go in a time-constrained environment, is critical

Figure 5. U.S. Soldiers of 2nd Battalion, 12th Cavalry Regiment, 1st Brigade Combat Team, 1st Cavalry Division, prepare to fire a Javelin shoulder-fired anti-tank missile while Albanian soldiers provide security during Exercise Combined Resolve III at JMRC Nov. 6, 2014. *(U.S. Army photo by SGT Ian Schell)*

to understanding, and daily meetings at the logistics release point ensure face-to-face synchronization. Also, many of our allies use DF2 in their vehicles, rather than JP8. While both are technically diesel, they are not interchangeable.

Protection:

- With regard to chemical-biological-radioactive-nuclear, you get what you get with equipment and training readiness. Risk management may be the biggest area of concern, so engage early with attached leadership. Assess whether they have a process and whether they take it seriously. If not, give them an overview of ours and reinforce your expectations that they use it.

Mission command:

- A liaison officer (LNO) team tasked from the higher headquarters to the subordinate headquarters is very useful. We've seen success with both heavy and light forces in this. A model includes a minimum of a team of three Soldiers. In a heavy force, this team should include a humvee with dual long-range radios and BFT. The LNO team can do much to offset linguistic barriers and ensure a true COP between company and battalion. Face-to-face communications at the company level help ensure that tasks are appropriately relayed over a chaotic and fast-paced command net while minimizing what is "lost in translation" over the net. LNOs to adjacent units and higher headquarters are also useful. Of course, there is a limited supply of excess officers, senior NCOs and trucks, so the commander has to manage risks as he spreads these critical enablers around the force.

- Limit task-organization changes. All the difficulties of quickly changing task-organization are compounded in changing attached multinational units. Pick one task-organization and stick with it, regardless of potential incremental gains.

- Keep as much of your communications systems as secure as you can. Don't downgrade COMSEC standards to accommodate attachments. Use your LNOs.

- Know and understand national policies regarding the limited ability to share digital systems and products, and work within those constraints.

- Your operations order was not as clearly understood as you like to think it was. A personal visit with the attached unit's commander and a detailed backbrief can offset that lack of understanding.

- Invest the time with our allies to show you care. Invariably, though you don't mean it, you or your staff is short-changing them in time, attention, support, products and information. You are responsible for bringing them in and forming the team. Not them.

Fratricide reduction:

- Understanding what equipment your forces, and that of adjacent units, are equipped with is critical, but even more important is planning with the requite details

and disseminating those plans to the lowest level. Consolidated graphics should be built and pushed down in hard copy and digits, as well as on BFT. They also must get pushed higher.

- What kind of graphics have we built? Are they restrictive or permissive? Do they require our attached elements to comply with them?
- LNOs can actively work to increase situational awareness and prevent potential conflicts in movement through cross-talk.
- Standardize vehicle markings, including low-light or thermal markings. Share Command Inspection Program (CIP) panels or use reverse polarity paper to make ad hoc CIP panels.
- FPoL / RPoL must be planned in detail, with appropriate guides or escorts allocated. Consider co-locating LNOs or key leaders in passing or passed unit command posts.

A senior leader from an allied nation recently described that the most important ingredient in multinational operations was trust. I would agree that trust is key, but true trust must be built based on a thorough integration of attached units, sharing information and the commitment that we will employ our attached multinational units in accordance with their capabilities and with the same care and diligence we would give our own forces.

The initial after-action review on multinational integration is done. Let's take the time to fully integrate 3rd Company Panthers into TF Hammer and get ready for the next mission. Train to win!

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Acronym Quick-Scan

BCT – brigade combat team
BFT – Blue Force Tracker
BMP – *boyevaya mashina pekhoty*
CAB – combined-arms battalion
CIP – Command Inspection Program
CL – class
COMSEC – communications security
COP – common operating picture
CTC – combat training center
DF2 – Diesel Fuel 2
FPoL – forward passage of lines
FSO – fire-support officer
IC – information collection
JCAP – Joint Combined Academics Program
JMRC –Joint Maneuver Readiness Center
JP – jet propellant
LNO – liaison officer
LOGCOP – logistics common operating picture
NATO – North Atlantic Treaty Organization
NCO – noncommissioned officer
RPG – rocket-propelled grenade
RPoL – rearward passage of lines
SBF – support-by-fire
TF – task force

Information-Collection Failures that Lead to 'Discovery Learning'

by CPT Raymond A. Kuderka and CPT Andrew Eickbush

"Before I can develop the ground-maneuver plan, I need to know what the enemy is doing." This sentence is echoed by operations officers during every scenario conducted at our Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany.

Intelligence preparation of the battlefield is the intelligence officer's primary task during mission analysis and serves as the catalyst synchronizing information collection (IC) with a ground-maneuver plan throughout the military decision-making process. The IC process at face value seems simple enough – staff provides analysis in the form of the commander's critical information requirements (CCIR), thus enabling the commander to make informed operational decisions – but we've noticed that in most decisive-action training environment (DATE) rotations at JMRC, regardless of unit type or nation of origin, units fail to plan and execute an IC plan that supports the commander's decision-making process.

Why? Though our list is not all-encompassing, most shortcomings of IC planning/execution can be attributed to the following failures:

- Not defining the operational framework;
- Producing convoluted IC overlays;
- Not understanding organic IC capabilities;
- Not prioritizing assets; and
- Executing inadequate staff coordination.

The result of these inefficiencies often leads to unnecessary "discovery learning" as the unit crosses the line of departure with little situational understanding of its immediate fight.

The following five problem sets describe established patterns we regularly see during rotations at JMRC. Each provides a starting point for discussion. The intent is for each unit to acknowledge these common shortcomings and provide a unit-tailored solution based on composition, disposition and mission to set the conditions for success.

Problem Set 1: defining operational framework

Army doctrine on unified land operations states that "Army leaders are responsible for articulating their visualization of operations in time, space, purpose and resources" (Army Doctrinal Reference Publication (ADRP) 3-0, ***Unified Land Operations***). This is accomplished through developing a standard operational framework that is consistent throughout all echelons. There is a direct connection between defined framework and its application to the development and execution of an IC plan.

Most units' intelligence sections

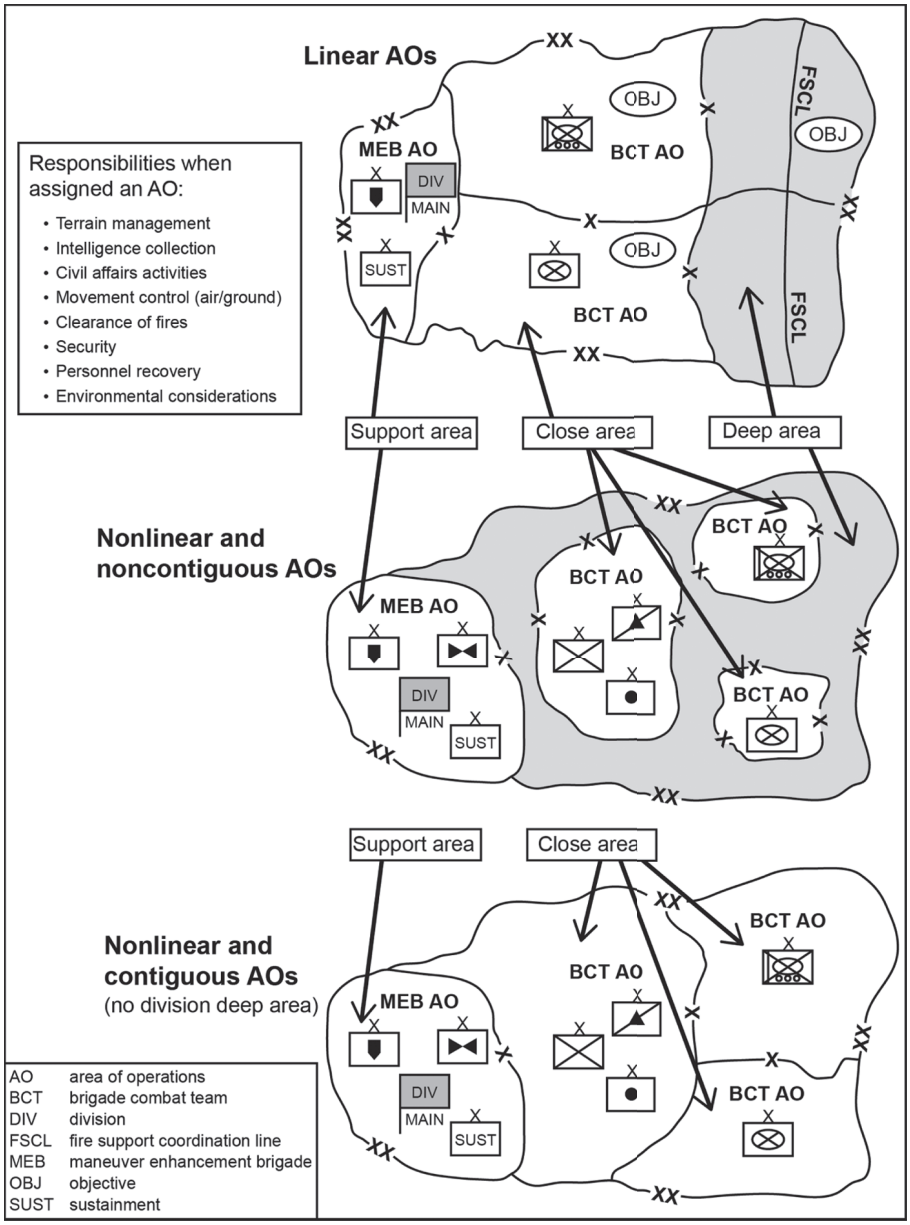

Figure 1. Example of deep-close-security operational framework. (*Figure 1-1, ADRP 3-0)*

analyze the mission in a framework that most closely resembles the deep-close-security framework. According to this framework, "areas of operation can be divided into three distinct parts: support area, close area and deep area" (ADRP 3-0). We will use this framework to discuss observed trends throughout the rest of this article.

Most units view their assigned area of operation in a homogenous manner, resulting in little to no delineation between the deep and close fight. This view cripples IC planners' ability to visualize the battlefield. Ultimately, without a clear understanding of the operational framework, units inevitably develop and execute an IC plan with three seams that the enemy exploits to gain a marked advantage.

Seam 1: battalion close area

At the battalion level, the primary friction point lies in the belief that all critical-information requirements are located within their deep area. In addition, units assume that subordinate elements will execute counter-reconnaissance patrols without direct tasking. This leads to all organic IC efforts focused too far forward – to the furthest extent of the brigade's close area. Consequently, the battalion fails to develop and task-organize IC assets/capabilities to collect on close-proximity named areas of interest (NAI), with a specific focus on enemy reconnaissance elements. These actions create "Seam 1" as depicted in Figure 2. The result is that the enemy has complete freedom of movement around the unit's main body, with unrestricted surveillance and observation of indirect fires.

Seam 2: battalion deep area vs. brigade close area

Brigades and battalions struggle to define their individual roles and responsibilities for collection between their respective close and deep areas. This is the basis for Seam 2 depicted in Figure 2. Battalion and brigade operations and intelligence personnel rarely synchronize IC efforts. This lack of coordination often results in a combination of three outcomes:

- **Duplicated efforts –** Brigade and battalion establish NAIs and task-organic elements to collect information at the same geographic location. Often this is represented by a battalion that tasks organic reconnaissance assets to observe the same area the brigade is covering with an aerial IC platform.
- **Echelon prioritization –** IC overlays are developed and executed at both the brigade and battalion level without discussion, understanding or rehearsals. Consequently, neither echelon comprehends the prioritization of NAIs but merely assumes that templated NAIs will receive coverage. Unfortunately, rarely does NAI prioritization at the brigade and battalion match. As a result, the brigade does not collect on a critical (event-driven) NAI from the battalion perspective.
- **The deep focus –** Units tend to position their reconnaissance assets to the furthest extent of their deep area. Also, units do not have enough reconnaissance efforts to cover in both width and depth. The result is Seam 2 – a gap in coverage between the rearmost elements of the unit's reconnaissance effort and the forward edge of the unit's main body. Depending on the depth, it may constitute a gap in both time and space. For example, an enemy echelon may pass through deep brigade or echelon-above-brigade reconnaissance assets and, because it is not handed off to battalion scouts or other assets, it essentially disappears in the seam and is not observed again until it arrives in the battalion's forward edge of the battle area hours later. Worse, the enemy may appear again only in our rear or flanks (Seam 1), having taken advantage of the third seam.

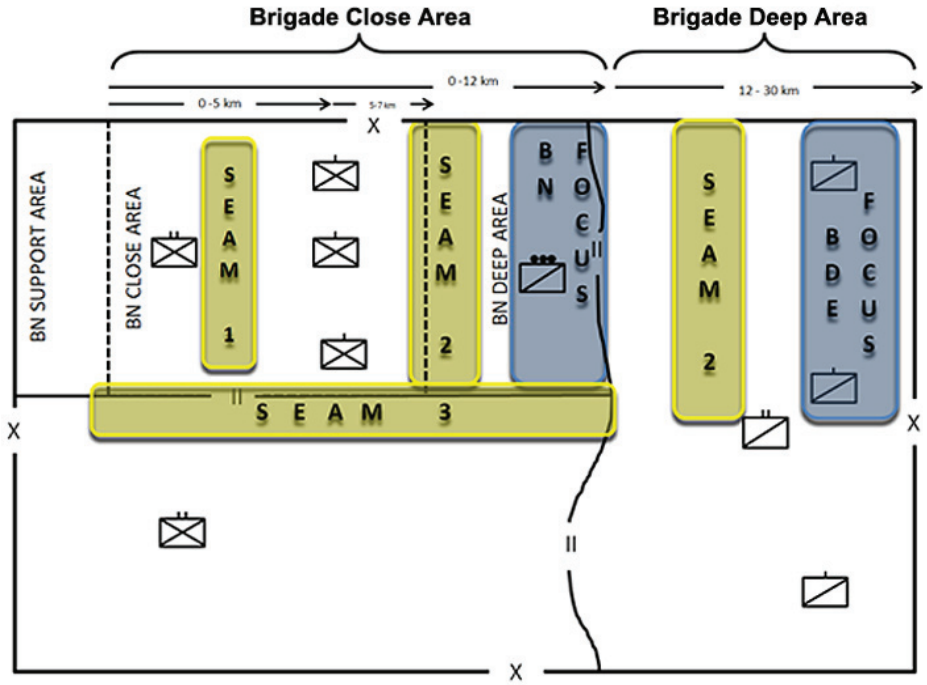

Figure 2. Brigade linear battlefield with defined deep and close areas.

Seam 3: adjacent unit coordination

Successful operations include adjacent unit coordination. IC planning is no different. Units often state the need to synchronize their movements, fire plans and sustainment requirements but rarely share CCIR, IC overlays or current enemy assessments. Instead, they rely on their higher headquarters and digital platforms like Blue Force Tracker, Command Post of the Future or Distributed Common Ground System-Army to create common understanding. Absent from the process is direct verbal or face-to-face interaction. Most intelligence sections routinely fail to establish effective primary, alternate, contingency

and emergency plans, leaving each subordinate organization operating as an isolated unit.

This issue is amplified when working within multinational task forces that operate off varying mission command and communications systems, as witnessed at JMRC. This lack of direct synchronization creates Seam 3, which runs parallel along unit boundaries. The enemy anticipates this failure, seeks to identify the seam and then exploits it by committing its main attack on this axis.

Nonlinear environment

Defining the operational framework within a nonlinear environment is conceptually much harder for most organizations. The frustration is often multiplied as the brigade and battalion focus of reconnaissance is overlaid over most of the same terrain. As depicted in Figure 3, it becomes clear how multiple aerial assets become layered within the same geographic footprint.

The Army's experiences during Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) are mostly built on a nonlinear operational framework. This nonlinear and static environment forced units to use IC assets to look internally on their area of operation (AO). This enabled subordinate units to one, accept, and two, expect, an abundance of nonorganic aerial IC platforms. Indirectly, this led to brigade assets collecting on multiple battalion and brigade NAIs from the same airspace at near-simultaneous time. These experiences built a perception that IC platforms could answer multiple information requirements within multiple areas during a single flight with minimal coordination. This caused a paradigm shift toward a substantial decrease in IC tasks directed at organic maneuver elements, including battalion scouts.

The Army has yet to transition back toward recognizing the finite aerial resources and their placement in the brigade and battalion reconnaissance efforts. Ultimately, the Army will continue to fight wars in both a linear and nonlinear operational framework. Each provides opportunities and limitations. Units must recognize how these frameworks affect their tasking of IC platforms.

Problem Set 2: IC-overlay inadequacies

"The tasking and directing of information collection assets is fundamentally linked to the development of the IC overlay," according to Field Manual (FM) 3-55, ***Information Collection***. In DATE, intelligence sections routinely produce IC overlays that are not tied to satisfying CCIR; are convoluted and lack focus; and are not phased over time.

The foundation of an effective IC plan starts with a coordinated effort between the staff and commander to develop CCIR. Establishing priority information requirements (PIR) allows the collection manager to focus efforts on finding information that will ultimately drive a decision. However, commanders rarely take ownership of this process, resulting in adoption of a higher echelon's CCIR or in the intelligence officer (S-2) creating his or her own information requirements. The residual effect is felt in the IC overlay as NAIs are chosen based on terrain analysis and templated enemy locations rather than on critical events that drive decisions.

An efficient IC overlay is clear, concise and easily understood. In most rotations, units struggle to adhere to these principles. The most identifiable shortcoming is the inability to delineate IC overlays between echelons. Often these products have countless NAIs that lack a specific focus, exceed IC collection capabilities and are not tied to the specific units plan (brigade NAIs on battalion IC overlay). In plain sense, the entire AO becomes an NAI. Consequently, units are overwhelmed and do not prioritize, resulting in a failure to task collection assets on critical NAIs.

The initial IC overlay developed to support an operation needs to adapt as conditions change. However, units fail to develop IC overlays that are phased over time as their operational focus changes (defense, offense, wide-area security). The common practice involves the application of NAIs across the depth of the AO based off assumptions from initial mission analysis. This results in units creating "enduring" or "legacy" NAIs with the belief that their relevance is applicable to all phases of the operation. Ultimately, if the IC plan is not updated, it is no longer relevant after the first day of the operation.

Problem Set 3: missed opportunities with organic and multinational capabilities

Units often fail to effectively use their organic IC assets. This is predicated on deployed experiences that have conditioned units to use aerial platforms rather than ground elements. Indirectly, operations officers are focused on planning and lose sight of how and to whom specific information requirements were tasked.

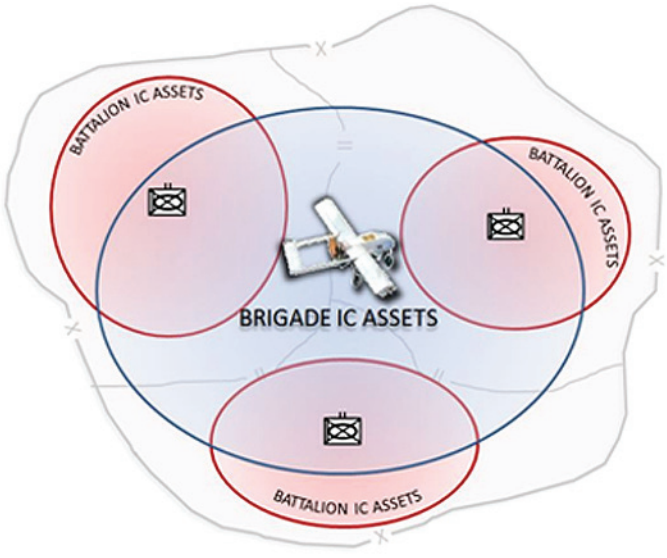

Figure 3. Brigade and battalion IC assets within a nonlinear framework.

Organizations often have a myriad of units with specific capabilities that have been attached to or reside within their organic footprint that could support the reconnaissance effort. These elements range from Air Force's Joint Tactical Air Controllers (JTAC) to

forward observers to the basic infantryman. Each of these carries its own capabilities that can be applied to specific information requirements within the IC Synchronization Matrix. What units often fail to realize is that more than one unit is capable of answering CCIR. More importantly, we fail to disseminate CCIR effectively and efficiently to the myriad assets that could provide the answers.

A common example often observed at JMRC is described following.

The battalion S-2 develops a specific information requirement with an accompanying indicator of three or more *boyevaya mashina pekhoty* (BMPs) traveling through a mobility corridor within a valley. This information will answer a PIR that determines what avenue of approach the enemy main body will use for its attack. In addition, the PIR will also drive the battalion commander's decision concerning his counterattack plan. In the execution of the battalion IC plan, this PIR is often tasked to the forward-most element: the battalion scouts.

In most circumstances, Air Force JTACs are employed within the battalion-scout element in an effort to streamline the prosecution of targets through Type I or Type II close-air-support (CAS) control during force-on-force engagements. The attached JTACs are very capable of answering this same mission-critical PIR. However, rarely are the JTACs tasked to collect on, or are aware of, the unit's PIRs. This lack of awareness results in JTACs that do not understand the battalion's critical-information requirements. Information gathered is ultimately conveyed as a situation report (sitrep) rather than an answered PIR. This method relies on the radiotelephone operators' training to extract relevant information and inform unit leadership.

Another significant oversight is the incorporation of multinational partners. Often units arrive at JMRC with a predisposed list of limitations for their multinational partners. U.S. units must not focus on their multinational partners' constraints but rather on their capabilities. An example of this is when U.S. units focus on their multinational partners' limited night-vision devices, which hampers movement at night, as an excuse to relegate their role to insignificant tasks. Instead, leaders should consider how to leverage their counterpart's strengths wherein they are viewed as contributors rather than inhibitors.

Lastly, units rarely establish a system that efficiently uses the individual Soldier as an IC asset. CCIR is only known by leaders with the expectation that they will receive reports from subordinates, decipher the information and transmit the appropriate answer to designated PIRs. In practice, leaders rarely have the capability to track all the PIRs and filter reports from subordinates to answer them. Soldiers who understand PIR can become the filters and report answers rather than sitreps. This will prevent excess traffic on the radio and enable company leadership to focus where required.

Problem Set 4: asset prioritization and retasking

Leaders continue to rely on their counterinsurgency experiences as the Army transitions to DATE training scenarios at JMRC. Most previously deployed leaders have a shared experience relating IC assets to a false sense of ownership or tasking ability. This understanding is built on the surplus of theater IC assets present during OIF and OEF. Contingent to this experience is the execution of most immediate reconnaissance operations by "pulling" IC assets rather than using organic elements. Pulling IC assets was accomplished by applying the immediate CAS request to IC platforms – establishing the immediate IC request. Inevitably, units had success at receiving support for scantily planned reconnaissance efforts due to an abundance of IC assets.

The net result of this process was subordinate units that do not develop a distinct, focused IC plan using organic IC assets. Also, units lack the ability to forecast and request higher-level capabilities to satisfy information requirements that cannot be met using organic platforms. JMRC observer/controller/trainers (O/C/Ts) have observed units that plan under the assumption that if they find a brigade priority target, they will receive the higher-level organization's organic asset(s) (Shadow) to continue to develop the intelligence. Ultimately, they believe, "If we find it, they will come."

The failure of headquarters units to provide the required prioritization and oversight for IC is the reverse result to the immediate IC request. Just as a battalion was able to "pull assets," brigade now has the means to retask. This ability has a detrimental impact on developing the IC Synchronization Matrix. Organizations no longer feel the need to designate assets by time to prioritized NAIs. IC fundamentals such as cueing, mixing and redundancy are not incorporated into asset management. Instead, the IC Synch Matrix resembles more of an asset-request template because allocated platforms rarely collect on requested NAIs. These assets are usually retasked as soon as they arrive on station.

Ultimately, units must understand that assets, to include IC platforms, are a finite resource. Battalions and brigades must clearly prioritize NAIs that satisfy CCIR. The dissemination of prioritization, both higher and lower, is vital to preventing IC assets from being "retasked." An absence of prioritization prior to the fight will continue to increase higher units' appetites to "pull" IC platforms to fill immediate needs as they arise during the fight.

Problem Set 5: need for staff collaboration

"The operations officer, based on recommendations from the operations staff, tasks and directs the [IC] assets," according to FM 3-55. The concept that IC is a collaborative process involving the entire staff is codified in doctrine and should be accepted by all leaders. However, most battalions continue to struggle with the practical application of cohesive IC development, leaving the battalion S-2 as the task's sole proprietor. The compounding effects of this decision result in the absence of NAI prioritization in accordance with the ground-maneuver plan, limited organizational understanding of the information requirements tied to each NAI and, most importantly, subordinate organizations that are not specifically tasked to collect on critical NAIs that drive operational decisions by the

battalion commander.

Conclusion

The phrase "intelligence drives operations" is commonly accepted throughout the Army. IC is critical in making this phrase a reality. Throughout this article, we have identified five major shortcomings (problem sets) that prevent organizations from internalizing this mantra. Leaders need to acknowledge these common pitfalls to drive unit-tailored solutions. The success of the mission depends on it.

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CPT Andrew Eickbush is an O/C/T with JMRC. His past duty assignments include commander, Headquarters and Headquarters Battery, 4-25 Field Artillery, 3/10th Mountain Division, Fort Drum, NY; commander, Battery A, 4-25 Field Artillery; battalion fire-support officer, 2-87 Infantry, 3/10th Mountain, Fort Drum; and assistant S-3, 4-25th Field Artillery. His military schooling includes NATO 101, Joint Firepower Course, Field Artillery Career Course and Field Artillery Basic Officer Leadership Course. CPT Eickbush holds a bachelor's of science degree in industrial engineering from South Dakota School of Mines and Technology.

Acronym Quick-Scan

ADRP – Army doctrinal reference publication
AO – area of operation
BMP – *boyevaya mashina pekhoty*
CAS – close air support
CCIR – commander's critical information requirements
DATE – decisive-action training environment
FM – field manual
IC – information collection
JMRC – Joint Multinational Readiness Center
JTAC – Joint Terminal Attack Controller
NAI – named area of interest
NATO – North Atlantic Treaty Organization
O/C/T – observer/controller/trainer
OEF – Operation Enduring Freedom
OIF – Operation Iraqi Freedom
PIR – priority intelligence requirement
Sitrep – situation report

Killer Troop Tests Anti-Armor Doctrine on National Training Center Battlefield

by 1LT Lawrence Collins

Killer Troop is the anti-armor company in 11th Armored Cavalry Regiment (ACR), Fort Irwin, CA. The 11th ACR serves as the opposition force at the National Training Center (NTC). The troop uses humvees equipped with missile launchers. These vehicles are fitted with a "shark nose" visual-modification kit to replicate the Russian anti-tank missile vehicle, also referred to as AT-5 *bronirovannaya razvedyvatelnaya dozornaya mashina* (BRDM). The AT-5 BRDMs carry missiles in a launcher on top of the vehicle. Killer Troop uses a laser-engagement system to replicate missile effects at NTC.

The seven fundamentals of anti-armor unit employment are: mutual support, security, flank-shot engagement, standoff, employment in depth, employment as part of a combined-arms team, and cover and concealment. These fundamentals are the tactical essentials for anti-armor platoons and companies. They improve the survivability and lethality of anti-armor elements. During NTC's Decisive Action Training Environment Rotation 15-02 in November 2014, Killer Troop tested these fundamentals against 3rd Armored Brigade Combat Team, 4th Infantry Division. Data was collected at the end of each of the four battle periods to confirm or deny the anti-armor fundamentals' use and utility on the NTC battlefield.

Mutual support, the fundamental that dictates anti-armor task organization, was practiced in terms of physical proximity of AT-5 squads in most engagements. AT-5 BRDMs using mutual support averaged a battle-damage assessment (BDA) 12 times higher than those not using mutual support. Section battle drills and direct-fire control measures must be rehearsed and implemented into operations to sustain this substantial performance difference. When using the laser-engagement system to replicate missile effects, it often required more than one missile to produce a catastrophic kill (CATK).

1LT Allen Blount, a platoon leader, commented that using some form of direct fire-control measure, terrain- or threat-based, is critical in destroying the greatest threat first, and is especially important when fighting a more heavily armored force. Quickly destroying enemy threats increases the probability of achieving the standoff fundamental.

Anti-armor units overcome vulnerabilities with good ***security***. This is why the security fundamental is critical and why anti-armor units must be positioned near friendly infantry units in addition to providing their own local security. An example of this fundamental in practice was in the case of an

Figure 1. An AT-5 BRDM moves through NTC's open desert. The AT-5 BRDM is a modified humvee outfitted to replicate the Russian BRDM-2, an anti-tank combat reconnaissance patrol vehicle. *(U.S. Army photo)*

infiltration company in the NTC city of Ujen during Battle Period 3. The infiltration company, consisting of four AT-5 BRDMs, used dismounted infantry to establish strongpoints in buildings to overwatch the AT-5s' positions.

This example also demonstrates the utility of the ***employment as part of a combined-arms team*** fundamental. Anti-armor squads and sections, no matter the situation, must be mindful of all enemy threats to ensure they survive to fight in the main battle.

For a number of reasons, anti-armor sections and squads should be positioned to engage tanks and other armored vehicles from their flank, a fundamental known as ***flank-shot engagement***. Overall, just under half of enemy vehicles were engaged from the flank or rear, and squads were positioned to engage the enemy from the flank just over half the time. Contrary to anticipated results, squads positioned to engage the enemy from the flank and front were equally successful. The lack of difference between the two figures suggests that elements positioned to the front of the enemy's location or anticipated axis of advance were better able to apply the standoff and employment-in-depth fundamentals. Poor placement on the flank, in terms of fields of fire, could also be a contributing factor. There was no significant difference in the survivability of anti-armor squads placed to the front and to the flank.

When engaging enemy vehicles, it is best to do so outside their maximum range to achieve ***standoff***, another anti-armor fundamental. Standoff is an area of substantial improvement within Killer Troop. Data collected shows that standoff was achieved in a minority of engagements for both Abrams tanks and Bradley Fighting Vehicles. Potential causes of these deficiencies are poor placement of anti-armor elements, both by mechanized infantry battalion (MIBN) commanders and anti-armor leaders, and poor reconnaissance of battle positions. Anti-armor leaders must know the capabilities of their weapons systems and make recommendations to the MIBN commander concerning the placement of their forces to achieve standoff and flank-shot engagements. Leaders must also conduct a physical leader's recon when possible to ensure the terrain and associated fields of fire in their battle positions allow adherence to these two fundamentals.

MIBN commanders must adjust plans based off physical leader's recons. After the failure of an offensive operation during Battle Period 3, SFC Anthony Dominguez, a platoon sergeant, suggested that AT-5s travel behind the MIBN main body during offensive operations. The purpose for this is to provide overwatch during friendly maneuver and to engage enemy vehicles that expose themselves to engage friendly forces. This would increase the survivability of friendly armored vehicles and of AT-5 systems who need to maintain standoff.

Mass and depth are the keys to anti-armor employment. Mass is achieved with mutual support, and depth is achieved with the ***employment-in-depth*** fundamental. Employment in depth is achieved by conducting more engagements at, or close to, standoff. During the rotation, anti-armor squads destroyed most of their total BDAs from their primary battle positions. Subsequent-position BDA, recorded up to the third subsequent position, totaled only a fraction of the BDA of squads' primary positions. Each squad averaged two battle positions per battle period. These figures show that anti-armor leaders may not be planning subsequent positions well enough or are failing to plan for them entirely. About half the AT-5 crews that received a CATK received it at their primary battle position, indicating that crews are staying at their primary battle positions too long. This increases the likelihood of the enemy discovering and targeting their vehicles.

Battlefield teammates – specifically infantry, Armor, engineers and artillery – mutually support anti-armor elements during battle. This fundamental is referred to as employment as part of a combined-arms team. Each vehicle commander (VC) was asked to rate the integration of his anti-armor element into the combined-arms effort of his MIBN. The average rating VCs gave their MIBNs was less than ideal, with platoon leader and platoon sergeant VCs' average rating only slightly higher

Figure 2. A Soldier assigned to Troop K, 2nd Squadron, 11th ACR, fires a simulated BGM-71 TOW Weapon System May 29, 2014, during a decisive-action training rotation aimed at preparing units for future deployments. The BGM-71 is mounted atop a humvee outfitted to replicate the Russian BRDM-2, an anti-tank combat reconnaissance patrol vehicle. *(Photo by SPC Denitra Halford, 11th Armored Cavalry Regiment Public Affairs Office)*

than other VCs. To support their ratings, VCs commented on poor placement of squads, no task or purpose given, and no discussion of the tactical employment of their squads or sections with MIBN leadership. It is the responsibility of anti-armor leaders to advise the MIBN commander on the tactical employment of their AT-5s. VC comments also asserted that anti-armor elements be used as a MIBN asset, not as an enabler embedded into MIBN-organic platoons. Successful integration with MIBN forces in planning and execution of operations is essential to optimize AT-5 squads' support of the MIBN commanders' intent and objectives.

Cover and concealment, the final anti-armor fundamental, is critical to the survivability of anti-armor weapon systems. VCs conducted self-assessments each time their squad was destroyed to determine which fundamental failure led to their destruction. Of these instances, most of them were attributed to poor cover and concealment. Standoff came in second, but at only one third of those attributed to poor cover and concealment. Other comments recorded pertaining to cover and concealment are as follows: move slowly to avoid dust kick-up; follow and support friendly vehicles the enemy is more likely to target first; placement in a location the enemy does not expect you in is a form of concealment; and urban areas provide excellent cover and concealment. While smoke was readily available and aids in concealment, it was only used on one recorded occasion the entire rotation.

Cover and concealment is inseparable from receiving a CATK. Attack helicopters and indirect fires (IDF), in the form of bombs and artillery, are tied as the leading causes of CATKs for AT-5 systems. The Abrams was the third leading cause of death. For IDF, the presence of unmanned-aircraft systems was a precursor on almost all occurrences, and other friendly forces were exposed in the area on all occurrences. In light of these figures and with respect to cover and concealment, anti-armor squads should remain dispersed from other friendly units and each other with overhead concealment to negate both the effects and probability of receiving IDF. They should also seek cover at hull defilade at every opportunity during engagements. Using alternate, supplementary and subsequent positions aids in complicating enemy target-acquisition processes for using IDF.

Although it does not fall under a specific fundamental, it was found that infiltrating an urban area in close proximity to the enemy is a very effective method of compromising his initiative and destroying the integrity of his combined-arms team. Of the total enemy vehicles destroyed over all four battle periods, a notable percentage of them resulted from the aforementioned infiltration company in Ujen during a single battle period. One platoon per battle period conducted this type of operation with the same success it would achieve in a BDA exceeding the total rotational BDA for Killer Troop's anti-armor forces.

All the fundamentals of anti-armor employment work together. Squads must use security to survive until the main battle; they must use cover and concealment and mutual support to achieve employment in depth; and employment in depth must be used to achieve standoff. All anti-armor crewmen must understand the application of these fundamentals to increase the lethality and survivability of AT-5 systems. The data collected validates doctrinal principles and should be used by anti-armor leaders and maneuver commanders to adjust their planning considerations and rehearsal priorities in future operations.

Figure 3. A humvee from Killer Troop, 2nd Squadron, 11th Armored Cavalry Regiment, outfitted to replicate the Russian BRDM-2, an anti-tank combat reconnaissance patrol vehicle, battles a Bradley Fighting Vehicle during a decisive-action training rotation aimed at preparing units for future deployments. *(Photo by SGT Erik Thurman, 11th Armored Cavalry Regiment Public Affairs Office)*

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Acronym Quick-Scan

ACR – armored Cavalry regiment
BDA – battle-damage assessment
BRDM – *bronirovannaya razvedyvatelnaya dozornaya mashina*
CATK – catastrophic kill
IDF – indirect fire
MIBN – mechanized infantry battalion
NTC – National Training Center
VC – vehicle commander

The Future of Unmanned Systems in Cavalry Squadrons

Starry Writing Competition 2014 finalist

by CPT Christopher M. Brandt

The future of reconnaissance-and-security tactics lies in our ability to effectively combine manned assets with unmanned systems, a concept known as manned-to-unmanned teaming. To meet the demands of 2025 and beyond, our Cavalry squadrons must acquire and incorporate the capabilities of unmanned systems into our formations. This article will discuss the case for miniaturized unmanned systems, their potential tactical capabilities for reconnaissance-and-security operations, the current state of the technology and expected limitations and future research of the systems.

Imagine a reconnaissance team quietly infiltrating a wooded area. It is dark outside; the moon has yet to rise over the horizon. The scouts know of their enemy's night-vision and large-platform unmanned aerial vehicle (UAV) intelligence, surveillance and reconnaissance (ISR) capabilities, so they remain concealed in the trees. As they near a clearing, the team stops and begins to set in security. One of them removes a small container out of a pouch on his vest and, a minute later, he has set up a tiny helicopter smaller than the size of his hand. The helicopter's blades begin to spin, and it hovers in the air next to the scout. It is so small that its sound is almost inaudible, and as it flies up above the tree line, it is virtually undetectable. The scout watches a thermal video feed from the miniature helicopter as it flies above the tree line, guided along its planned route by Global Positioning System (GPS) signal.

A few minutes into the flight, he has located enemy vehicles and personnel in a defensive position about a kilometer away. At the press of a button, the drone lazes the target, and it delivers a triangulated set of coordinates to the enemy position. The team leader radios the coordinates back to his headquarters, requesting a fire mission for this target of opportunity. Moments later, artillery begins raining down on the unsuspecting troops. The team leader calls in corrections based on feedback from his video feed. As the fire mission successfully ends, the drone returns to the team. They quickly recover it and prepare to move, safely out of their disarrayed enemy's sight.

Now, imagine the victims in this stealthy attack are U.S. troops under attack from a near-peer threat.

Although the reconnaissance team pictured in the preceding scenario is from a conventional state threat, it is easy to conceive of an unconventional force using existing commercial items to create similar capability sets. Commercial off-the-shelf products are consistently increasing in popularity and availability, and many already have GPS navigation and video-recording capabilities.[1] It would not be difficult for violent non-state actors to create aerial improvised explosive devices ("suicide drones") by loading small amounts of explosives onto a small or micro unmanned aerial system (UAS) and remotely piloting the system to a point of detonation.[2] A scenario such as this one is becoming increasingly likely as the miniaturization and proliferation of technology makes it easier for militaries and violent non-state actors to acquire similar technology.

The political world is beginning to adjust to this paradigm shift, and it will soon become increasingly important for our military forces to meet or exceed the pace of other nations' unmanned research and development.

Why unmanned systems?

It is unlikely that today's generals spent much time when they were second lieutenants thinking about things such as the Internet, cellphones or social media. Despite this, technological revolutions like these have changed the landscape of the strategic, operational and tactical levels of warfare. Unmanned systems are another technological advancement that have indelibly impacted the way we fight. As the Defense Department's ***Unmanned Systems Integrated Roadmap FY2013-2038*** states, "The prevalence and uses of unmanned systems continue to grow at a dramatic pace. The past decade of conflict has seen the greatest increase in unmanned aircraft systems, primarily performing ISR missions."[3]

When asking ourselves why we should consider unmanned systems, there are several key reasons. Chief among these is the tactical benefit. In Iraq and Afghanistan, small UAS (SUAS) such as the Puma and Raven have already proven incredibly useful in providing more situational awareness to troop-level commanders.[4] However, current systems often filter data from ISR platforms through multiple levels of command, increasing reaction and response time. Even troop systems such as the Puma, Raven and the One-System Remote Video Terminal are not always accessible to the Soldier in the field. Enabling ISR capability at the section or platoon level will result in faster *observe, orient, decide* and *act* decision cycles, leading to an increase in enemy acquisition and decreases in

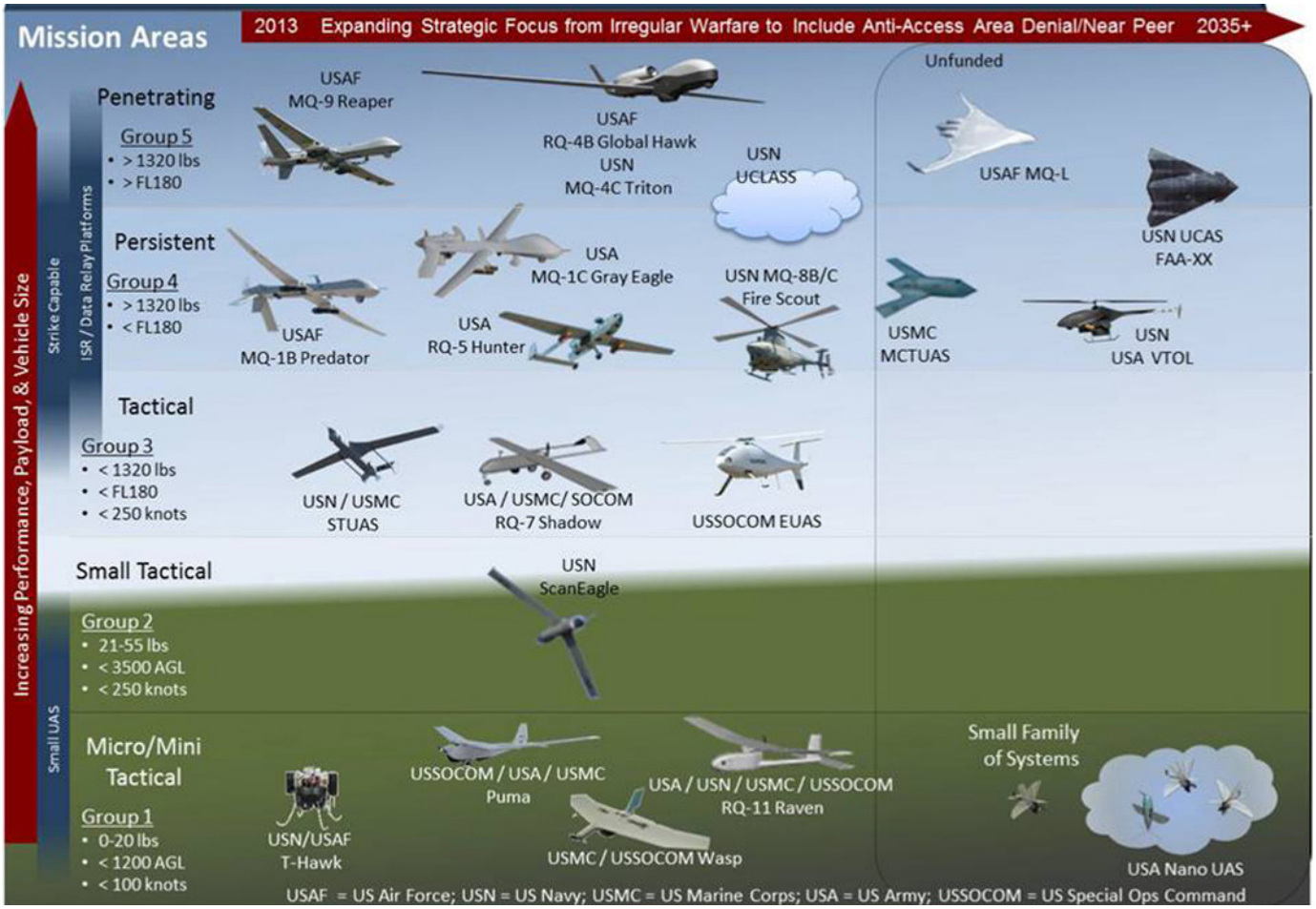

Figure 1. DoD unmanned systems roadmap for UAS (FY 13-38).

small-unit response times.

Another important consideration is the relative reduction in enemy detection of our forces. By being able to remotely pilot unmanned systems, scouts have an enabler that will assist them in remaining undetected. Furthermore, the smaller acoustic and radar signatures make detection of the unmanned system much less likely.[5] This will ultimately save the lives of our Soldiers.

Finally, one more benefit is the comparable cost-savings of developing small unmanned systems for use when compared to large systems like the MQ-1 Predator and MQ-9 Reaper.[6] The unmanned systems themselves are relatively inexpensive to produce, and their prices will continue to drop as mass production increases.[7] By using common sensors and interchangeable parts, the U.S. military can "capitalize on commonality, standardization and joint acquisition" to "create unmanned systems that are both effective and affordable."[8]

Tactical capabilities

There are many theoretical applications of future unmanned air and ground systems.[9] These come in the form of "payloads," or interchangeable modules that provide specific capability sets. Many of these capabilities support key tasks for a Cavalry squadron. Based on the following proposed capabilities, unmanned systems could have a significant impact on the way we fight wars in the near future:

- Electro-optical/infrared sensors provide live video feeds in day or night scenarios.
- Target-locator modules provide target acquisition capability for artillery and air strikes.
- A communications module provides additional radio or retransmission capability ideal for extended-range communications.
- A data-networking module to support cueing other ground and air reconnaissance assets links these systems to focus collection on the target.
- An electronic-warfare (EW) module would support collection or disruption of signals.
- Chemical, biological, radioactive and nuclear (CBRN) modules would support early warning and reporting of "dirty" environments while keeping Soldiers at a safe distance.[10] [11]
- Unmanned systems in a "perch-and-stare" mode (placed in a low-power-consumption stationary setting) would use passive acoustic, magnetic, seismic and visual sensors to provide early warning during security operations.
- Accurate aerial three-dimensional photomapping provides near real-time area or route reconnaissance intelligence.[12]
- Offensive or defensive capabilities could be developed such as small arms,[13] [14] fragmentary grenades, bombs or rocket capabilities.[15] [16]

- Ground- or air-based resupply vehicles could help to deliver vital supplies or ammunition to scouts ahead of the main body without putting support personnel in danger.[17]
- Ground-based unmanned engineering vehicles could be used to breach obstacles or dig fighting positions.[18]

Current technology

There are many commercial systems already available from companies who are leading the way in this new field. However, the current price range for most of these systems mean that they will primarily be used in business, government, military and research applications. For hobbyists, there are simplistic systems available. In general, the prices are decreasing and will continue to do so over the next decade.[19]

The U.S. Army currently uses small UAVs (SUAVs). These include systems such as AeroVironment's RQ-11 Raven, RQ-20 Puma, the less-common Wasp III and the Switchblade Lethal Miniature Aerial Munition System. SUAVs are typically hand- or rail-launched and can be either man- or vehicle-portable. Their increased size allows for more robust sensor packages and the possibility of weapons or other munitions to be attached. These larger systems would most likely remain primarily troop assets.

Micro aerial vehicles (MAVs) are smaller than SUAS and can generally be carried in an assault pack or rucksack. These vehicles include common commercial rotary configurations such as quadrotor helicopters. When launched, they have a range of five to 15 kilometers, a typical maximum takeoff weight (MTOW) of five kilograms and an average flight duration of one to two hours, depending on the payload and other factors.[20] MAVs have a significant advantage over SUAVs in their size and portability, and advantages over nano aerial vehicles (NAVs) in their duration, payload and operational range. Their typical five kilograms (11 pounds) MTOW allows many configurations of sensor modules. Examples of these include Aeryon's Scout, PSI Tactical's InstantEye and AeroVironment's Shrike. These would likely be a platoon asset. Their versatility would allow a platoon leader the freedom to use this enabler based on the requirements of his mission.

NAVs are smaller than MAVs. They could be transported in a container the size of a pouch, would have an operational range of one kilometer or less, a MTOW of 25 grams and a maximum flight time of an hour or less. NAVs give the most expedient feedback to the end user and require the least setup. Their limited capabilities best serve lower echelons such as teams and sections/squads. One example is the AeroVironment Hummingbird, which is designed to resemble and fly like a hummingbird.

A few other examples of these already exist, but the best known is the PD-100 Black Hornet, developed by Prox Dynamics. The PD-100 has already been

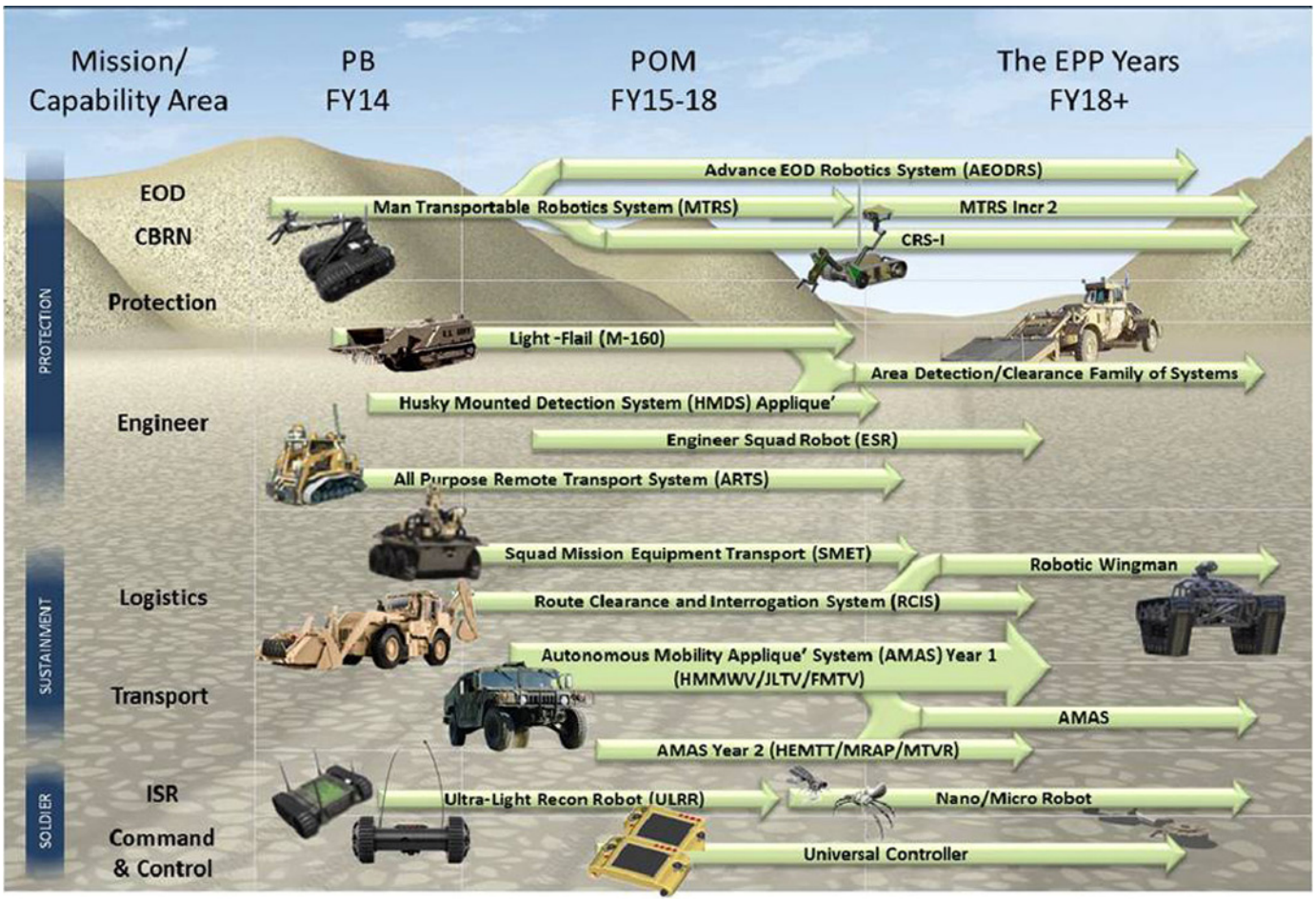

Figure 2. DoD unmanned systems roadmap for UGS (FY 13-38).

Figure 3. PD-100 Black Hornet. *(Photo by SGT Rupert Frere. United Kingdom Crown Copyright. Used by permission)*

in use in Afghanistan for several years, and feedback from the field has been positive.[21] The U.S. Army Natick Soldier Research, Development and Engineering Center (NSRDEC) recently selected the PD-100 to be its base model for the future Cargo Pocket ISR Program.

"The Cargo Pocket ISR is a true example of an applied-systems approach for developing new Soldier capabilities," said Dr. Laurel Allender, acting NSRDEC technical director. "It provides an integrated capability for the Soldier and small unit for increased situational awareness and understanding with negligible impact on Soldier load and agility."[22]

NAVs would best serve as section assets, where short-range tactical ISR is most necessary. For example, Soldiers manning an observation post could use NAVs to regularly supplement their patrolling capabilities.

Unmanned ground vehicles (UGVs) include wheeled, tracked or bipedal/quadruped vehicles of varying sizes and capabilities. The U.S. military currently uses several of these types of vehicles, including the Talon bomb disposal and Special Weapons Observation Reconnaissance Detection System tactical robots. Other nations have already developed UGVs for the purpose of battlefield surveillance, route clearance, breaching and resupply operations. Israel is now employing the Loyal Partner and Guardium UGVs, both tactical vehicles outfitted with sensors and capable of performing resupply operations.[23] In the United States, the Defense Advanced Research Projects Agency recently tested the AlphaDog Legged Squad-Support System, a robot pack mule capable of carrying 400 pounds of equipment or supplies for a distance of 20 miles to support dismounted Marines.[24] Meanwhile, the United Kingdom recently acquired the Terrier UGV, an excavating vehicle designed to breach obstacles or perform engineering functions.[25]

While large UGVs have the advantage of being able to carry more equipment and sensors, they also have the disadvantage of being large targets, making them easier to detect. As the technology behind the UGV improves, smaller vehicles may emerge similar in scale and capability to MAVs and NAVs. An example of this is the Raptor, a small biped robot capable of running 46 kilometers an hour and climbing over obstacles 100 millimeters high.[26] Another example is the Cobra MK2, a mini wheeled UGV by ECA Robotics used by the French army in Afghanistan, which is capable of outfitting various modules to meet mission requirements.[27]

Limitations and future research

The current capabilities of unmanned systems are degraded by several significant limitations.[28] These limitations are generally the focal point for current research, which will lead to the next generation of smaller and more capable systems.

Most significant among these is power for the systems.[29] Power solutions like engines or batteries require valuable weight, which significantly affects MAVs and NAVs. Power solutions such as hybrid power or fuel cells have been proposed and examined to overcome these challenges.[30]

The power discussion is often coupled with the weight problem. MAVs and NAVs have very specific payload requirements to maintain their capabilities. Even as miniaturization continues to make improvements to the technology, ensuring the vehicle meets its weight requirements will likely continue to be a limiting factor.

EW will be a challenge for remotely operating vehicles. Many unmanned systems operate along preprogrammed routes or are able to automatically return to a designated point in case of emergency or loss of signal. As new techniques for avoiding enemy EW are devised, it is likely that the enemy will also adjust its jamming capabilities to match.

Wind has a much more significant impact on MAVs and NAVs than SUAS or larger aircraft. Furthermore, it has a more of an impact on rotary-wing systems than fixed-wing systems.[31] "As you scale down, the air becomes thicker, basically, and it becomes much more of a challenge in terms of aerodynamic surfaces," according to Dr. Stephen Prior. "The degree of complexity is multiplied."[32]

Despite this, some researchers are rising to the challenge by imitating the capabilities of insects such as bees, flies and moths. The InstantEye, offered by PSI tactical, is designed as an all-weather MAV. It is capable of maintaining a video-feed lock on a ground target in 55 mph winds due to its ability to quickly recover from unexpected shifts in forces (i.e., a strong gust of

Figure 4. PSI's Tactical InstantEye.

wind or a collision).[33]

Miniaturization has its limitations. Some needed sensors may not be possible to scale down to NAV-size sensor platforms. In this case, it will be necessary to maintain both NAVs and MAVs until new breakthroughs can allow for further scaling down.[34]

The equipment is only as good as the Soldier. Good training will be essential to ensure that operators understand the capabilities and limitations of their systems before employing them.

Collision-avoidance capability is the next necessary technological requirement for MAVs, NAVs and UGVs.[35] Giving the unmanned system the autonomy to autocorrect course deviations or avoid objects will be necessary to reduce the impact of human error. Future NAVs would likely include smaller insect-sized vehicles, possibly capable of "swarming" an area to provide more abilities and feedback.[36] Collision-avoidance capability will be imperative to ensure the vehicles do not hit each other.

Conclusions

The possible tactical applications of unmanned systems to Cavalry squadrons are myriad as described by some of the proposed capability sets. They would fulfill or augment many of the Cavalry squadron's critical support roles as defined in the "2014 Cavalry Squadron Capability Review" whitepaper:[37]

- Improved ISR and CBRN payloads allow the squadron (and subsequently the brigade) to better identify opportunities and dangers, develop the situation in contact, determine enemy intent and provide time and space.
- More communications or reconnaissance capabilities will help facilitate transition to the brigade's main body or to one of the infantry battalions.
- Lastly, targeting, communications and offensive payloads enable the discriminate use of force. In turn, this can ensure freedom of maneuver and action, or create and preserve options for the brigade combat team (BCT) commander.

The future tactical benefits will outweigh the short-term research-and-production costs. The benefits of remote capabilities have already been demonstrated in Iraq and Afghanistan, resulting in a reduction in risk and Soldiers' lives lost. It has also resulted in improvements to the ground commander's situational awareness and faster decision cycles. Bringing unmanned systems to lower echelons will continue to increase their capability to successfully conduct reconnaissance-and-security operations. Technology that is currently available already supports this vision. Limitations to these systems can and will be overcome in time.

Unmanned systems are here to stay. Much like the rise of the cellphone, their prevalence on the battlefield will only increase as the technology proliferates and production costs decrease. As the next generations of unmanned systems evolve, they have the potential to change the way we think about warfare. It is in our best interest to get involved and shape the tactics that will make us successful in 2025 and beyond, instead of reacting to contact once the threat is here.

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Acronym Quick-Scan

BCT – brigade combat team
CBRN – chemical, biological, radioactive and nuclear
EW – electronic warfare
GPS – Global Positioning System
ISR – intelligence, surveillance and reconnaissance
MAV – micro aerial vehicle
MTOW – maximum takeoff weight
NAV – nano aerial vehicle
NSRDEC – Natick Soldier Research, Development and Engineering Center
SUAS – small unmanned aerial system
SUAV – small unmanned aerial vehicle
UAS – unmanned aerial system
UAV – unmanned aerial vehicle
UGV – unmanned ground vehicle

While other countries are veering away from heavy armor in favor of special-operations forces, the Russians are developing and purchasing new heavy-weapons systems: an estimated 5,000 by 2020. This article discusses the development and possible fielding of a new type of armored vehicle, a tank combat-support vehicle, to counter personnel with anti-tank weapons in both urban and field environments.

New System Preserves Armor Dominance of Future Battlefield: BMPT 'Terminator-2'

by CPT Charles K. Bartles and Dr. Lester W. Grau

The Russians do not view future war solely as counterinsurgency, counterterrorism and area control. The Russians view high-intensity maneuver warfare as an equally likely form of future war. Despite economic difficulties since the collapse of the Soviet Union, the Russians have developed three new tanks and are fielding two. During this same period, the United States has fielded none. The Russians consider tanks essential to warfighting, but for tanks to dominate the future battlefield, the tanks must survive.

Russia's recent announcement that the *Armata* heavy track chassis would be entering field trials as part of the T-14 main battle tank, and that the T-14 would be displayed in the annual May 9 Victory Day military parade, has fueled some speculation about what other weapons systems might be mounted on the *Armata* chassis. One idea is that the *boevaya mashina podderzhki tankov* (BMPT) "Terminator" could be reborn, but this time on an *Armata* chassis.[1] Despite the closeness of the acronyms, Russia does not classify the BMPT as an infantry fighting vehicle (*boyeva mashina pekhoty*, or BMP) but instead as a tank combat-support vehicle – sometimes referred to as a combat fire-support vehicle (*boyevaya mashina ognevoy podderzhki*, or BMOP).[2] The concept of a tank combat-support vehicle is not a new one in the Soviet/Russian experience.

Conventional and unconventional need for tank combat-support vehicle

In theory, mechanized infantry, self-propelled artillery and armored forces are mutually supporting. Artillery rains destruction to the front and flanks as infantry personnel carriers and dismounted infantry protect tanks from enemy anti-tank systems and enemy infantry. Simultaneously, tanks protect the personnel carriers and dismounted infantry from enemy tanks and strongpoints. In practice, personnel carriers have problems keeping up with fast-moving tanks; their armor protection is too thin to survive at the point of the attack; and battle drills between tanks and mechanized infantry frequently break down due to the lack of sufficient team training prior to combat. Artillery fire may be on or off target, or too early or too late. The bottom line is that there is often too great a gap between the tanks and the mechanized infantry at the crucial point, and artillery may not bridge that gap.[3]

In 1959, the Soviets decided to develop two types of infantry personnel carriers: tracked infantry fighting vehicles that would serve in tank divisions and cheaper wheeled armored infantry personnel carriers that would serve in the more numerous motorized rifle divisions. The BMP's tracked chassis offered better mobility and a better chance to keep up with the tanks. However, the tracked vehicles were more expensive to produce, operate and maintain.[4] The BMP was designed to serve as more than a mere battle taxi. Its armor protected the crew and infantry from bullets and radiation, and its armaments and firing ports allowed the vehicle to engage the enemy effectively without dismounting the infantry squad.[5] The BMP allowed the tanks and mechanized infantry to function as a mutually supporting team.

There were three main types of Soviet BMPs produced between 1966 and 1991. The basic BMP-1 is armed with a 73mm low-pressure cannon, an AT-3 Sagger anti-tank guided-missile launch rail and a 7.62mm coaxial machinegun. It has a one-man turret, and all weapons can be reloaded from inside the vehicle.[6] The BMP-2 entered service in 1980. The basic model has a two-man turret and is armed with a 30mm automatic cannon, a 7.62-mm coaxial machinegun and a launch rail for either the AT-4 Spigot or AT-5 Spandrel anti-tank missiles.[7] The BMP-3 entered service in 1987 and has a 30mm automatic cannon, a 100mm cannon, a 7.62mm coaxial machinegun and two 7.62mm bow-mounted machineguns.[8] The BMP-2 and BMP-3 have a significant antiaircraft capability against helicopters and low-flying, fixed-wing aircraft.

After the Soviet tank divisions were equipped with the BMP, the Soviets examined the composition of their motorized rifle divisions. The wheeled *bronetransportyor* (BTR) infantry personnel carriers were lightly armored and only carried a 14.5mm heavy machinegun. Clearly, they were not the

optimum vehicles to fight in coordination with tanks, and each motorized rifle division had a regiment of tanks. To upgrade the capability of the motorized rifle division, each division was re-equipped so that one of the three motorized rifle regiments had BMPs in lieu of BTRs. The tanks and BMPs always fought together on the main attack. Self-propelled artillery and self-propelled anti-aircraft weapons, such as the ZSU 23-4, accompanied the tanks and BMPs to provide a lethal, integrated combat team where each system provided mutual support. But technology is only part of the equation.[9]

The Soviet armored attack was a highly orchestrated lethal ballet. It was a ballet built around an artillery schedule where massed artillery was fired in phases, and the armor and mechanized artillery advanced behind a wall of sizzling shrapnel precisely in accordance with those phases. Battalion-and-below tactics were a series of simple battle drills that were repeated endlessly so that soldiers could perform them automatically and flawlessly when they were frightened, tired or had just been called out of the reserves after 10 years as a civilian. Tactics were rigid and provided predictability – a strong suit for an army that valued operational flexibility.[10] Artillery was key (and close). Self-propelled howitzers accompanied the attack and provided direct fire on resisting enemy strongpoints. Multiple rocket launchers were even used in direct fire against a particularly stubborn enemy. Helicopter gunships and fixed-wing fighter bombers served as a very mobile artillery in support of the advance throughout the depths. The enemy was the North Atlantic Treaty Organization or China – modern, industrial armies defending in-depth in predictable patterns.

Despite the impressive technology and tactics, tanks still tended to separate from BMPs and artillery during the

Figure 1, right. Views of the BMPT: front, side and rear. *(Photos copyright Vitaly Kuzmin, http://vitalykuzmin.net. Licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License)*

advance. The 1973 Arab-Israeli War proved the value of the rocket-propelled grenade (RPG) and anti-tank guided missile to the defender. Tanks had to fight as a combined-arms team to survive but could not afford to slow down and lose the momentum of the attack. The answer appeared to be better combined-arms training. In the late 1980s, the Soviets began forming combined-arms battalions (CABs), which had organic tanks, BMPs and artillery. The CAB allowed units to train for mutual support continuously instead of only during scheduled exercises. However, the CAB required seasoned commanders who could deal with the training, supply and maintenance demands of this complex unit. Soviet junior officers were usually younger and less experienced than their Western counterparts when they commanded at various levels — although they tended to command longer during a career. The CAB experiment initially failed due to its complexity, internal turmoil in the army and leadership challenges, but it is now a well-established institution in the Russian armed forces, being the most common formation type battling in Eastern Ukraine.

The proliferation of RPG-7 anti-tank grenade launchers and anti-tank missiles has complicated the task of tanks and mechanized infantry working together. An example of this is when the Russians entered the Chechen city of Grozny Dec. 31, 1994. The first unit to penetrate the city center was 131st "Maikop" Brigade. Russian forces initially met no resistance when they entered the city at noon. They drove their vehicles straight to the city center, dismounted and moved into the train station. Other elements of the brigade remained parked along a side street as a reserve force.

Then the Chechens attacked with RPGs. They first destroyed the Russian lead and rear vehicles on the side streets, trapping the unit. The tanks could not lower their gun tubes far enough to shoot into basements or high enough to reach the tops of buildings. Infantry fighting vehicles and personnel carriers were unable to support their tanks. Chechens systematically destroyed the column from above and below with RPGs and grenades. Other Chechens surrounded the force in the train station.

The commander of the Russian unit waited until Jan. 2 for reinforcements, but they never arrived. Part of his decimated unit broke out. By Jan. 3, 1995, the brigade had lost nearly 800 men, 20 of its 26 tanks and 102 of its 120 armored vehicles.[11]

The Soviet-Afghan War and the Chechen Wars emphasized the tactical gap for the Soviets and the Russians. The enemy was not modern, mechanized, nor arrayed in a defense in-depth. Their RPG gunners knew where the soft spots were on the various Soviet/Russian vehicles.[12] The terrain worsened the problem of the tactical gap and, in the areas where the tanks could go, tanks and BMPs were often separated and unable to support each other. In the mountains of Afghanistan, the tanks were often left behind, and the BMPs and BTRs had to accomplish an independent mission they were not designed for.

The Russians decided that the tactical gap between tanks and mechanized infantry is almost inevitable. The battle in Grozny on New Year's Eve 1994 provided the impetus to develop a heavily armored close-combat system. The Russians discovered that the thinly armored ZSU 23-4 self-propelled anti-aircraft gun was the optimum system for tank support in city fighting, but its vulnerability offset the efficiency of its four 23mm automatic cannons.[13] To ensure the survivability of tanks, they needed a new system that was built like a tank but provided mutual close-combat support. The new system should provide protection against enemy anti-tank weapons, infantry, strongpoints, helicopters and fixed-wing aviation. The new system needed to be an integral part of the armored unit, but it could not be a modern T-35 with five turrets and multiple weapons.

The Russian answer was the BMPT tank-support vehicle.[14] It was not a BMP, and the Russians were not discounting the value of mechanized infantry in the combined-arms team. They were recognizing that mechanized infantry may not be at the critical point at the critical time to support tank operations in traditional and urban combat roles.

BMPT's initial specifications

Russia's first BMPT was nicknamed the "Terminator" due to the anti-personnel capabilities of the system and was built upon a T-72 or a T-90S tank chassis.[15] The BMPT has the armored protection, maneuverability and ruggedness to maneuver directly with the tank platoon; has laminated and reactive armor; weighs 47 tons; and carries a five-man crew with a low-profile

Figure 2. The BMPT uses the Ataka missile to defeat heavily armored vehicles. *(Photo copyright Vitaly Kuzmin, http://vitalykuzmin.net. Licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License)*

turret, housing a 30mm automatic cannon with a coaxial AG-17D grenade launcher, an AT-14 Koronet anti-tank guided missile and a 7.62mm machinegun.[16]

Terminator-2

The most recent version of the BMPT has been renamed as a BMOP and nicknamed the "Terminator-2." Despite the name change, the Terminator-2 fulfills the same role as originally intended and was also built upon the T-72 or T-90S chassis. However, Russian Deputy Prime Minister Dmitry Rogozin, who oversees the Russian defense industries, suggests that the Terminator-2 could also be built upon Russia's newest heavy chassis platform, the *Armata*.[17]

The Terminator-2 is primarily intended to destroy personnel, anti-tank grenade launchers and anti-tank missiles, but it also has capabilities to destroy lightly armored vehicles, tanks, BMPs, fortified structures and low-flying aircraft. The system is equipped with:

- Dual 2A42 30mm automatic cannons with 1,700 rounds of ammunition capable of destroying lightly armored vehicles and low-speed air targets (2,500 meters) and anti-tank guided-missile systems, personnel and other unarmored objects (4,000 meters);
- A PKTM 7.62mm coaxially mounted machinegun with remote loader and 2,100 rounds of ammunition capable of destroying personnel and unarmored targets (1,600 meters);[18] and
- Two AG-17D automatic grenade launchers with 600 rounds of ammunition capable of destroying lightly armed targets (1,400 meters).

The BMPT's anti-tank capability comes from four Ataka-T guided missiles with general purpose (9M120-1F) and anti-tank (9M120-1) warheads (5,000 meters).[19] These weapons can reportedly clear the enemy from a city block at a distance of three kilometers.[20] The Terminator-2 has a five-man crew consisting of a vehicle commander, gunner, driver-mechanic and two grenadier operators. The vehicle is designed to let the crew fight from the safety of the vehicle and does not require any exiting for any weapons operation or routine reloading. All weapons systems are remote-controlled, and there is an optical system to assist the weaponeers with target acquisition. The vehicle has an aerosol capability (presumably smoke) to obscure its location from target-acquisition systems and, when lased, the commander's panoramic site will acquire the offending laser to readily direct fires. The vehicle's chassis will also permit the vehicle to be mounted with mine or obstacle plows to facilitate maneuver.

Figure 3. The commander's panoramic sight (located on the roof) gives the BMPT hunter-killer capabilities by continuously scanning targets for the gunner. *(Photo copyright Vitaly Kuzmin, http://vitalykuzmin.net. Licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License)*

Fielding BMPT

In 2007, the Russian Federation seemed well on its way to adopting the BMPT in some form. Nikolay Malykh, the general director of Uralvagonzavod, the company producing the BMPT, announced that the Russian Ministry of Defense (MoD) had agreed to purchase a company of BMPTs (nine or 10 vehicles).[21] This announcement would appear to bode well for the BMPT, as the acquisition and field-testing of a small number of vehicles is standard practice for the MoD before a large contract for a new vehicle is finalized. Although not specified, the BMPT would likely be placed on a T-90 chassis, as a tender for a large quantity of T-90S tanks was under consideration at the time.

Hopes for the fielding of the BMPT were dashed in 2010 when the Russian MoD announced that funding for BMPT had been cancelled. Initially, it was reported that cause of the cancellation stemmed from the Russian defense minister's (at the time, Anatoly Serdyukov) desire to build a more "Western" military. As the editor-in-chief of the magazine ***Natsionalnaya Oborona*** (***National Defense***), Igor Korotchenko, stated, "This is part of the military's trend toward buying Western models of equipment and technologies."[22]

In short order, the BMPT, BTR-90 and further T-90S tank acquisitions were all cancelled. In 2011, the T-95 Black Eagle program was cancelled, but the cancellation was attributed to the development of a new universal chassis, the *Armata*, which was intended to incorporate many of the T-95's features.[23] The real reason for the cancellation of the BMPT is anyone's guess – either due to the machinations of an unpopular defense minister or concerns that fielding a new vehicle on an older chassis would be unwise when a new chassis type was expected in the near future – but regardless of the reason, the BMPT program was dead in its tracks.

Despite this setback, Uralvagonzavod did not give up on the BMPT and began to look for customers in the export market. In 2012, Kazakhstan, a country with a post-Soviet Army that somewhat resembles the Russian military in

force structure and tactics, signed an agreement to purchase nine BMPTs on T-72 chassis, with deliveries starting in 2013.[24] Apparently, the BMPT was perceived as a great success, and in April 2014, Kazakhstan signed another contract with Uralvagonzavod to produce the BMPT in Kazakhstan under a licensing agreement.[25]

Rogozin suggested that the Terminator-2 could be built upon Russia's newest heavy chassis platform, the *Armata,* in 2013.[26] This statement could be seen as evidence that the BMPT program was not cancelled by Russian MoD but instead put on indefinite hold until a new universal chassis was put into production.

Doctrinal employment

If tank combat-support vehicles are integrated into the Russian order of battle, Russian force structure, tactics and doctrine will likely change for both tank and motorized rifle units. Conventional wisdom requires that tanks be supported by dismounted infantry while in urban settings to protect the tanks from anti-tank guided missiles. Unfortunately for the dismounted infantry troops, they are exposed to small-arms fire and explosives while providing this support. The BMPT could eliminate or reduce this need for dismounted infantry.

Although there have been claims that the BMPT has about the same combat power as six BMPs and 40 soldiers, the BMPT has not been free of controversy within Russian military circles. Pundits have been quick to point out that such a vehicle is inadequately armed to survive in high-intensity combat situations.[27] Although the improvements made to the Terminator-2 may alleviate some concerns, there is still some speculation about the value of the BMPT in general.

If the BMPT does find its way into the Russian arsenal, it will almost certainly be based upon the *Armata* chassis. Although tactical deployment of BMPTs with tanks are currently only in the theoretical stages for the Russian ground forces, some commentaries have suggested that a 2:1 ratio in urban environments and a 1:2 ratio in more conventional environments would be likely employments.[28]

Much has changed in the Russian ground forces since the idea of the BMPT was initially conceived; Russia has abandoned most regimental/division structures in favor of brigades.[29] Despite large-scale reforms of military units of brigade-size-level and above, there have been relatively few changes at lower echelons – especially at the battalion level and below, where little has changed since Soviet times. Since BMPTs are intended to support tanks directly and will be built on the same chassis as the tanks they support, they will almost certainly be organic to tank

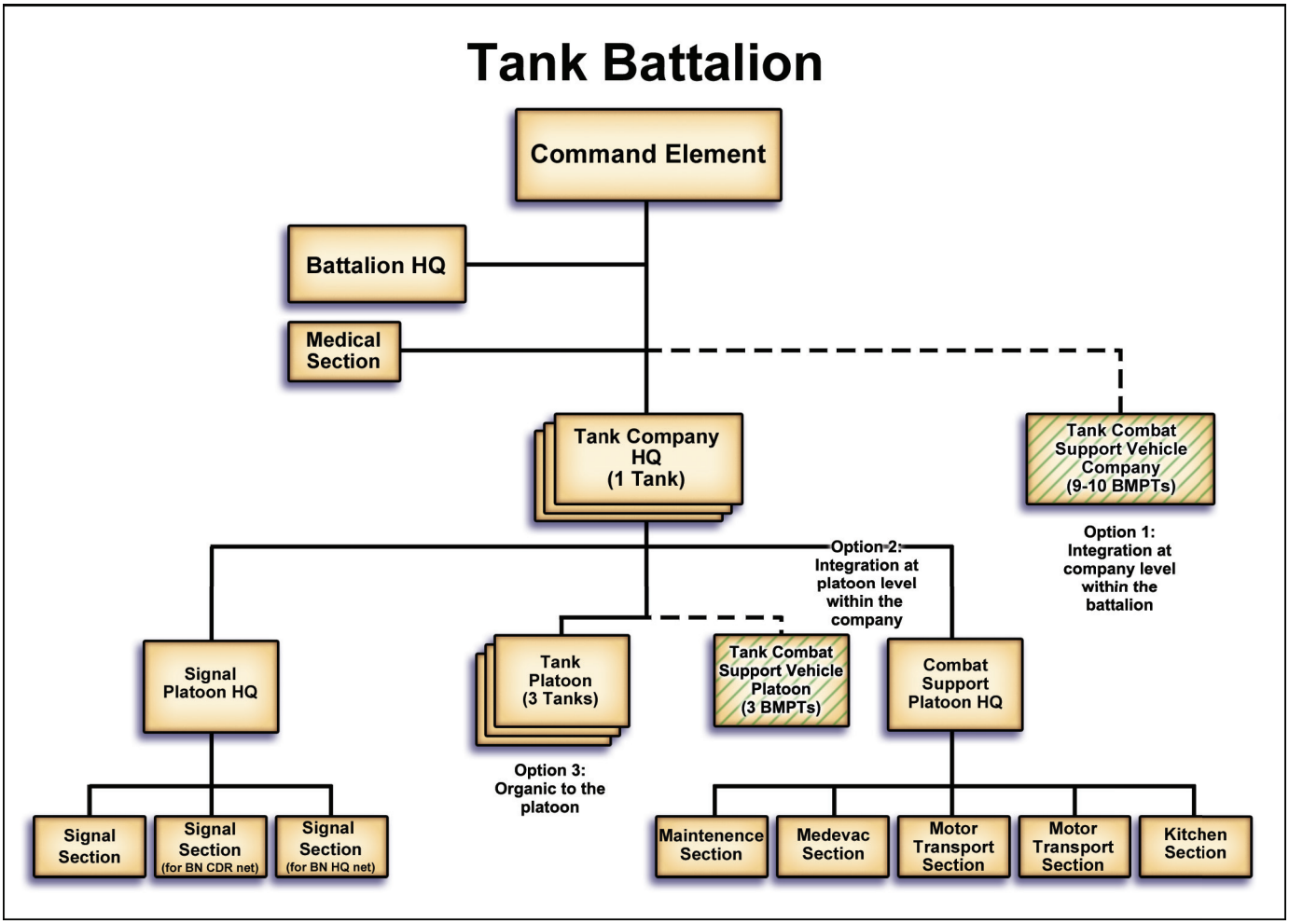

Figure 4. Possible tank-battalion organization. *(Graphic based on one created by the authors from information at http://www.soldat.ru/forum/viewtopic.php?f=12&t=15555&st=0&sk=t&sd=a&start=80#p83866)*

battalions to facilitate training and maintenance. Due to the ratio of tanks to BMPTs varying by environment, BMPTs will probably not be organic to the tank platoon itself (Option 3 in Figure 4) and will likely be found in a dedicated platoon in a tank company (Option 2 in Figure 4), or possibly company in the tank battalion (Option 1 in Figure 4), and will be attached to tank platoons on an as-needed basis. What is less certain is if Russia will simply add BMPTs to the current tank battalion's modified table of organization and equipment (about 32 tanks), or if the number of added BMPTs will offset by a reduction of an equivalent number of tanks.[30]

Conclusion

Just about a one year before Russia annexed the Crimea, GEN Valeri Gerasimov, chief of the Russian General Staff, outlined his vision of the future of warfare in a Feb. 26, 2013, article. In this article, Gerasimov sees the future of warfare as a blending of the instruments of national power to create favorable outcomes.

"In the 21st Century, a tendency toward the elimination of the differences between the states of war and peace is becoming discernible," he wrote. "Wars are now not even declared, but having begun, are not going according to a pattern we are accustomed to."[31]

This theory and Russia's actions in the Crimea and Eastern Ukraine have been dubbed in the West as "hybrid warfare." Interestingly, despite this new theory of warfare, Russia has chosen not to turn its back on conventional military capabilities in favor of special-operations forces, as many Western countries have done. Russia has even recently announced its intent to purchase 5,000 new armored vehicles before 2020.[32]

Russia's differing attitude toward conventional heavy weaponry can best be summed up by Ruslan Pukhov, director of the Center for Analysis of Strategies and Technologies: "Experience of military conflicts of late has graphically demonstrated that tanks retain their position as the backbone of any significant army and play a largely decisive role on the battlefield. Moreover, in connection with the development of 'mine warfare' and the improvement in anti-tank weapons, a kind of 'renaissance of armor' is to be observed now. … Today it is possible to speak of the start of a new stage in the development of heavy armored hardware connected with the paramount importance being attached to the requirements of protection achieved by the development both of constructive protection and of passive and active protection systems. Here a significant place is occupied by the adaptation of the design of tanks to operate in urbanized zones, with the result that demands have arisen to ensure all-round defense, the specific development of observation and fire-control systems, equipping with auxiliary armament, and so forth."[33]

From a Russian perspective, tanks and heavy armor do have a role in urban and "hybrid" warfare, and the BMPT is intended to further this end.

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Acronym Quick-Scan

BMP – *boyeva mashina pekhoty* (infantry fighting vehicle)
BMOP – *boyevaya mashina ognevoy podderzhki* (combat fire-support vehicle)
BMPT – *boevaya mashina podderzhki tankov* (tank combat-support vehicle)
BTR – *bronetransportyor*; literally, "armored transporter"
CAB – combined-arms battalion
MoD – Ministry of Defense
RPG – rocket-propelled grenade

Surrounded Again: The Successful Defense of 37th Tank Battalion at Arracourt

by CPT Jerry V. Drew II

While in command of Third Army's battle across France, LTG George Patton incorporated "no fewer than six corps and 42 divisions" into his operation.[1] Among these divisions, few battalions distinguished themselves as greatly as 37th Tank Battalion, Combat Command A, 4th Armored Division, XII Corps, which served at the head of Third Army's advance from the Normandy breakthrough July 25, 1944, until following the Battle of Arracourt Oct. 12, 1944.[2]

The Battle of Arracourt in its entirety was a series of offensive and defensive actions lasting Sept. 14-29, 1944. Within this larger action, the Arracourt Tank Battle, "one of the bitterest tank battles of the entire war," took place Sept. 19-22.[3] During the Arracourt Tank Battle, 37th Tank Battalion was successful because it maximized its adherence to what we now call the characteristics of the defense.

Eisenhower's 'broad front'

Before the Allied invasion of Europe, GEN Dwight Eisenhower, Supreme Allied commander, had decided on a strategy that would employ multiple army groups across the breadth of France.[4] This "broad front policy" required Field Marshall Bernard Montgomery's 21st Army Group to drive northwest from Normandy; secure the enemy V-2 rocket-launch sites that had continually harassed Londoners; occupy Belgium's airfields and deny their

use to the Luftwaffe; and open the deep-water port of Antwerp for Allied shipping – tasks that Eisenhower hoped would gain public support and allow the Allies to base air and resupply operations on the continent instead of from Britain.[5] Third Army, a part of GEN Omar Bradley's 12th Army Group, would send forces west from Normandy to secure the port of Brest, but the majority of its thrust would be across France south of Paris, passing through the Argonne region, crossing the Meuse and Moselle rivers in Lorraine, and entering Germany east of the city of Metz.[6]

Eisenhower hoped that a swift advance along a broad front would "complete the destruction of the enemy forces in the West" and allow the Allies "to strike directly into the heart of the German homeland."[7] Even Eisenhower, however, did not anticipate the speed with which his armored forces drove back the Germans.

Following the Allied invasion of Normandy, Patton had arrived in France July 6, with "thousands of his Third Army troops" arriving throughout the rest of the month.[8] Third Army, although operating during the breakout, became "officially operational" Aug. 1 and soon began its drive eastward.[9] Just one month later, Third Army had reached the Meuse River – "so rapid was the Allied advance and so complete the disintegration of the German field forces" that Third Army often had captured the Supreme Headquarters' objectives before it received the orders to do so.[10]

Timeliness of orders, however, was not the only problem Supreme Headquarters encountered. Due to the speed of their advances and the distances they had covered, the field armies had outrun their logistical support. On Sept. 2, Eisenhower ordered his commanders to "remain 'generally static' until enough gasoline and other supplies could be accumulated 'to permit Third Army and V Corps of First Army to move to the Siegfried Line and seize and hold that line with at least a part of each corps.'"[11] Until the gas arrived, Patton needed to keep his forces, with the exception of his Cavalry, west of the Meuse River.[12]

Nancy and Arracourt

On Sept. 4, Patton sent instructions to MG Manton Eddy, XII Corps commander, to move toward the Moselle River (at that point less than 10 miles beyond the Meuse), capture the town of Nancy and establish a bridgehead over the Saar River beyond that.[13] BG John Wood, 4th Armored Division commander, tasked COL Bruce Clarke and his Combat Command A (CCA) to "pass through the bridgehead of 80th Infantry Division with the objective of the high ground in the vicinity of Arracourt."[14]

CCA and its sister commands, Combat Command B (CCB) and Combat Command Reserve (CCR), were organizations analogous to a modern brigade combat team. These units were the division's "strike forces [and] were set up to control a number of combat units."[15]

Upon its arrival at Arracourt, 4th Division and its three combat commands were still on the offensive. The temporary halt at the Meuse River had slowed its operational tempo, allowing the German Fifth Panzer Army's LVIII Panzer Corps – with assistance from 113th Panzer Brigade and available

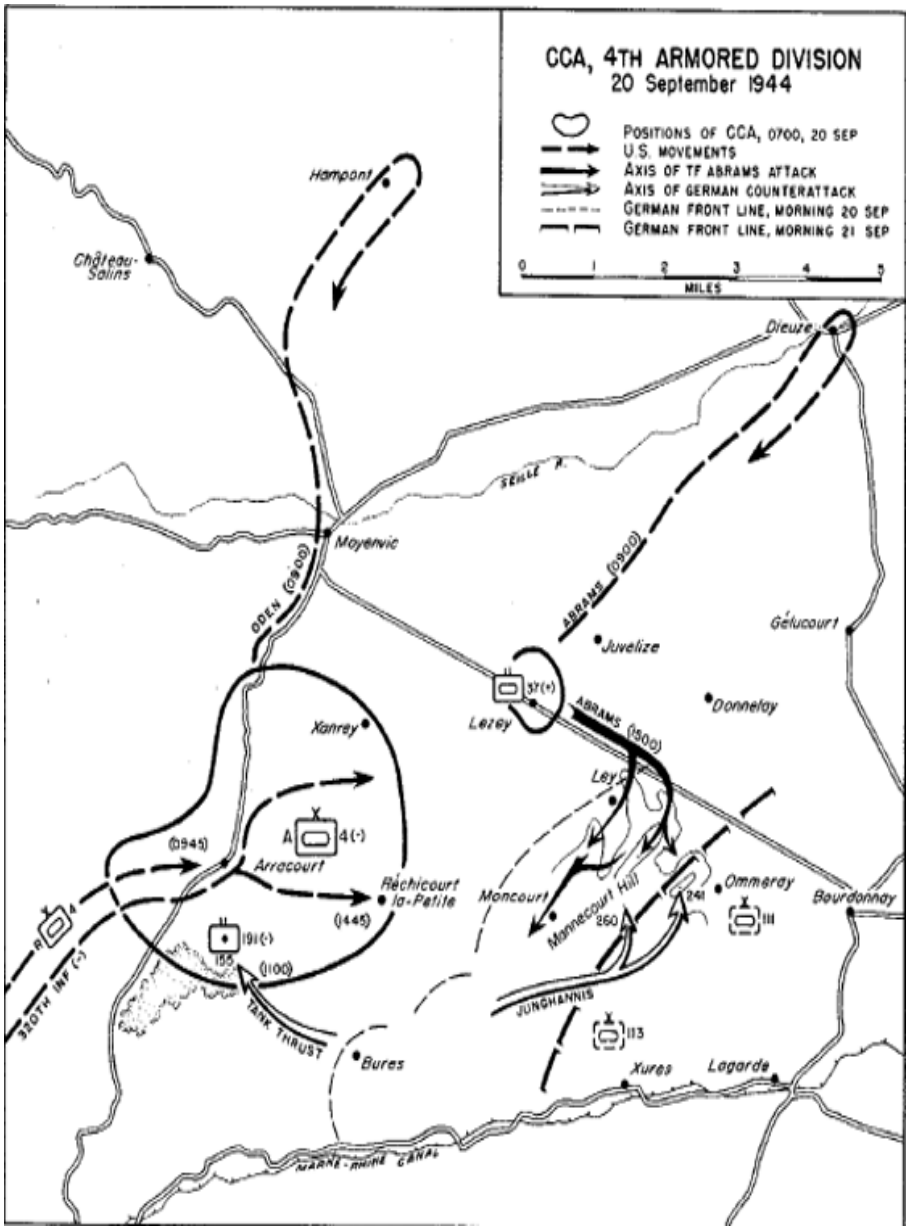

Figure 1. CCA's position's Sept. 20, 1944. The large German panzer counterattack sent expressly to stop the advance of LTG George S. Patton Jr.'s Third Army was defeated by elements of the U.S. 4th Armored Division at the Battle of Arracourt. *(From the U.S. Army official history* ***The Lorraine Campaign****.)*

troops of 15th Panzer Grenadier Division – to regroup and prepare a counteroffensive.[16] As Third Army's lead, 4th Division was the only unit that had successfully made it across the Nancy bridgehead before the counterattack came and isolated it from follow-on forces.[17]

On Sept. 14, CCA's mission "was to exploit the area around Arracourt – capture supplies and prisoners, establish roadblocks and ambushes, and secure key bridges."[18] The 37th Tank Battalion took the lead. LTC Creighton "Abe" Abrams, 37th's commander, "used his senior tank company commander to start the day's operations."[19] That commander was CPT William Spencer of Company A, a seasoned veteran who proved his worth multiple times throughout the Arracourt action and who earned the Distinguished Service Cross.[20] Spencer's company led the battalion toward Arracourt to seize the bridges that crossed the Rhine-Marne Canal.[21] At the town of Valhey, 37th "cleared the town of eight 88mm antitank guns and 300 Germans," then continued to its objective.[22]

By the next day, Sept. 15, German forces had recaptured the bridgehead from the Americans, effectively isolating 4th Division east of the Moselle.[23] Clarke sent forces to the west to aid 80th's fight for the bridge at the risk of thinning his own dispersed force.[24] Elements of Company B established blocking positions "to prevent Germans from escaping east out of Nancy.[25] CPT Richard Lamison's Company C "formed a combat outpost around the crossroads village of Lezey – between four and five miles northeast of Arracourt."[26]

Beginning Sept. 18, much of the rest of the 37th, including Spencer's Company A, was operating under the command of the battalion executive officer MAJ William Hunter. Hunter's task force had joined CCR in an effort to retain Luneville, a town about 10 kilometers south of Arracourt.[27] On the morning of the major German offensive that began the Arracourt Tank Battle Sept. 19, the 37th was conducting split operations.

Arracourt Tank Battle

CPT William Dwight, 37th's liaison officer to CCA, first realized his battalion was under attack shortly after 7 a.m. Sept. 19.[28] He returned to CCA headquarters, assembled a platoon of tank destroyers and prepared to defend the road leading to the 37th's positions.[29] After an intense engagement that left nine panzers and three of Dwight's four tank destroyers in flames, elements of the 37th arrived to rescue the survivors, including Dwight.[30] Dwight's actions delayed the onslaught but did not stop it. Upon realizing that an enemy penetration was imminent, Clarke called for CPT James "Jimmie" Leach of Company B to leave Chambrey and report to him at Arracourt.[31] Believing the message to be routine, Leach preceded his company, rendezvousing with an exasperated Clarke, who met him with "Where the hell is your company?"[32] The division artillery was already engaging "20 or 25" tanks, and upon the arrival of his platoons, Leach led a counterattack, causing the Germans to retreat over a ridge.[33] Company B lost three tanks in the engagement but sustained no casualties.[34]

Meanwhile, Company A received orders to depart the Luneville area "early on the 19th and arrived in the Arracourt area about [1 p.m.]."[35] With Companies A and B reunited, Hunter launched a counterattack on the Germans whom Leach had earlier driven behind the ridge and encountered "an assembly area of 15 to 20 Mark V Panzers."[36] With Company A fixing the enemy force, Company B "went around to the flank and ran right through the Panzer area firing, wheeled around and ran back through it."[37] Spencer lost three tanks, one of them his own, but the battle having culminated, he sent the rest of his company with Hunter to exploit the task force's success while he searched for survivors on foot.[38] He found eight men and led them "back to the battalion area ... arriving there with all of them about [10 p.m.]."[39]

Miraculously, Company B emerged from this counterattack unscathed. Leach would lead one more counterattack later that day, successfully preventing the Germans from capturing CCA's supply trains.[40]

The actions of the 37th were typical of what was happening throughout CCA's sector. Clarke – retaining his artillery near the center of the perimeter, massing his armored forces at the most vulnerable points and sending "quick forays out at night to hit the fortified enemy-held towns and return fast inside the perimeter" – maintained CCA's position.[41] The 37th engaged in multiple sweeps through the surrounding countryside to mop up remaining pockets of enemy infantry. When the 37th assembled near Lezey that evening, "49 blackened German tanks were smoking the sky."[42]

The 37th encountered the enemy again on the following day, Sept. 20. Task Force Abrams, consisting of 37th Tank Battalion and several attachments, moved toward the town of Dieuze, but upon hearing news of a tank attack at Arracourt, returned to clear the area.[43] Lamison's Company C encountered elements of the 111th Panzer Brigade reserve. Lamison "lost five or six tanks but inflicted about the same number of tank casualties on the enemy" before withdrawing and allowing Abrams to maneuver Company B against the remaining elements of the reserve.[44] Abrams then turned his attack "southward, taking Moncourt and then bivouacking with his main body back at Lezey."[45]

The 111th Panzer Brigade reared its head again Sept. 22. Combining direct fire from the tanks, indirect fire from CCA's artillery and P-47s from XIX Tactical Air Command, Abrams led 37th Tank and 10th Armored Infantry Battalion in the attack to recapture the town of Juvelize.[46] The mass of Task Force Abrams assaulted Juvelize while Spencer led the seizure of the "the hill at Les Trois Croix."[47] Company A's seven tanks attacked "22 enemy tanks. Company A lost one tank and destroyed 17; only five enemy escaped."[48] After seizing Juvelize, "only seven tanks and [80] men were left in 111th Panzer Brigade."[49] Thus ended what has become known as the Arracourt Tank Battle, but the larger Battle of Arracourt continued.

Elements of the German First Army attacked again Sept. 24, primarily against CCB's sector. The 37th Tank defended Juvelize a second time Sept. 25, but it enjoyed superior numbers and elevated positions overwatching the German avenues of approach; the 37th repelled

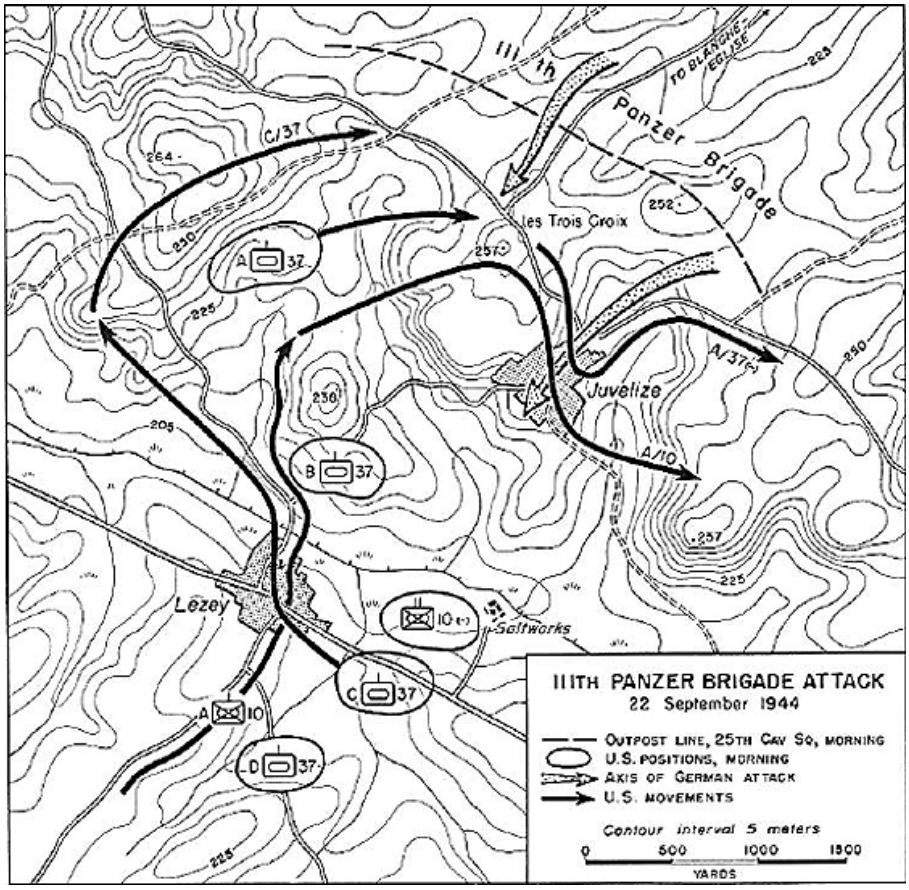

Figure 2. German attacks Sept. 22, 1944.

the assault with relative ease. At this point, the 37th was the furthest forward unit in Third Army. Attacks continued until Sept. 29, but 4th Division continued to attrit German forces until Fifth Panzer Army realized that it no longer had hope of recapturing the Moselle bridgehead. The 4th resumed defensive positions until becoming corps reserve Oct. 12 after relief by 26th Division.[50]

Textbook example

Following World War II, the actions of 4th Armored Division around Arracourt became textbook example of a successful mobile defense. The 4th achieved its aims through the employment of CCA, CCB and CCR. Within the combat commands, primarily CCA but also during actions while attached to CCR, the 37th maximized its use of the characteristics of defense: maneuver, flexibility, disruption, mass and concentration, preparation and security.[51]

Most important to 37th's success was its ability to maneuver and its flexibility. Maneuver is the "employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy."[52] The battalion remained flexible, adapting its plans to the situation at hand, often reacting to last-minute radio reports from forward positions or its artillery-spotting aircraft. Perhaps the clearest example of the importance of these two characteristics is the ad hoc counterattack by Hunter Sept. 19 in which he maneuvered both Companies A and B against the assembly of German Mark Vs. Abrams employed Companies B and C similarly the following day in the react-to-contact encounter in the vicinity of Ley, and even company independent actions such as Company B's attack to rescue the baggage trains depended on maneuver and flexibility for their success.

Second, mass and concentration remained critical throughout. When using mass and concentration, "defenders seek to mass the effects of overwhelming combat power where they choose and shift it to support the decisive operation."[53] The 37th displayed this characteristic whenever possible, but it was not always possible. Dwight's heroic procurement of four tank destroyers to fend off an approaching column of Panzers was a situation in which mass and concentration were not possible. The action around Juvelize, however, provides an example of the use of mass and concentration to great effect. Abrams not only massed an infantry battalion and a tank battalion at the decisive moment, but he incorporated the effects of the combat command's artillery and XIX Tactical Air Force's attack aircraft.

Juvelize also provides an instance of the defensive characteristic of disruption. Abrams did not pour all his forces into the decisive point at Juvelize, nor did all the action happen in a single engagement. Abrams knew that to be successful, he would have to integrate all assets at his disposal, including the terrain, to upset the "enemy's formation or tempo, interrupt his timetable or cause enemy forces to commit prematurely or attack in piecemeal fashion."[54] The CCA artillery and the attack aircraft were critical in disrupting the enemy attack throughout the task force's maneuver. Also, Company A's occupation of the Trois Croix, key terrain to the northeast of the city, disrupted the enemy on the approach with direct fire while Abrams' decisive operation achieved the seizure of the town itself.

In an operation in which German forces greatly outnumbered American forces, the 37th used operations in depth to great effect. Operations in depth are the "simultaneous application of combat power throughout the area of operations."[55] On Sept. 15, for example, elements of Company B were manning blocking positions east of the Moselle while Company C "formed a combat outpost around the crossroads village of Lezey – between four and five miles northeast of Arracourt."[56] Abrams and the 37th were covering the maximum amount of battlespace possible while still remaining responsive to CCA's needs. Three days later, Company B was operating near Chambrey while Company A was attached to CCR near Luneville, but both companies were able to converge on Arracourt when that became the most vulnerable

sector of the perimeter.[57] Being able to maneuver those companies via internal lines toward alternate engagement areas allowed 37th to fend off a disproportionately large adversary and defend a disproportionately large area. These were operations in depth well executed.

The 37th also used preparation throughout its operations. It had crossed the Moselle Sept. 14 and engaged in hostilities throughout the rest of the operation. Because the German counterattack had isolated 37th by the next day and because the vast amount of area that 4th Division defended required a mobile defense, preparations were not deliberate in the way they would be in a static defense. For example, no sources recount the establishment of dug-in platoon battle positions or reinforced mine-wire obstacles. As mentioned previously, maneuver was the most essential aspect of 37th's ability to defend successfully. Its preparation came in other forms – logistics and reconnaissance. During the early days of operating in Brittany, Clarke had learned what it required to continue operations while outpacing one's support system.[58] CCA always moved with its "supply trains attached, and supply trucks would always be overloaded by at least 50 percent. Seven days' rations on every tank for its crew became standard."[59]

Preparation measures also included reconnaissance by mounted forces and by aircraft. Radio reports from these elements allowed 37th to shift to the most critical parts of the perimeter in a timely manner.

Finally, 37th maintained its security. In the case of Arracourt, the primary means of security was aggressive patrolling and the use of mutually reinforcing positions. Security also came from the active employment of reconnaissance forces as a means of providing early warning. Because security also includes military deception, one final story from Arracourt bears recounting. Upon realizing the Germans were no longer able to recapture the Nancy bridgehead, Clarke made the decision to withdraw. Clarke accomplished the withdrawal of the 37th and the 10th by staging a fake battle, complete with sound effects, over the radio so that German intelligence could intercept it, but instead of the "blazing forward attack" the Germans expected, the 10th withdrew to a supporting position on the new perimeter, allowing for the withdrawal of the 37th to the rear.[60]

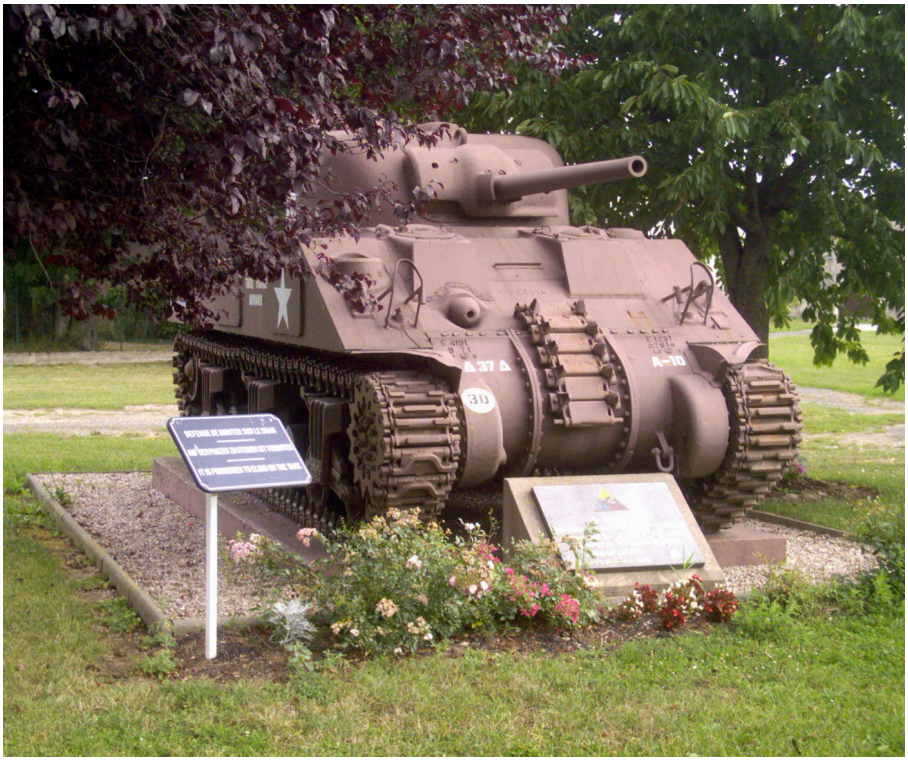

Figure 3. Commemorative monument at the battle site. *(From Wikimedia Commons)*

The actions of 37th Tank Battalion have become prime historical examples of the employment of the characteristics of the defense. Certain characteristics such as maneuver, mass and concentration, flexibility and disruption become more obvious in an examination of the conduct of 37th's operations as part of a mobile defense, but Abrams, Hunter, Spencer, Leach and Lamison certainly applied operations in depth, preparation and security considerations as well. The Battle of Arracourt covered a vast area and spanned more than two weeks. As such, it provides examples of nearly every type of military operation. The success of 37th Tank Battalion at Arracourt during the battle and afterward, however, was due to its ability to operationalize the characteristics of defense.

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Acronym Quick-Scan

ADRP – Army doctrinal reference publication
CCA – Combat Command A
CCB – Combat Command B
CCR – Combat Command Reserve

Understanding the Army Selection-Board Process

by CPT Adam L. Taliaferro

Preparing for a board begins with understanding how a Department of the Army (DA) selection board is conducted. A straightforward way to understand the board and deliberately prepare for it is to "know the terrain," "know the board member" and "know yourself."

Know the terrain

The Army board process is fair and objective. The DA Secretariat for DA Selection Boards is the organization that plans, coordinates and executes Active and Reserve Component promotion, command, school and selective continuation boards for officers and noncommissioned officers (NCOs). Among the Secretariat's major efforts are all Active Component promotion selection boards from sergeant first class to major general; Central Selection List for colonel and lieutenant colonel command, battalion and brigade-level command sergeant major; and key-billet positions in two-star headquarters and higher. The Secretariat also supports special selection panels, including the Voluntary Transfer Incentive Program, broadening opportunity programs and Active-Guard Reserve selection.

The critical member in the execution of these boards is the DA Secretariat board recorder. Board recorders interface with the Directorate of Military Personnel Management (DMPM) in Army G-1, Human Resources Command (HRC) and the voting board members to ensure a successful board outcome.

Boards conducted within the DA Secretariat use the Army Selection-Board System (ASBS), a computerized system that allows the board members to easily view and assess files. ASBS uses a scoring system that ranges from 1 through 6, with a + or – available for greater fidelity of votes between 2 and 6. The highest score a candidate can receive is 6+, and the lowest is 1. For example, in a board of 10 members, the highest score a candidate can receive is 60 with 10 pluses.

Rumors of board members wheeling and dealing are simply not true. There is no discussion allowed between board members, with the exception of general-officer boards. Files appear in random order to each board member, and board members vote at their own pace. Lastly, each board member's score carries the same weight, no matter his or her rank or professional background.

Evaluations should be written to clearly communicate to the board, not to the rated individual. Evaluations allow board members to assess an individual's performance and potential for promotion or selection. Evaluations should be written in a way that distinctly communicates the considered individual's potential. Certain trends can send an unclear message to the board, such as:

- Percentages that do not correlate to the senior rater's profile;
- Repeated use of the same or similar senior-rater narratives for multiple evaluations;
- Narratives that do not match the duty description; and
- Inconsistencies between the senior-rater narrative and box check.

Know the board member

On average, each board member will spend about two to three minutes on each file. That may not sound like a lot of time, but each board member has his or her own individual voting philosophy, paired with the board memorandum of instruction, that allows him or her to clearly identify key information to assess each candidate's file for selection. If you practice by evaluating your own evaluations, you will find that you can readily evaluate a file in two to three minutes.

On any given selection board, DMPM provides a legally approved matrix that covers composition for the particular board. The board will have a mixture of operations, force-sustainment and operational-support officers with varying backgrounds and experiences. There may be only one Armor officer board member; most board members evaluating your file will not have an Armor background.

NCO boards are similar but differ in that the board is broken into panels, with specific panel members voting on certain career-management fields (CMFs). For example, a master-sergeant promotion board will be divided into 11 Active Component panels. The 19-Armor CMF and 15-Aviation CMF are voted in the same panel, with aviation and Armor sergeants major as board members and a colonel as panel chief, who is also a voting member of the board. The branch of the colonel rotates between Armor and aviation every other year.

For the U.S. Army Sergeant Major Academy training and selection board, the panels are consolidated from 11 to five. One panel will consider Armor and Cavalry master sergeants for selection in addition to field artillery, aviation, air defense, military police, engineer, public affairs and chemical NCOs, with only one 19-CMF sergeant major as a board member. As in officer boards, most board members evaluating your file will not have an Armor background.

Board members have the ability to view your entire file, minus

the restricted portion, but they tend to focus on the senior-rater narrative, the senior-rater box check, senior-rater population size, rated officer's duty description and rater narrative. The lowest rank for an officer to sit on a board is lieutenant colonel, and the lowest-ranking NCO to sit on an enlisted board is sergeant major. Most of our board members are highly qualified, extremely experienced and have reviewed or written hundreds of evaluations, and they can see right through the fluff, vagueness and discrepancies sometimes seen in evaluations.

Evaluation write-ups should have universal language any board member could understand. Elaborating on branch-specific items – such as gunnery or reconnaissance operations – does not send a clear message to all board members on why the individual should be selected. Evaluations that provide officer or NCO numeration in relation to their peers greatly help the board in understanding the individual's performance and potential. Understanding how a leader performed relative to his or her peers sends a clear message, regardless of the board member's branch or background. Some boards are viewing more than 4,000 files during the board – when your file appears, you do not want that time being spent wondering what your senior rater was trying to communicate.

Know yourself

Your DA photo is your handshake to the board. It is the first thing the board member will see when viewing your file, and it sets the tone. Appearing unprofessional – whether looking overweight, not shaven, having a wrinkled uniform or not being in your Army Service Uniform – can have a detrimental effect on the evaluation of your total file.

View your myBoard file (MBF) and update your information. Your MBF provides you the information the board members will see. The board will sync ASBS to iPerms the morning of the board, so everything that is in your file will be seen by the board. Take the time to ensure your documents are accurate. Record-brief information should accurately reflect what is on your evaluations. Having entries like "known loss," "overstrength," etc., on your record brief can send a message to the board that you either don't care about your career or failed to take the time to ensure your file is accurate.

Letters to the board president should only be used by exception to explain unique circumstances. Letters explaining your awards, why you should be promoted or personal background can be seen as self-serving and send an unfavorable message to the board. For example, an officer who has been in Advanced Civil Schooling for the past three years and has not received an Officer Evaluation Report (OER) may choose to write a letter to the board explaining the period without an OER. When in doubt, speak to your assignment branch and trusted mentors to solicit their advice on including a letter to the board. If you submit a letter, it will be placed in your file.

HRC recently posted a mock-board leader professional-development (LPD) presentation at https://www.hrc.army.mil/site/assets/ppt/exportable_mock_board_pro_development.ppsx. Armor Branch strongly recommends that you take the time to review the video. LPD opportunities are also available at the DA Secretariat to actually see a board room and vote-template files, and board recorders are available to visit units to conduct board-process LPDs. The Armor Branch goal is to help you understand the promotion process to make yourself as competitive for your board as possible.

CPT Adam Taliaferro is serving as board recorder for the DA Secretariat for DA Selection Boards, HRC, Fort Knox, KY. Previous assignments include aide-de-camp for the commanding general, U.S. Army Cadet Command and Fort Knox; commander, Headquarters and Headquarters Troop, 3rd Squadron, 73rd Cavalry Regiment, 1st Brigade Combat Team (BCT), 82nd Airborne Division, Fort Bragg, NC; commander, Bravo Troop, 3rd Squadron, 73rd Cavalry Regiment, 1st BCT, 82nd Airborne Division, Fort Bragg; and executive officer and platoon leader, 4th Squadron, 73rd Cavalry Regiment, 4th BCT, 82nd Airborne Division, Fort Bragg. His military schooling includes Maneuver Captain's Career Course, Cavalry Leader's Course, Armor Basic Officer Leader's Course, Advanced Airborne School (Jumpmaster) and Basic Airborne School. He holds a bachelor's of science degree in economics from Middle Tennessee State University. His awards and honors include two Bronze Star Medals, Purple Heart, two Meritorious Service Medals, Combat Action Badge and Senior Parachutist Badge.

Acronym Quick-Scan

ASBS – Army Selection-Board System
BCT – brigade combat team
CMF – career-management field
DA – Department of the Army
DMPM – Directorate of Military Personnel Management
HRC – Human Resources Command
LPD – leader professional development
MBF – myBoard file
NCO – noncommissioned officer
OER – Officer Evaluation Report

REVIEWS

General Jacob Devers: World War II's Forgotten Four-Star by John A. Adams, Bloomington, IN: Indiana University Press, Gemini House, 2015, 438 pages with maps and appendices, $31.89.

Author John A. Adams' latest book brings to light the story of GEN Jacob Devers, a renowned World War II problem-solver seldom recognized for his achievements and accomplishments. His life spanned the military activities of the Army from horse cavalry to the atomic age. His impact on the development and employment of armored forces established the foundation for our current force structure. As such, this book will appeal to members of the Armor community.

Commissioned in 1909 from West Point, along with fellow classmates George Patton and William Simpson, Devers trained as an artillery officer. For the next several years, he served in a variety of tactical-level assignments.

He returned to the military academy as an instructor and coach of the baseball team, where two of his players were cadets Omar Bradley and Dwight D. Eisenhower. As the nation prepared to enter World War I, Devers was assigned to Fort Sill, OK. There he prepared artillery units for combat and participated in research-and-development efforts. He witnessed no combat in WWI; however, his drive and enthusiasm earned him high praise.

Devers' interwar schooling allowed him to absorb lessons on organization and problem-solving as he honed his leadership style. By 1940, he led 9th Infantry Division. As Adams points out in some detail, he was charged with developing both the division and Fort Bragg, NC. His interaction with civilian contractors, labor unions and the War Department are clearly laid out as Devers implemented his guiding principle to "Treat men as men, don't coddle them. Think before you act, but having thought, *act*."

And act he certainly did as both the division and the installation grew into exemplary organizations that reflected his leadership and managerial skills. It is interesting to note that the author does not hesitate to explain that while Devers assembled a great deal of objective data before he acted, occasionally he would "bridge across some fact he did not command … and guess wide of the mark." Several examples are presented that demonstrate Devers should have better prepared himself before making a decision. Those poor decisions had ramifications that troubled several of his activities.

Following the death of GEN Adna Chaffee, Devers assumed command of the Armor Center at Fort Knox, KY. This area of the book presents Devers' uncanny ability to rapidly recognize the critical objective and move toward solving the problem at hand. As such, he became the driving force behind the organization of a combined-arms team, development of the M-4 Sherman tank, mobile artillery and tactical-employment doctrine.

The author discusses the Devers-led M-4 Sherman group that addressed such topics as industrial production capability, the speed of manufacturing, ease of maintenance, shipping weight and effect of weight on European roads. This analysis allowed him to successfully stop the heavy-tank program and proceed in developing the M-4 Sherman. Adams also includes an interesting review of the pros and cons of diesel- and gasoline-fueled tanks.

At GEN George C. Marshall's command, Devers moved to the European Theater of Operations when Eisenhower went to the Mediterranean theater. A fascinating examination highlights the differences between these two men. While both brilliant and capable, they had different approaches to problem-solving.

Adams relates that Eisenhower carefully assembled information from many sources, looked at the alternatives and came to deliberate conclusions. On the other hand, Devers looked over the situation, often shot from the hip, came to a rapid conclusion and then cut through whatever stood in the way of rapid action.

These two distinct approaches clashed on several occasions. By the time Devers assumed command of 6th Army Group, Eisenhower and his staff treated 6th Army Group as an "unwanted and ugly stepsister to whom nothing was given and nothing was expected."

Disagreements with Eisenhower, Bradley and their respective staffs are presented in a balanced and informative style. Reasoning behind the decisions and actions such as the early crossing of the Rhine River and reduction of the Colmar Pocket are thought-provoking. The trials and tribulations of dealing with the political and military strengths and weaknesses of the Free French Forces assigned to 6th Army Group are detailed. The tense relationship among the Allies because of the Battle of the Bulge and the subsequent German Nordwind operation against 6th Army Group provide insights into decision-making, massive troop movement and tactical employment, along with details on the logistical burden of Allied countermoves.

Throughout the war the author notes, "Devers was bright, empathetic to other people, incredibly optimistic and boundlessly energetic. He got things done and had Marshall's solid backing." As the war concludes, Marshall intervened and recommended Devers' promotion to full general ahead of others endorsed by Eisenhower. This was a fitting conclusion to a brilliant performance by Devers in war and peace.

General Jacob Devers, World War II's Forgotten Four Star is an interesting and well-written book on a commander who espoused that "commanders of armored units must be bold, aggressive men who waste not a minute." Fittingly, it should have a prominent place in the professional library of the maneuver branches' members.

D.J. JUDGE
COL, U.S. Army (retired)

Maximize Training Time: Using Physical Training to Increase Tactical Training Proficiency

by LTC Esli Pitts

"Guidons, guidons, guidons. This is Black 6. Short count follows. Three, two, one. Crank 'em. Report REDCON."

"Black 6, Red 4. REDCON 1, Slant four."

"Black 6, White 4. REDCON 1, Slant four."

"Black 6, Blue 4. REDCON 1, Slant three."

The commander acknowledged each report in turn and then continued: "Guidons, Black 6. Execute Route Iron. Company column, order of march: Red, White, Blue. Move now."

In sequence, the platoons pulled out of the company assembly area and started movement. In turn, they called start point (SP) on Route Iron, and then release point (RP) two blocks later. On the line of departure (LD), Red 1 called the fire-support officer (FSO): "Black 70, this is Red 1. Fire AB1003, over." The FSO acknowledged and eventually called shot and splash. Smoke billowed, and the company quickly crossed the open ground and moved into Battle Position (BP) B11. The executive officer reported "set" to the battalion tactical-operations center (TOC), while the platoon leaders briefed their target reference points (TRPs), sectors of fire and alternate and supplementary BPs, and proofed their BPs.

Minutes later, Battle 5 reported "established" to the TOC. The company had barely backed into turret-down positions when the battalion command net crackled with an intel report. "Guidons, guidons, guidons, this is Warhorse 2. Scouts report tanks and PCs five minutes from Phase Line Orange." Battle 6 relayed the spot report, and so did the platoon leaders.

The company was in a perfect position to engage the enemy from the flank. Based on the compartmentalized terrain, it would be a platoon-level fight – and it wasn't long before the fight happened. White Platoon saw the enemy first and reported contact. "Black 6, this is White 4. Contact tanks and PCs east, out."

At the same time, White 1 gave his initial fire command. "White, White 1. Tanks and PCs front. Frontal. Two rounds sabot. At my command." He paused for a minute before announcing "Top-hat." He looked left and right to confirm that the other crews had moved up into firing positions. "Ready … ready … fire!" Boom! The platoon fired a volley.

At the other end of the field, the members of Bravo Company's headquarters platoon returned fire and then ran into Red and Blue platoons' engagement areas (EAs). The headquarters platoon's Soldiers, role-playing the enemy, pressed their attack on Battle's exposed flank and forced White to reposition to supplementary positions. Red was conducting muzzle-reference sensor (MRS) updates by section while Blue Platoon, having neglected to move to their alternate BPs, was receiving effective "red rain" on its position.

Battle 6 waved to the training-room Soldiers, and they displaced to the other end of the field to prepare for the company's counterattack and then a hasty defense (HDEF). When it was over, the leaders ran back to the company while the company commander discussed the training.

Maneuver PT

How many of you have lamented that you don't have enough training time? How many of you have struggled to shake out reporting requirements? Cross-talk? Basic radio procedures? Who has wondered why your subordinates don't understand the basics of maneuver? Assuming you are committed to doing physical training (PT) every day, there is a way to get 60-90 minutes of training as often as you like: maneuver PT.

Why run your platoon in a 4x4 or 4x8 formation when you can run them in a wedge, column, line or echelon? Why do sprints when you can do bounding overwatch? Having run maneuver PT as a squad leader, company commander and battalion commander, I am here to tell you that not only will you get a good workout in, but you can also increase the basic proficiency of your entire formation in communications, reporting, cross-talk and integration of both direct and indirect fires, and you can work on any battle drill you desire. Maneuver PT is as much or as little as you desire to make of it.

I started doing maneuver PT as a squad leader. Assigned to the Old Guard, we did not get enough time in the field, with the result that we were not the most tactically proficient. I began to use PT as an opportunity to maneuver the squad. Mostly I did it for fun and to alleviate the boredom of running in a squad file everywhere, but it worked well to rehearse cross-talk, reporting, movement formations, movement techniques and basic battle drills.

As a company commander, I was stationed at Ray Barracks, Germany. The unit had just spent a significant amount of time in Bosnia and then Kosovo, and lacked maneuver proficiency. We also lacked enough training areas. Our local training area was barely enough to train at the section level. We couldn't really train on mounted maneuver except at Grafenwoehr or Hohenfels. How could I prepare my company for our upcoming rotation at the Combat Maneuver Training Center (CMTC)[1] without a training area? The answer was maneuver PT.

The rules were simple. First, whatever you had to say, you had to say it as a simulated radio transmission. If you saw a static tank on display, you treated it as an enemy tank. If it was a random humvee driving around, it was an enemy *boyevaya mashina pekhoty* (BMP). If it was Soldiers in Army

Combat Uniforms (ACUs) during PT, they were enemy troops. If you were scanning, you were doing squats. If you were firing, you were doing pushups. If you were moving from a turret-down to hull-down firing position, you sprinted. Each mission started in the platoon coil or company tactical-assembly area (TAA) with the tanks shut down. We would go through a short count and come to REDCON 1 before uncoiling and moving into the lane. Once in the mission, we would run in wedge, file, line, echelon or other formation as directed by the platoon leader. He would also select movement techniques and conduct drills as necessary when we were in contact or in response to my cues.

Application then

I designed basic operational graphics that would move us around Ray Barracks. We began with the three platoon leaders playing three of the four tank commanders in a single platoon, with my executive officer serving as the platoon sergeant and reporting to me as the commander. I would also use him to practice reporting to battalion. In this way, I trained my platoon leaders in how to fight their platoons. After we reached proficiency at platoon level, we began to conduct training as a company. Again, with myself and the three platoon leaders, as well as the executive officer, we rehearsed crosstalk, reporting, movement techniques, direct-fire-control measures and battle drills. To push this knowledge down, periodically I would use one day as a rehearsal for the platoon leaders, and then they would run the same mission with their platoons the next day.

One time, over the course of three days, I conducted a full company defense. On the first day, I conducted a leader's reconnaissance with the platoon leaders, and we identified the EA and assigned sectors of fire, etc. On the second day, the platoon leaders moved their platoons from assembly areas into their BPs and conducted platoon rehearsals. The platoons started with a short count in the TAA and then rehearsed occupying their primary, alternate and supplementary BPs. They also rehearsed platoon fire commands and platoon volleys. At the end, they collapsed back into hide positions and then returned to the TAA.

On the third day, the entire company formed up in the parking lot, by tank crew, in a perimeter. Using radio transmissions, we brought the company to REDCON 1 and moved them down to the large open field we would be defending, then occupied hide positions. The platoons moved forward and established their platoon BPs and rehearsed them, with lots of sprinting and pushups to be seen.

While that was going on, the first sergeant arrived, and each of the platoons executed logistics package (LOGPAC), one section at a time. Not having done a company LOGPAC, this was invaluable. As they arrived at the LOGPAC, my representatives met the sections, who would execute LOGPAC as my representatives talked them through the process. For example: "You are refueling right now; do flutter kicks. Make sure you have goggles, gloves and fire extinguisher, and the vehicle is grounded!" Those sections not conducting LOGPAC were conducting exercises of their own choosing.

After LOGPAC, the headquarters platoon circled around to the far end of the field and replicated the enemy's lead echelon, then circled around to "attack" again as the enemy's main body. There is not much in the headquarters platoon, so the target array isn't big, but it would not die. Instead, they continued to move across the field, allowing the tank platoons to execute platoon volleys. Periodically they dropped and did their own pushups as they fired at us. The target array and contact required the platoons to displace to alternate positions and manage MRS updates, as well as report battle-damage assessment, Class V consumption and target handoff among

<table>
<tr>
<td><u>SKILLS/TTPs</u>
-Short count
-REDCON 1
-Slant
-Build EA:
TRPs/sectors of fire
Routes
Alt/supp positions (PSNs)
Confirm deadspace
Set/established

Fight platoon
-Top-hat/Low-sky
-Platoon fire commands
-Fire patterns:
Front
Depth
Cross
-Class V cross-level
-MRS update
-Alt/supp BP
-Backing up LOGPAC</td>
<td><u>DRILLS</u>
-Action drill
-Contact drill
-Missile drill
-Survivability moves
-Nuclear-biological-chemical
-Dynamite:
Passive
Active
-Defile
-Breach/SOSRA
-Trench</td>
<td><u>MOVEMENT/MANEUVER</u>
-Column
-Wedge
-Vee
-Echelon (left/right)

-Traveling
-Traveling overwatch
-Bounding overwatch

-Coil/uncoil</td>
</tr>
<tr>
<td colspan="3"><u>ACTIONS ON CONTACT</u>
-Deploy and report
-Develop situation
-Recommend course of action (CoA)
-Execute CoA</td>
</tr>
</table>

Figure 1. Training tasks focusing on basic platoon maneuver.

platoons as the enemy moved laterally across the EA.

During a rotation at the CMTC at Hohenfels, I was attached to a mechanized-infantry task force. During that rotation, my company killed more enemy than the rest of the task force combined. Not because we were any better, but because we had trained more. Without having any more time in the field than the other companies or battalions, we had already learned many of the lessons on cross-talk, reporting and the fundamentals of maneuver that other units needed the first week or more of the CMTC rotation to learn. In an era of reduced budgets, coming out of large-scale peacekeeping operations in the Balkans, and with limited training time, we had nonetheless learned how to fight.

Application now

So how does that compare to today?

Assuming command of a combined-arms battalion in 2012, I took stock of the leaders in the battalion and quickly realized that the bulk of the knowledge in mounted maneuver resided in … me. My rifle-company commanders had been light infantrymen serving in Afghanistan. My tank-company commanders had been light reconnaissance, surveillance and target-acquisition platoon leaders serving in Afghanistan. My first sergeants and platoon sergeants had maybe done some heavy-maneuver training as privates and had shot a gunnery or two while spending the bulk of their time in Iraq.

How would we train?

I took a week with the company commanders, training them in how to maneuver a mounted platoon. I conducted PT with them every morning while they played tank or Bradley commanders in a single platoon. I had a specific set of collective tasks I expected them to learn focused on basic platoon maneuver (Figure 1). I then built a basic scenario in which a platoon would establish an HDEF and then counterattack (CATK) through the enemy and establish another HDEF (Figure 2).

Key to success is finding good terrain on which to train. For example, an elevated helicopter-landing zone in an open field served as a perfect intervisibility line from which to conduct a platoon defense with berm drills. Each morning, I would briefly review the tactical skills and tactics, techniques and procedures (TTPs) with the company commanders in "the assembly area." For example, what is a short count, and what does it sound like? Or how does a platoon occupy a coil from a column or wedge without stopping? Then we would start running.

The rules were similar to my previous model when in company command. If you are scanning, you are doing squats. If you are firing, you are doing push-ups. If you see static armored vehicles, take actions on contact and develop the situation. My emphasis was on battle drills, repetition and execution of simple plans at the hasty level of detail, where I put leaders in a variety of situations. In the following week, they

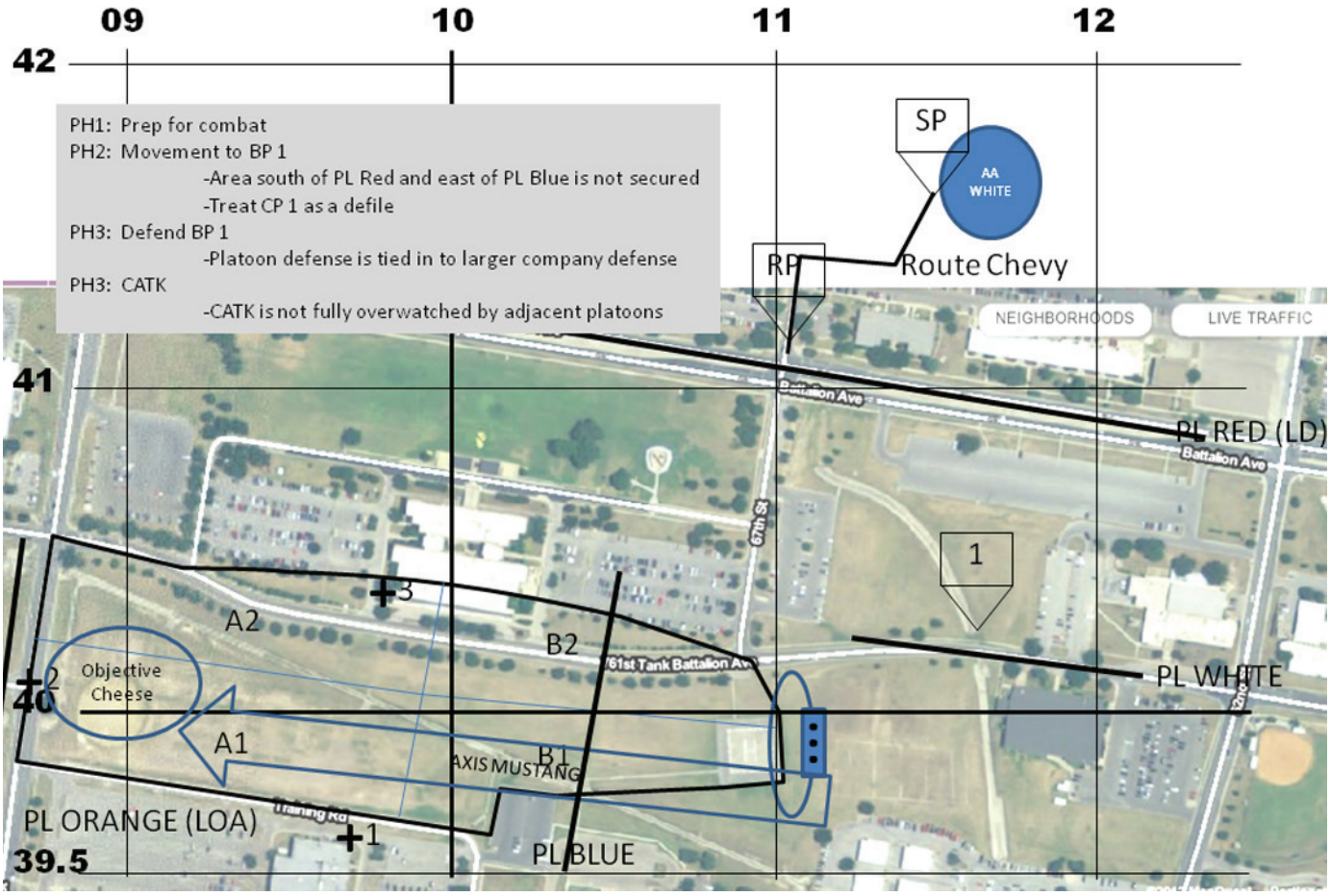

Figure 2. Platoon graphics.

provided the same instruction to their platoon leaders, and from there, the platoon leaders were free to use it with their platoons if they chose. I did not mandate they do so, but it was evident to me who did so based on their performance during actual mounted maneuver.

After reaching a basic level of platoon proficiency, we switched to training as a company with one commander leading the company and the other three serving as the platoon leaders in a task-organized company/team. Again, we trained on specific tasks and, as with the platoon-level maneuver, I developed operational graphics laid over specific terrain in Fort Hood's garrison areas that supported my training objectives (Figure 3). For example, I added a narrow sidewalk between two buildings to facilitate a defile drill. Random low railings or barriers worked well as obstacles against which to practice breaches using *suppress, obscure, secure, reduce* and *assault* (SOSRA). Before each of these training runs, I would run the route myself and rehearse what contact and drills I would inject.

We were notified we would be participating in a decisive-action training environment rotation at the National Training Center (NTC), but we didn't have a lot of training time to prepare for it. Maneuver PT became the way for me to train the battalion's leaders prior to our rotation, and, following that, to train a second set of officers in platoon and company maneuver. Here are some specific examples of maneuver PT I used to develop proficiency in mounted maneuver:

Before NTC, I realized the need to train on the basic tasks of uncoiling, conducting a tactical roadmarch and conducting a refuel-on-the-move (ROM). One morning for PT, that's what we did. Not a lot of pushups or squats, but we built an assembly area, a roadmarch route and a planned ROM location. I established an RP after the ROM, at which point companies could break off and finish PT on their own. In execution, my S-3 learned how to control movement out of a battalion TAA; the support company learned how to establish a ROM site; and the vehicle commanders in the line companies and specialty platoons learned how to conduct ROM.

After our return from the Leadership Training Program (LTP) prior to our NTC rotation, we revised the operations order (opord) we had prepared for LTP such that it fit the terrain on Fort Hood. We issued the order and then conducted a battalion movement-to-contact (MTC), culminating in an HDEF,

SITUATION: Task Force (TF) Warhorse conducts MTC in zone to destroy enemy advanced guard main body (AGMB). Upon identification of the AGMB, the lead company will establish a defense and allow the TF to maneuver to destroy the AGMB. Enemy recon elements are currently in zone. TF scouts are currently set in OPs on PL White observing EA Hammer.

Company/team task and purpose:
T1: Conduct MTC PL Tan to PL Blue
P1: Destroy enemy reconnaissance
T2: BPT HDEF EA Rock
P2: Destroy enemy main body
T3: DEF EA Hammer
P3: Destroy enemy main body

Requirements:
1. AA procedures/radio/reporting
2. Company scheme of maneuver
3. Conduct defile drill
4. Develop offensive direct-fire-control measure (DFCM) plan
5. Develop defensive DFCM plan
6. Conduct in-stride breach
7. React to contact

Resources:
-1x company/team (2 of your own, 1 attached platoon)
-2x field-artillery targeting and 2x mortar targeting; priority of fires
-1x tank plow, 1x roller

Coordinating instructions:
1. M1s and M2s are what they are
2. Other armored vehicles are enemy
3. Humvees are BMPs
4. Soldiers in ACUs are enemy dismounts (disregard traffic-control points)
5. Concrete or plastic barriers are obstacles

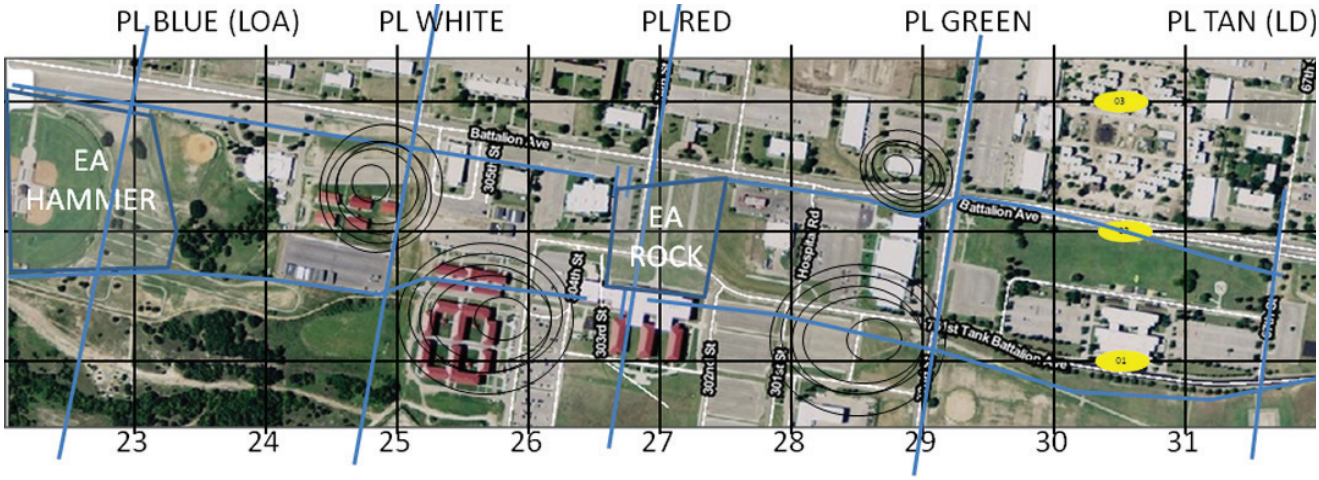

Figure 3. Company MTC.

for PT. The audience was vehicle commanders for line companies, specialty platoons, tactical command post (CP) and TOC. My S-2 provided opposing force (OPFOR), wearing battalion PT shirts and armed with green chemlights, which indicated specific threats. For example, a chemlight buzzsaw indicated a Hind helicopter. (See Figures 4 and 5 for the MTC and the battalion's HDEF.)

As I'd found with company command, despite limited ability to train in real-live mounted maneuver before a combat-training-center rotation, our efforts at maneuver PT allowed the unit to get ahead of the power curve. Going to NTC, we already understood how to cross-talk and report. We understood the steps to actions on contact and how to conduct basic battle drills. We knew which radio nets would be used for what, and who was responsible for them. The platoons, companies and battalion knew how to maneuver and fight, and how to call for fires. We also validated the battalion's tactical standard operating procedures (TACSOP) and inculcated maneuver tasks at the platoon level. We did not have to spend the first week of the rotation trying to shake these things out, and I'm pleased to say that the results showed in dead OPFOR.

Following NTC, the inevitable change of leadership occurred, and now I had a new set of officers to train, including new field-grade officers. Again, I spent time with the company commanders, focusing on the new ones, as well as adding captains in the S-3 shop, while the older commanders were able to take the experience to another level of detail. They, in turn, trained their new platoon leaders.

Operation Warhorse Strike

In the most ambitious instance of maneuver PT, we conducted Operation Warhorse Strike, a battalion nodal attack. Taking the long view of PT, I extended the hours and, unlike previous events, put every available Soldier in the battalion "into the field" for a three-hour long battalion attack to seize two assigned objectives in my own footprint: the battalion headquarters and one of the line-company CPs. Unlike previous events, which focused on battle drills and the fundamentals of maneuver, I went through a full military decision-making process cycle, issued an opord and conducted a confirmation brief, backbrief and rehearsals. The companies also conducted troop-leading procedures.

On the morning of execution, all mission-command nodes were fully operational, and the mortar platoon was established in the motor pool in its tracks. (It would be up to them to get PT in a different way.) The scouts were out, and the medics were prepared to establish an aid station on the objective. The forward-support company was prepared to provide backhaul of enemy prisoners of war using a Light Medium Tactical Vehicle. Company first sergeants were mounted in humvees and able to use some limited routes to assist in casualty evacuation. The S-2 shop fielded a large force of OPFOR and contingency operating bases, manned as appropriate with weapons and cellphones. Unlike normal maneuver PT in PT uniform, this was a complete dismounted operation with all Soldiers wearing their gear, and all radio nets established and operational.

Afterward, we conducted an after-action review, and then the following month, we issued a fragmentary order

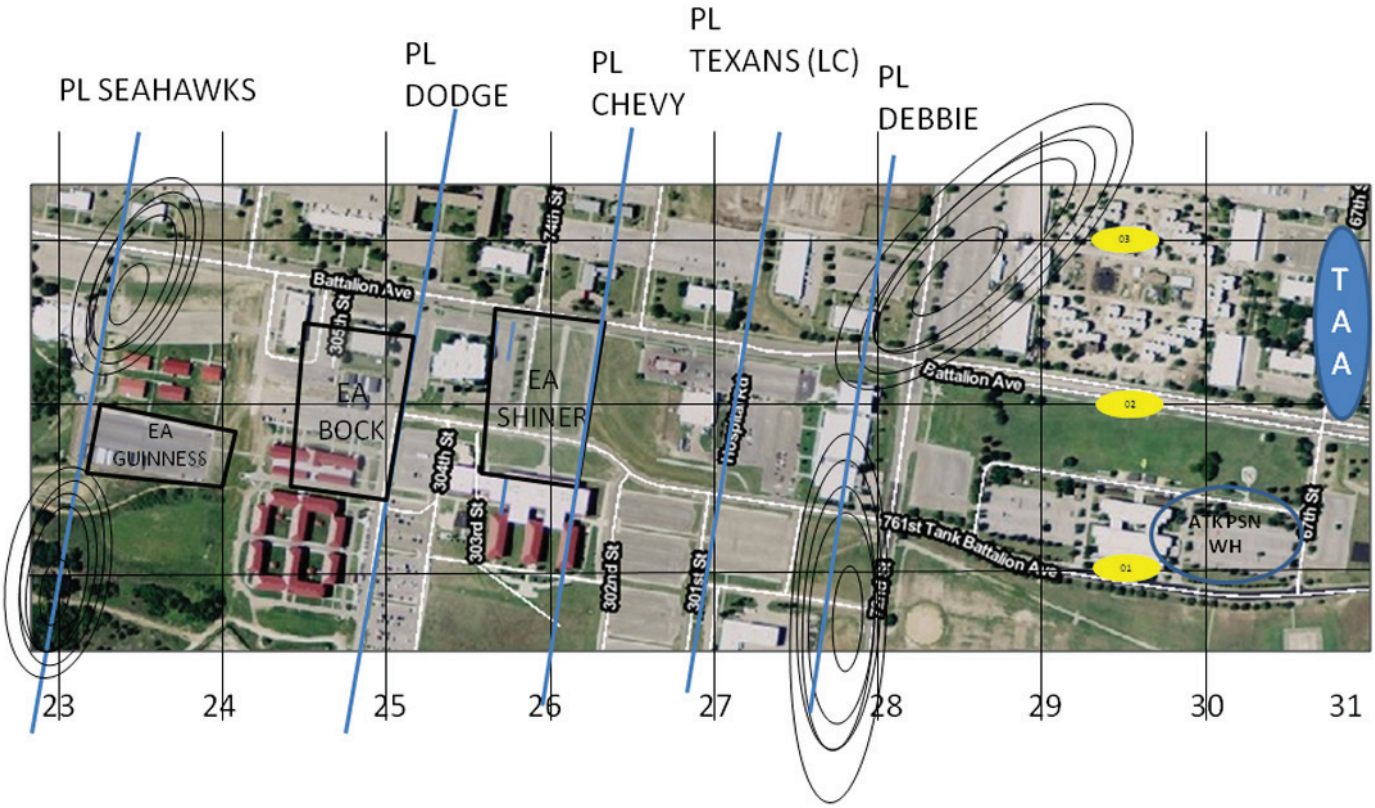

Figure 4. Battalion MTC transition to HDEF.

HDEF Objective Bogart

Scouts:
-Screen 22 Easting
-Displace on Passage Lane 1

Mortars:
-Occupy Mortar Firing Point (MFP) 1

Company A:
-DEF BP 11
-DEF BP 12; block avenue approach from east
-Emplace Modular Mine Pack Mine System (MOPMS)

Company B:
-DEF BP 21 TRP 103-104
-Establish infantry strongpoint between 11 and 21

Company C:
-DEF BP 31 TRP 102-103
-O/O DEF BP 32 TRP 101-102
-Emplace MOPMS

Company D:
- DEF BP 41
- Emplace MOPMS

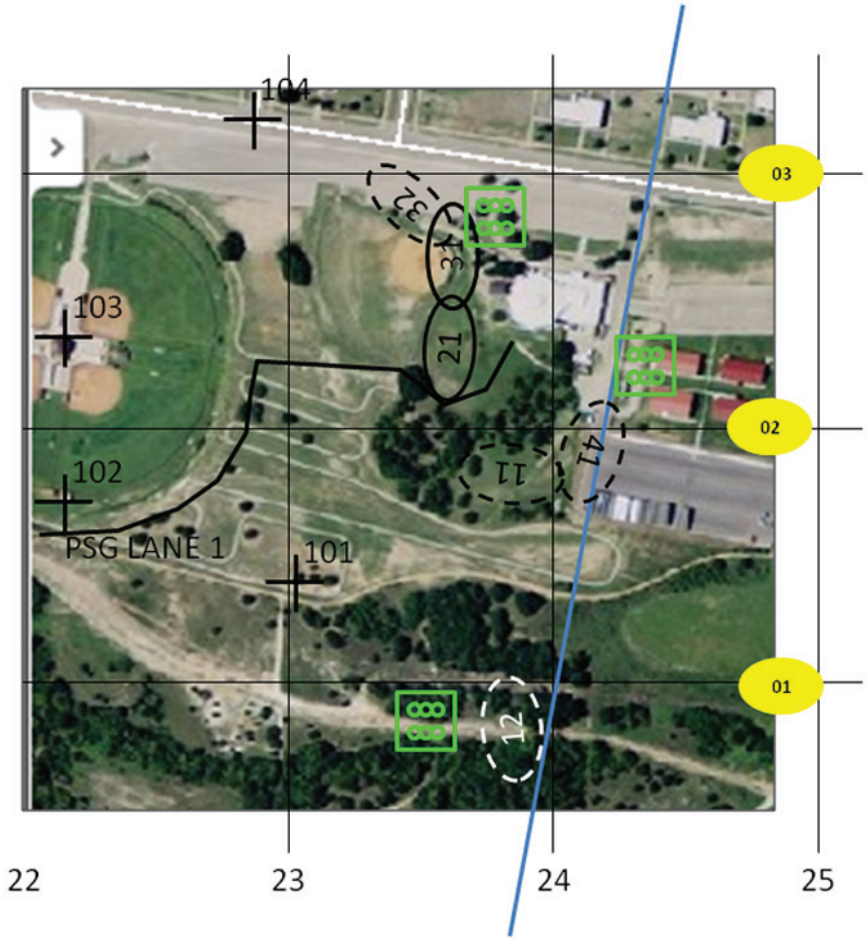

Figure 5. Battalion MTC transition to HDEF.

(frago) to the original plan and did it again.

Operation Warhorse Hammer

Operation Warhorse Strike proved that a battalion can conduct tactical training in garrison. Based on that, I planned and executed Operation Warhorse Hammer. Starting as another battalion operation during PT, it eventually turned into a 40-hour-long exercise of the entire battalion. (But it started during PT!)

With several new platoon leaders and company commanders, I built a week-long leader certification program, which would include maneuver PT. The week before, I conducted PT with the commanders in the morning, re-bluing them on the tactical tasks I would have them teach their platoon leaders. During the week of the leader's certification, the company commanders used PT on Monday through Thursday to train their platoon leaders in tactical-maneuver tasks. The tasks started simply on Monday and built in complexity. On Thursday, they received a simple frago, and then on Friday morning, they executed the mission and had to react to a variety of situations under close scrutiny. My S-3 and I each ran with two companies on sequential lanes for a total of more than six miles. The leader certification culminated in a platoon situational-training exercise (STX) a month later, at which time they demonstrated proficiency in all tasks while mounted.

We designed a battalion battle drill consisting of a "right hook" or "left hook" (Figure 6) and standardized some offensive-movement formations. I then took all the platoon leaders and above in the battalion and spent a couple of PT sessions focused on rehearsing those formations and drills. By the end, I had a formation of leaders who understood my intent for maneuver at the battalion level as well as who saw first-hand the complexity of changing formations or reorienting the battalion.

I've seen the results of using a decent amount of time to train in maneuver during PT. I didn't mandate that my platoon leaders use this technique, though I strongly encouraged it. During platoon training in *C*lose Combat Tactical Trainer (CCTT), Gunnery Table XII or platoon STX, it was evident who had invested the time to train. Some embraced it, and they became my go-to lieutenants. Some developed other ways, such as conducting machinegun crew drills during PT. Some leaders were scared to try something new.

Some leaders may be set in their ways and resistant to change because they have never seen it before. It looks odd. It takes some effort to get the "rules" of the game down, and until then, it feels like you aren't getting much PT in.

There will be some nay-sayers in the group (the same ones who resist everything). But when it all starts coming together, and you see and hear that your unit is able to execute routine battle drills routinely, is thinking about integrating indirect fires into each operation and remembers to make survivability moves – and your lieutenants are no longer tongue-tied new officers but are taking charge – suddenly you know your unit knows how to fight and that it will work when you do it for real.

Maneuver PT will never replace mounted maneuver, but much like a run in CCTT, it can get you much farther in the game before you actually play for real. The time is free, and there is plenty of it. It's your choice. You can complain there isn't enough time to train and then go run in a box formation, singing the same cadences again … and again. … Or, you can learn to maneuver.

Train to win.

LTC Esli Pitts is the senior task-force maneuver observer/controller/trainer at the Joint Maneuver Readiness Center, Hohenfels Training Area, Germany. His past duty positions include commander, 3rd Battalion, 8th Cavalry Regiment, Fort Hood, TX; instructor, Department of Tactics, Command and General Staff College, Fort Leavenworth, KS; executive officer and operations officer, 1st Brigade, 3rd Infantry Division, Fort Stewart, GA; and S-3 and executive officer, 5th Squadron, 1st Brigade, 3rd Infantry Division, Fort Stewart. His military schooling includes infantry one-station unit training, Airborne School, Air Assault School, Armor Officer Basic Course, Infantry Mortar Leader's Course, Armor Officer Advanced Course, Combined Arms Service Staff School, Command and General Staff College and North Atlantic Treaty Organization Staff Orientation Course. He holds a bachelor's of arts degree in history from Washington State University and a master's of science degree in international relations from Troy University.

Notes

[1] CMTC was transformed in December 2005 and renamed the Joint Multinational Readiness Center, which is part of the Joint Multinational Training Center, overseeing training for U.S. Army Europe.

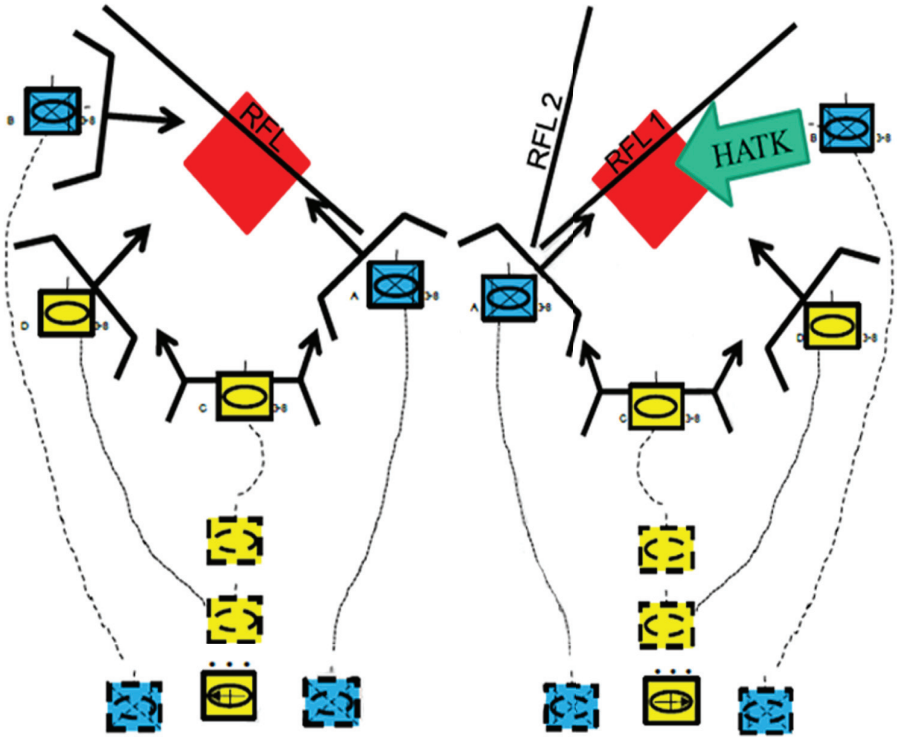

Figure 6. 3-8 Cavalry TACSOP. On the left is the left hook with ABF to envelop. On the right is the right hook with hasty attack (HATK) to envelop.

Acronym Quick-Scan

AA – assembly area
ACU – Army Combat Uniform
AGMB – advanced guard main body
ATK PSN WH – attack Position White
BMP – *boyevaya mashina pekhoty*
BP – battle position
BPT – be prepared to
CATK – counterattack
CCTT – Close Combat Tactical Trainer
CMTC – Combat Maneuver Training Center
CoA – course of action
CP – checkpoint
DEF – defend
DFCM – direct-fire-control measure
EA – engagement area
Est IN Stng Pt – establish infantry strongpoint
Frago – fragmentary order
FSO – fire-support officer
HATK – hasty attack
HDEF – hasty defense
LC – line of contact
LD – line of departure
LOA – limit of advance
LOGPAC – logistics package
LTP – Leadership Training Program
MFP – mortar-firing point
MOPMS – Modular Mine Pack Mine System
MRS – muzzle-reference sensor
MTC – movement-to-contact
MTR – mortars
NTC – National Training Center
O/O – on order
OP – observation post
Opfor – opposing force
Opord – operations order
P (with number) – purpose
PC – personnel carrier
PH – phase
PL – phase line
PSG – passage (lane)
PSN – position
PT – physical training
REDCON – readiness condition
RFL – restricted firing line
ROM – refuel-on-the-move
RP – release point
SCTS – scouts
SOSRA – suppress, obscure, secure, reduce and assault
SP – start point
T (with number) **–** task
TACSOP – tactical standard operating procedures
STX – situational-training exercise
TAA – tactical-assembly area
TF – task force
TOC – tactical-operations center
TRP – target reference point
TTP – tactics, techniques and procedures

67th Armor Regiment

The personnel of 17th Tank Battalion, from which this organization descends, were in the old 305th Brigade and, therefore, adopted the undifferenced arms and crest of that brigade. The erupting mount symbolizes the anti-tank mines that caused heavy losses within 17th Tank Battalion. The colors of the shield commemorate the insignia worn by the brigade. The distinctive unit insignia was originally approved for 17th Tank Battalion Aug. 14, 1923. It was reassigned for 2nd Tank Regiment July 11, 1930. It was reassigned for 67th Infantry (Medium Tanks) Nov. 16, 1932. The insignia was redesignated for 67th Armored Regiment April 6, 1942. It was redesignated for 67th Medium Tank Battalion Jan. 8, 1951. The insignia was redesignated for 67th Armor Regiment Nov. 4, 1958.

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