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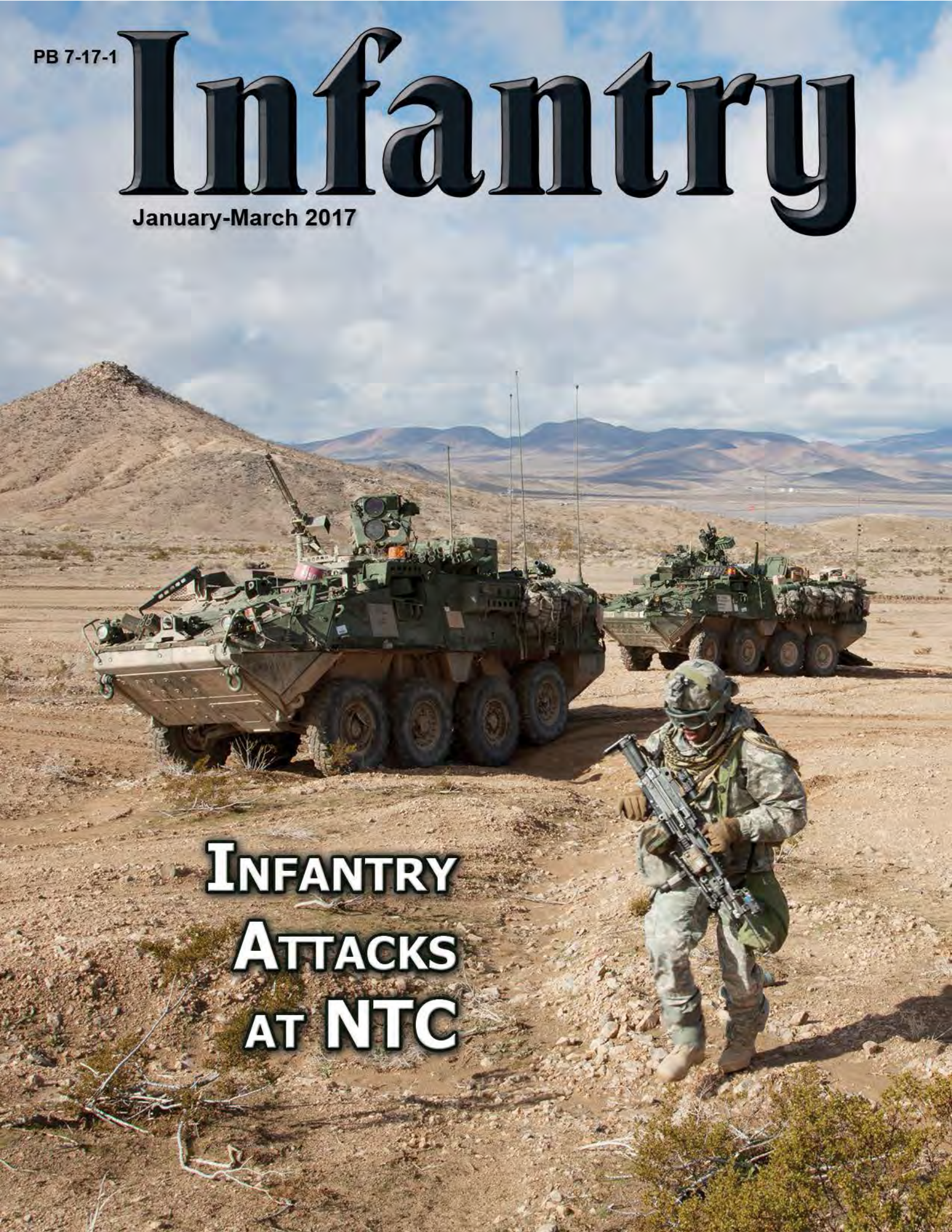
Infantry

January-March 2017



Infantry Attacks at NTC

PB 7-17-1

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FEATURES

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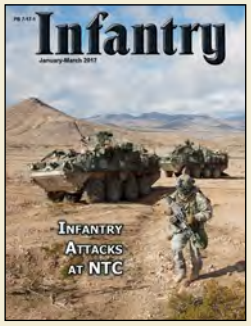


ON THE COVER:

Soldiers of the 25th Infantry Division's 1st Stryker Brigade Combat Team, out of Fort Wainwright, AK, participate in a combat exercise on 19 January 2017 at the National Training Center on Fort Irwin, CA. (Photo by SPC Rachel Diehm)

BACK COVER:

Paratroopers from the 2nd Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade, fire an M240L machine gun during a training mission at the 7th Army Training Command's Grafenwoehr Training Area, Germany, on 28 January 2017. (Photo by Markus Rauchenberger)

Vietnam War Hero 'Hal' Moore Dies at Age 94

ARMY NEWS SERVICE

LTG (Retired) Harold "Hal" Gregory Moore, co-author of the book *We Were Soldiers Once... and Young*, died on 10 February at his home in Auburn, AL. He was 94 years old.

Moore's book about the exploits of his battalion in the Battle of Ia Drang Valley during the Vietnam War — co-written with journalist Joseph L. Galloway — was adapted into a 2002 Hollywood film in which Moore was portrayed by actor Mel Gibson.

Moore graduated from West Point in June 1945 and entered the Infantry branch as a second lieutenant just three months before the end of World War II. While Moore was unable to serve in that conflict, he went on to serve in both the Korean War and the Vietnam War. Moore's heroism during the Battle of Ia Drang earned him the Distinguished Service Cross. At the time of the battle, Moore served as commanding officer of the 1st Battalion, 7th Cavalry, 1st Cavalry Division (Airmobile).

His unit was dropped by helicopter into the Ia Drang Valley on 14 November 1965 in one of the first major battles between U.S. and North Vietnamese regulars. During the battle, 234 Americans were killed and another 250 were wounded. Estimates of the North Vietnamese killed range between 600 and 1,200, depending on sources.

Distinguished Service Cross Citation

During the period 14-16 November 1965, then-LTC Moore, commanding officer, 1st Battalion, 7th Cavalry, 1st Cavalry Division (Airmobile), was participating with his unit in a vital search and destroy operation in the Ia Drang Valley, Republic of Vietnam. Upon entering the landing zone with the first rifle company, Moore personally commenced the firefight to gain control of the zone by placing accurate fire upon the Viet Cong from an exposed position in his hovering helicopter.

Throughout the initial assault phase, Moore repeatedly exposed himself to intense hostile fire to ensure the proper and expedient deployment of friendly troops. By his constant movement and repeated exposure to this insurgent fire, Moore set the standard for his combat troops by a courageous display of leadership by example, which characterized all his actions throughout the long and deadly battle. Inspired by his constant

presence and active participation against an overwhelming enemy, the friendly forces solidified their perimeter defenses and repulsed numerous enemy assaults.

On 15 November 1965, the embattled battalion was again attacked by a three-pronged insurgent assault aimed at surrounding and destroying the friendly forces in one great advance. With great skill and foresight, Moore moved from position to position, directing accurate fire and giving moral support to the defending forces. By his successful predictions of insurgent attack plans, he was able to thwart all their efforts by directing barrages of small arms, mortar, and artillery fire in conjunction with devastating air strikes against Viet Cong positions and attack zones.

As the grueling battle continued into the third day, another large Viet Cong strike was repulsed through Moore's ability to shift men and firepower at a moment's notice against the savage, last-ditch efforts of the insurgents to break through the friendly positions. Moore's battalion — inspired by his superb leadership, combat participation, and moral support — finally decimated the well-trained and numerically superior Viet Cong force so decidedly that they withdrew in defeat, leaving more than 800 of their dead on the battlefield and resulting in a great victory for the 1st Battalion.

New Army Jungle Wear Gives Trench Foot the Boot

C. TODD LOPEZ

The standard issue combat boot most Soldiers wear today — the one most commonly worn in Iraq and Afghanistan — is great for sandy dunes, hot dry weather, and asphalt. But it's proven not so good in hot and wet environments. So the Army has developed a new jungle boot that some Soldiers will see this year.

In September 2016, Chief of Staff of the Army GEN Mark A. Milley directed the Army to come up with a plan to outfit two infantry brigade combat teams (IBCTs) in Hawaii, part of the 25th Infantry Division there, with a jungle boot. The Army had already been testing commercial jungle boots at the time — with mixed results — but didn't have a specialized jungle boot, so Program Executive Officer (PEO) Soldier, headquartered at Fort Belvoir, VA, had to get a plan together to make it happen.

By October, the Army had made a request to industry to find out what was possible, and by December contracts were awarded to two boot manufacturers in the United States to build more than 36,700 jungle-ready combat boots, enough to outfit both full IBCTs in Hawaii.

"This is important to the Army and important to Soldiers in a hot, high-humidity, high-moisture area," said LTC John Bryan, product manager for Soldier Clothing and Individual Equipment with PEO Soldier. "We are responding as quickly as we possibly can with the best available, immediate capability to get it on Soldiers' feet quickly and then refine and improve as we go."

Mixing Legacy with Tech

Right now, the new jungle boot the Army developed will be for Soldiers with the 25th ID in Hawaii — primarily because there are actually jungles in Hawaii that Soldiers there must contend with. The new boots look remarkably similar to the current boots Soldiers wear. They are the same color, for instance. And the boots, which Bryan said are called the "Army Jungle Combat Boot" (JCB), sport a variety of features drawn from both the legacy M1966 Vietnam-era jungle boot and modern technology.

The M1966 Jungle Boot, which featured a green cotton fabric upper with a black leather toe that could be polished, had a solid rubber sole that Soldiers reportedly said had no shock-absorbing capability. The new boot uses a similar tread, or "outsole," as the M1966 "Panama style" — to shed mud and provide great traction, but the added midsole makes it more comfortable and shock absorbing, according to Albert Adams, who works at the Army Natick Soldier Research, Development, and Engineering Center.

The outsole of the new boot is connected to the leather upper via "direct attach," Adams said. That's a process where a kind of liquid foam is poured between the rubber outsole and leather boot upper. "[It's] a lot like an injection molding process," he said.

The foam layer between the rubber sole and the upper portion of the boot not only provides greater shock absorbing capability, but it also keeps out microbes in hot, wet environments that in the past have been shown to eat away at the glues that held older boots together. So the new boots won't separate at the soles, he said. "It provides a high level of durability, and it also adds cushioning."

Also part of the new boot is a textile layer that prevents foreign items from puncturing the sole of the boot and hurting a Soldier's foot, Adams said. The M1966 boot accomplished that with a steel plate. The new boot has a ballistic fabric-like layer instead.

The new JCB also features a heel with a lower height than the M1966 model to prevent snags on things like vines in a jungle environment. That prevents tripping and twisted ankles.

The boot also has additional drainage holes to let water out if it becomes completely soaked, speed laces so that Soldiers can don and doff the boots more quickly, a redesigned upper to make the boots less tight when they are new, an insert that helps improve water drainage, and a lining that provides for better ventilation and faster drying than the old boot.

Feedback Formed Final Design

The Army didn't design the new JCB in a vacuum. Instead, it worked with Solders to get the requirements and design just right to meet the needs of Soldiers, said CPT Daniel Ferenczy, the assistant product manager for Soldier Clothing and Individual Equipment.

"We take what Soldiers want and need, we boil that down to the salient characteristics, hand that over to our science and technology up at Natick; they work with us and industry, the manufacturing base, to come up with this product," Ferenczy said. "This is a huge win, a great win story for the Army because it was such a quick turnaround."

Read more about the Jungle Combat Boot at https://www.army.mil/article/183541/.

(C. Todd Lopez writes for the Army News Service.)

Army Developing New Precision Mortar

AUDRA CALLOWAY

The Army has closed its initial solicitation phase for designs to create a next generation precision mortar that will allow Soldiers to put their rounds on target with extreme accuracy. The 120mm high explosive-guided mortar (HEGM) program is intended to replace the current precision-guided HE mortar — the accelerated precision mortar initiative (APMI).

The solicitation period sought feasible designs from the private sector to create a new "smart" mortar. While the HEGM round will incorporate state-of-the-art technology, the new round is intended to be a different design than APMI.

Precision Strike Capability

Precision mortars are necessary when Soldiers can't afford for the first mortar round to be off target, such as in an urban environment where civilians could get hurt or buildings destroyed.

"With a precision mortar capability you're able to quickly come in, establish, fire, and with one round you're able to get effects," said LTC Anthony Gibbs of the Product Manager Guided Precision Munitions and Mortar Systems. "If counter-fire is a threat, a precision mortar gives you the ability to get first round effects and then reposition."

APMI has proven especially useful for Soldiers stationed at remote outposts that aren't supported by other precision-guided assets like Excalibur, the Army's 155mm precision-guided artillery round.

Precision-guided mortars also reduce the logistical burden for troops, because Soldiers don't need to lug as many rounds to the fight. Instead of firing large quantities of HE rounds, troops can fire one precision-guided round and eliminate the target, so their resupply needs are reduced.

"Instead of Soldiers having to fire two or three rounds to get effects, we can achieve effects with one," said MAJ Kenneth Fowler, HEGM assistant product manager. "This reduces required logistical support, which means less fatigue for Soldiers over time, and you can engage a wider array of targets."

Improvements

Like its predecessor, HEGM will be an all-terrain, all-weather mortar capable of incapacitating personnel within or behind structural barriers or light-skinned vehicles, as well as troops in the open, while minimizing collateral damage. It will be compatible with all U.S. 120 mm mortar weapons and fire-control systems in infantry, armored, and Stryker brigade combat teams. However, the HEGM will be more accurate and maneuverable than APMI.

Many of HEGM's enhancements will come from the requirement that it contain a semi-active laser (SAL), an independent targeting mode that employs laser designation, giving the mortar dual means to guide it to the intended target. It will provide the round with increased accuracy by directing it to its target via a laser beam. (APMI is GPS-guided.) Because the laser guides the round to the physical target instead of a GPS location, the mortar will have the potential to correct course in flight to hit a target that has moved.

"The increased maneuverability will allow Soldiers to engage targets that may have moved or repositioned since the time the call for fire occurred," Gibbs said. "If the target has moved, you can still hit it if the laser has designated it."

The SAL will also make HEGM more resistant to countermeasure threats in GPS-degraded environments.

(Audra Calloway works for the Picatinny Arsenal Public Affairs Office.)

Photo by SGT Matthew Moeller

Soldiers with the 2nd Battalion, 12th Infantry Regiment, 4th Brigade Combat Team, 4th Infantry Division, fire mortar rounds at insurgent fighting positions in Kunar Province, Afghanistan, on 15 August 2009.

Improving Your Position:
Security and the Human Terrain

CPT MICAH ABLES

Always improve your position. In a patrol base, conduct reconnaissance and security (R&S) patrols and cover your dead space. In a combat outpost, develop alternate, supplementary, and subsequent defensive positions. In a foxhole, dig deeper. Wherever you are, always improve your position.

From basic training to Basic Officer Leadership Course (BOLC) to Ranger School, physical security is drilled into us so we can be better prepared for the next kinetic threat. This is a good thing. Security will — and should — always be the top priority on patrol. But by focusing exclusively on physical security, we are missing some important pieces of the puzzle. In an urban environment — or, realistically, anywhere that your platoon isn't sitting alone in a swamp — the human terrain can be every bit as important in preparing for — or even preventing — the next kinetic fight.

My platoon was deployed as the security force (SECFOR) for a security force advise and assist team (SFAAT) in Kandahar, Afghanistan, in support of Operation Enduring Freedom XIV and Resolute Support Mission. The bulk of our missions revolved around going to the same locations, day in and day out, as the SFAATs met with the governor, police leadership, or military staffs. While this repetition felt dangerous (the limited routes available, inflexibility of our schedules, etc., made our travel patterns uncomfortably predictable), it also created opportunities for us to constantly improve our security.

After a few days of going to the same locations, we had physical security down to a science. My NCOs and I worked together to figure out the best positions for each truck in each compound. Every truck had established fields of fire and sector sketches drawn onto their gridded reference graphics. Drivers watched dead space and blind spots for their gunners. We developed procedure words for our guardian angels (GAs) to covertly signal the rest of the platoon if something didn't feel right or if they detected a threat in their meeting. We planned, briefed, and rehearsed emergency exfiltrations under various hostile circumstances at every location.

On every mission, I would think back to all the nights spent setting up patrol bases in training. Establish and adjust the

Photo by SPC Joshua Edwards

A platoon leader with Combined Task Force Dragoon and an interpreter speak with a local Afghan man at Forward Operating Base Zangabad, Afghanistan, on 12 August 2013.

perimeter – check; ensure interlocking sectors of fire – check; develop sector sketches – check; distribute alert, evacuation, and withdrawal plans – check.

As numerous Afghan civilians and police wandered through the compound and conducted their business, it became clear to me that we were missing out on an essential aspect of our security — the human terrain. We knew the Afghan counterparts of our SFAAT advisors, but what about everyone else? What about the guard in the tower overlooking our trucks, the civilian walking in the front gate, or the policemen walking by? How do we improve our position by accounting for them in our security plan? I quickly decided we needed to incorporate a version of R&S patrols. Rather than moving in a "T" fashion to map out dead space, these mini-patrols would be focused on getting to know and understand the guards and civilians in our area — the human terrain.

These patrols became a standard part of my battle rhythm. Every day, after our trucks moved into position and our GAs escorted the SFAAT advisors into their meetings, I would take a Soldier and an interpreter with me to conduct my R&S patrols. I would meet with the governor's bodyguards, the police quick reaction force, civilians wanting to see the governor, or tower guards along the compound perimeter. I soon learned which guards to expect at which towers, which policemen were trustworthy, and which civilians to be wary of.

Over time, these relationships proved beneficial for a variety of reasons. One policeman alerted us to U.S. military equipment being taken off the base by contractors to be sold in the downtown market. One bodyguard would tell me the police chief's travel schedule when the police chief himself was being cagey and hiding information from our advisors. A few times, staffers and policemen would call me at night to alert me to a bomb or shooting in their district long before the normal reporting channels found out.

One day, I noticed a new guard was in the tower closest to us. I went to go meet him. After the usual greetings and small talk, I started asking him about his job. I was frustrated that he couldn't answer basic questions like "what will you do if someone starts shooting at your tower?" or "if you see something happen, how will you tell your commander?" I quickly realized that this guard had no training, had not been briefed, and had no radio or phone to communicate with anyone else.

As I continued to ask these questions, he broke down. Through the interpreter, he unleashed: "I don't know what I'm doing here. My commander is stupid. He is very mean and he abuses me. He always cusses at me and calls me a dog and hits me and threatens me. I can't work with him anymore. He treats me like a dog and I won't take it anymore."

Then, he calmly and clinically told me how he would solve his problem: "The next time he comes up to this tower, I'm going to shoot him in the face."

I hid my shock and tried to lighten the situation while telling him that he can't shoot his commander. He continued. "I will shoot him. If I try to escape, the other guards will catch me," he explained as he pointed to the other towers guarding the exit points from the compound. "So I'll jump down from this tower over the wall, cross the street, go down that alley, and hide at my cousin's house."

Whether you're in a police compound, a city center, or a sparsely populated village, only by engaging and interacting with the locals — conducting R&S patrols of sorts ***— can you find the blind spots and cover*** *the dead space that you won't see on any maps or imagery.*

Realizing that this was a well-thought out, premeditated plan and not just a temporary fit of rage, I contained my nervousness and attempted to talk down the guard from his plan. I tried to convince him to talk to his superiors and that he would be caught and killed if he went through with his plan. Eventually, I got a shaky promise that he wouldn't kill his commander today.

As I climbed down the stairs from the tower, my mind was racing. What if he shoots his commander while we're here? What if some stray rounds hit our trucks or, worse, a gunner? What if my GAs or the advisors get caught in the crossfire from a green-on-green attack and the ensuing chaos?

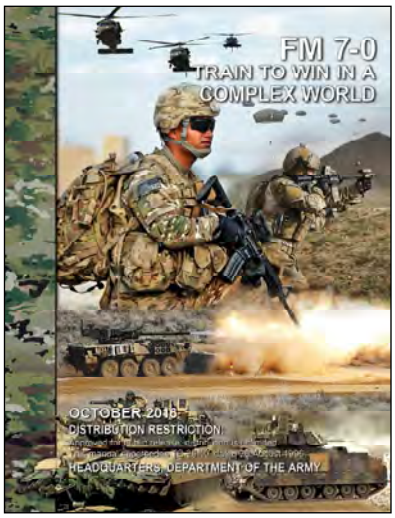
This situation drove home the importance of understanding the human terrain that was so crucially intertwined with our physical security. Ultimately, the situation resolved itself. The police chief was very concerned to learn about this, the abusive commander was quickly removed from the compound, and the would-be assassin was effusively grateful. The threat never manifested itself, but it forever changed how I developed our security plans.

Whether you're in a police compound, a city center, or a sparsely populated village, only by engaging and interacting with the locals — conducting R&S patrols of sorts — can you find the blind spots and cover the dead space that you won't see on any maps or imagery. After your physical security is coordinated and established, finding out which guards aren't prepared or equipped for their jobs — or which ones are planning a violent attack — may just be the key to being ready for or even preventing the next outbreak of violence. The next time you're on patrol and you've gone through your mental checklist of all the principles of security, just remember: always improve your position.

CPT Micah Ables is currently attending the Maneuver Captains Career Course at Fort Benning, GA. He was previously stationed in Israel where he studied for his master's degree in government, diplomacy, and conflict studies.

FM 7-0:
The Company Commander's Training Primer

WILLIAM BROSNAN
LTC CHARLES BERGMAN



"Training is the key task to improve our readiness. Realistic, hard, rigorous, repetitive training increases combat performance and reduces friendly casualties. Read, understand, and use FM 7-0."

— Chief of Staff of the Army GEN Mark A. Milley

This past October, the Army published a new Field Manual (FM) 7-0, *Train to Win in a Complex World*. FM 7-0 uses the operations process of plan-prepare-execute-assess in a step-by-step approach to help commanders and other unit leaders train their Soldiers. With a focus on readiness and high levels of training proficiency, the FM provides the how-to processes of unit training along with practical applications. The FM includes discussions on how doctrine is supported by web-based enablers of the Army Training Management System (ATMS). ATMS consists of the Army Training Network (ATN), the Combined Arms Training Strategies (CATS), and the Digital Training Management System (DTMS). With fundamental training doctrine and the resources of ATMS, leaders have the necessary tools to make unit training more efficient and more effective.

What does a company commander need to understand about training? First and foremost, the commander and unit leaders need to read FM 7-0, which is available on ATN's website (https://atn.army.mil/) and the Army Publishing Directorate (APD) homepage (https://apd.army.mil). FM 7-0's doctrine and processes are transportable and can be applied to any Army unit.

So, where does the training process begin for a company commander? As with the operations process, it begins with the receipt of the unit training plan (UTP) from the battalion commander. The battalion commander specifies the battle focus for the command — the who, what, when, where, why of training, and the most important collective tasks. Within a brigade, the UTP is provided in an operation order (OPORD). This, along with the associated UTP calendar (long-range planning horizon), provides the company commander the basic information necessary to begin the mission analysis necessary to determine the mission-essential tasks (METs) to battle focus unit training. As a reference, the company commander refers to the standardized mission-essential task list (METL) available on ATN.

The standardized METL depicts the capabilities and collective tasks the unit must accomplish. The specifics of the higher commander's guidance and a lack of time and training resources prompt company commanders to narrow the METs to the ones needed to meet mission requirements.

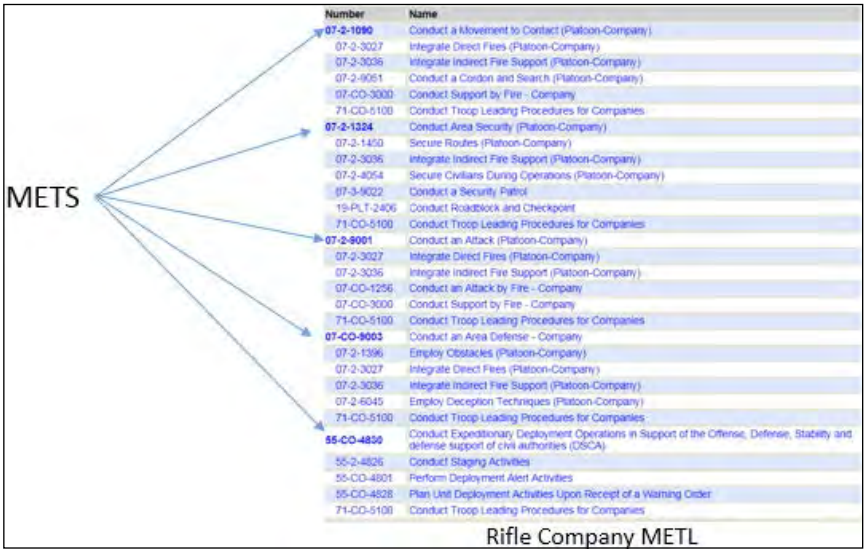
For example, an infantry company commander, as a result of his mission analysis, determines that the company should focus on these METs:

07-CO-1090 Conduct a Movement to Contact
07-CO-9003 Conduct an Area Defense

Although the other standardized METL tasks may be a lesser priority, they are still reportable for training readiness purposes. The selected METs, along with other results of the mission analysis, are discussed and agreed to during the mission analysis backbrief between the company and battalion commanders.

Following the mission analysis backbrief, the company commander can now begin to develop a UTP. The UTP describes how the company will build training proficiency in the selected METs in a crawl-walk-run methodology. By using troop leading procedures (TLPs), the company commander

Figure 1 — METL Viewer



begins to formulate how to train the unit. For assistance, the company commander refers to CATS, which are accessible on DTMS. The unit CATS will provide a good starting point to suggest a sound and progressive (crawl-walk-run) methodology to train the unit. The unit CATS will recommend the training events that will specifically train the selected METs from the mission analysis. In many units, the company and battalion commanders agree to combine the battalion and company UTPs into a single battalion UTP that addresses both echelons.

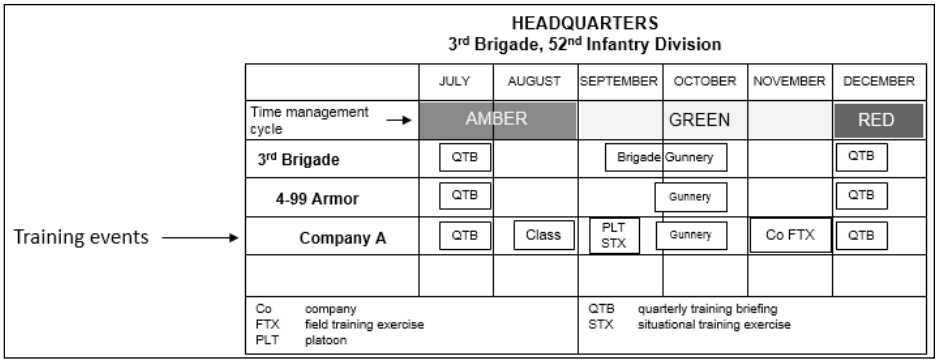


Figure 2 — Training Events from the Company UTP Calendar

Through a review of the CATS planning tool options, the commander selects many of the recommended CATS training events. After determining the training events, the company commander determines broad training objectives for each event. From FM 7-0, the commander knows that each training event is placed on the UTP calendar for a reason. To ensure the UTP correctly builds unit training proficiency, it's critical to identify training objectives for each event. At a minimum, training objectives consist of task, condition, standard, and the training proficiency the commander expects to attain at the training's conclusion.

The commander may look at the development of multiple courses of action (COAs) to train the unit. Again, following the steps of TLP, the commander determines the best COA that trains the unit and then backbriefs the battalion commander for approval. Once approved, the company publishes the UTP in DTMS to the platoons.

Several weeks following approval of the company UTP and within the brigade, battalion commanders brief their UTPs to the division commander during the training briefing (TB). Appendix G of FM 7-0 provides example slides that show the content of what each commander briefs at the TB. Company commanders do not formally brief the division commander, but the slides can be downloaded from the Unit Training Management (UTM) page on ATN and used for reference.

The TB provides the division commander an understanding of how the brigade will execute training and serves as a contract between commanders. The battalion commanders agree to train as briefed, and the division commander commits to provide the necessary resources for training. Following the start of training, periodic quarterly training briefings (QTB) are provided to the division commander to ensure the UTP remains sound and effective, and modified if necessary. Reserve Component (RC) units do their version of the QTB during the yearly training briefing (YTB).

All of this meticulous planning must occur months (and sometimes years) prior to the start of training. For subordinate units to develop their own training plans, each headquarters publishes their UTP well in advance. This is done not just for subordinates to plan training, but to allow time for the necessary training resources to be obtained. For training to be effective, the necessary resources must be available at the right point in the training cycle.

Concept of Operations: Decisive Operations

- Using a training strategy, state how the unit will train from the training start date to the end of the planning horizon.
- Refer to the long-range training calendar. Indicate the major training events and training objectives that the unit proposes to train (crawl-walk-run).
- Discuss dates of the EXEVAL and CTC rotations, planning, and execution status (as appropriate).
- Include the time management cycle.
- Discuss how the command will leverage the integrated training environment.

CTC - combat training center EXEVAL - external evaluation

Figure 3 — Sample Slide from Training Brief Template

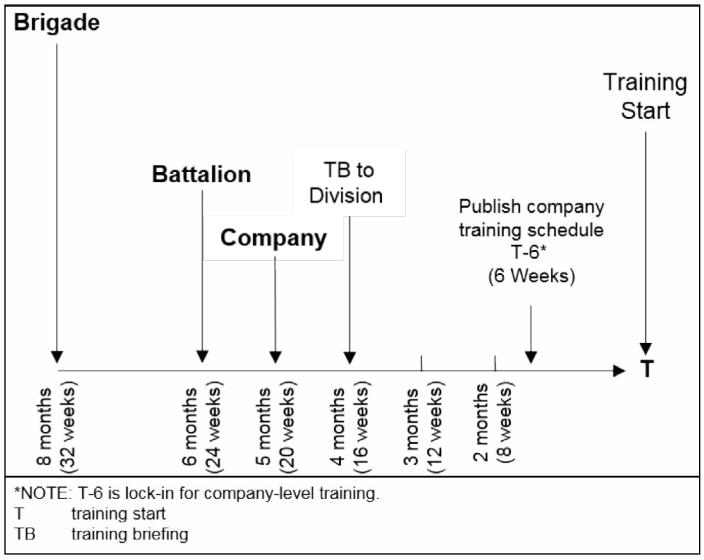


Figure 4 — UTP Publication Timeline for AC Company

Prior to the start of training, detailed planning for each training event must occur. The company commander refers back to each event's training objectives and uses weekly training meetings to assess the training that has occurred and to coordinate activities for future events. Appendix C of FM 7-0 discusses company training events, and Appendix H provides a rundown of the T-week concept. The T-week concept provides a useful backward planning framework for each training event

T-Week	Actions
UTP publication to T-13	Identify major training facilities
Week T-12	Conduct training event mission analysis
Week T-11	Refine training event requirements
Week T-10	Publish WARNORD and begin preexecution checks
Week T-9	Confirm resource requests
Week T-8	Execute reconnaissance and lock in resources
Week T-7	Publish the training event OPORD
Week T-6	Lock in training; publish training schedules
Week T-5	Complete plan and supporting products
Week T-4	Conduct certifications and complete prerequisite training
Week T-3	Conduct rehearsals
Week T-2	Finalize support and conduct OPFOR rehearsal
Week T-1	Draw equipment and supplies and execute subordinate rehearsals and checks
T-Week	Execute training
Week T+1	Recover, conduct final AARs, and assess training

AAR after action review OPORD operation order
OPFOR opposing force WARNORD warning order

Figure 5 — T-Week Concept from FM 7-0

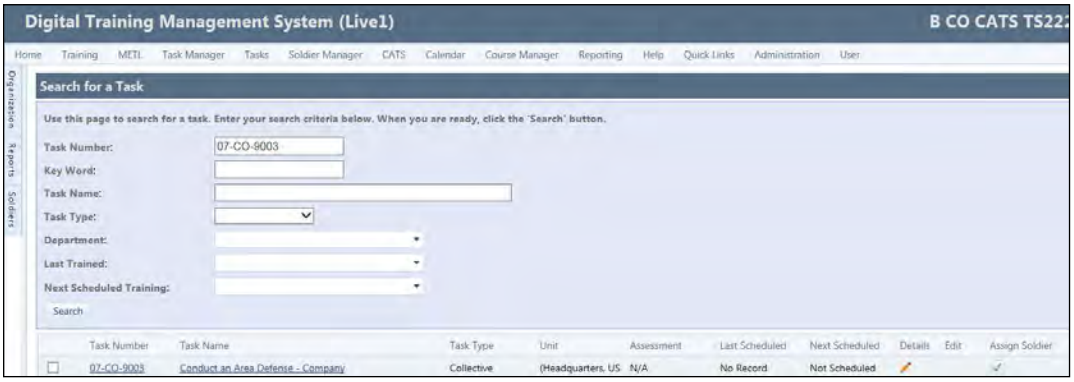


Figure 6 — Searching for a T&EO from DTMS

Figure 7 — Sample T&EO from DTMS

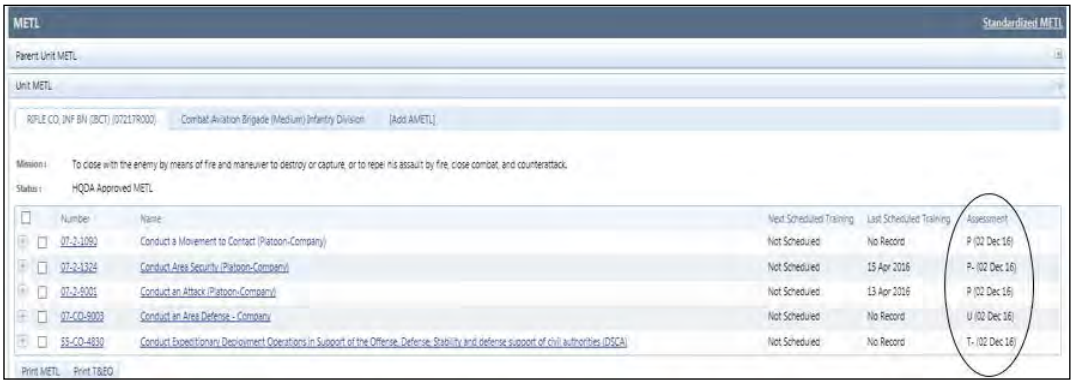


Figure 8 — Task Assessments Made in DTMS

to ensure major activities are completed and accounted for prior to training.

As each training event is conducted, the tasks trained are evaluated. As a major part of planning an event, an assessment plan is developed, and the training and evaluation outline (T&EO) of each task trained is identified and printed for the evaluators. T&EOs are readily available from ATN, CATS, and DTMS.

T&EOs are absolutely crucial to the company achieving training proficiency. The commander needs to use the T&EOs, or the unit will not train to the Army standard.

During and after each training event, after action reviews (AARs) are conducted in accordance with Appendix D of FM 7-0. The notes from each AAR, the completed task T&EOs, and observations help the company commander assess the results of the training. Those assessments (T, T-, P, P-, U) are recorded in DTMS.

Reading FM 7-0 is an important first step in understanding how to train Soldiers and units. Effective training comes from detailed and meticulous planning and execution. Understanding training doctrine helps commanders and unit leaders at every level. They learn how to better maximize limited training time and how to make the best use of an installation's extensive, but limited training resources. Training, like conducting operations, is hard work and requires leaders to be committed to training excellence. And it starts with understanding the Army's training doctrine — FM 7-0.

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Cross-Domain Obscuration: 'More Than a Smoke Grenade'

ANDY YERKES

Vignette

During a training exercise, LTC Clark, commander of the 4th Battalion, 56th Infantry Regiment (Mechanized), pulled his company commanders in for a detailed back brief after giving an operation order (OPORD). The company commanders began their initial visualization of the fight ahead, nested within their battalion commander's intent. CPT Key, the commander of Bravo Company, intended to fight the way he had trained. As the commanders and the S2 began to discuss the operation though, he realized his knowledge and training had not been thorough enough; his company was vulnerable in areas the enemy would exploit and he would need to use all available means to enable his company to win the coming engagement.

The movement from the assembly area to the assault position was almost 60 kilometers and set to begin at 0300. The company and battalion would track the single-column movement along the route via Joint Battle Command-Platform (JBC-P) and other Army Battle Command System (ABCS) platforms to synchronize the sequencing and timing of the support-by-fire (SBF), breach, and assault forces in the battalion. To ensure that a company or platoon didn't get too far in front or behind, there would be multiple radio calls to speed up or slow down. The fires cell would continue to shift the targets and confirm the shift with both a radio and digital information burst. Unmanned aerial vehicles (UAVs) would also fly in front of the formation to identify any potential enemy threat.

Alpha Company, the SBF force in the lead, would have about 30 minutes in the assault position and complete final radio checks with the battalion. The battalion fire support officer would join them, but the link up would be easy due to the JBC-P signature between the two elements. Final battalion graphics would also be disseminated via JBC-P as the battalion slowed and then stopped its movement in the respective assault positions to confirm timing of maneuver. The battalion would begin its maneuver from those positions based on both radio and JBC-P confirmation, moving to gain direct fire contact with the enemy to accomplish assigned tasks.

CPT Romano, the S2 who would be playing the opposing force (OPFOR), then said: "Sir, as the enemy commander, you've given me everything I need to defeat you quickly. Let me explain how."

CPT Key listened intently as CPT Romano described the multi-domain sensor capabilities the enemy would use to detect, locate, and target the companies in the battalion. In the assault position for the breach force, he realized he would be looking at smoking hulks of Bradley Fighting Vehicles and Abrams tanks in the SBF position. The enemy would wait until the majority of combat vehicles had arrived, and as the friendly artillery smoke began to billow, pre-planned enemy artillery would be concentrated in that specific area. Once that occurred, CPT Key knew if he reached for the hand mike to raise battalion for guidance, he would be unable to talk to anyone on either the company or battalion net. The JBC-P screen will have gone hay wire. Continually reaching for the hand mike to try and raise his battalion commander or battalion headquarters would result in an enemy answer — artillery rounds falling on his position. He realized he would be reliant on analog navigation capabilities (also known as a map and a compass).

Following CPT Romano's brief, SGT Burns, an attached Cyber NCO from the division, began to list multiple offensive capabilities that he would bring to the fight to enable the battalion's systems to continue to function during the fight. He highlighted specific enemy capabilities that he would request be targeted during Phase II into Phase III in the cyber domain to confuse the enemy's massive sensor array on the battlefield. CPT Key realized that SGT Burns was making reference to the joint phases found in Army Doctrine Reference Publication (ADRP) 3-0, Unified Land Operations*. SGT Burns continued to brief, but the commanders struggled to understand how to integrate the capabilities he was talking about in the close fight.*

CPT Key was learning that in the current and future operational environment (OE), the enemy will use multiple domain (land, air, maritime, space, and cyberspace) sensors to detect any signature he provides across the electromagnetic spectrum (EMS) to target and destroy his company. Most of the senior NCOs and leadership in B Company still operated with the belief that night-vision capabilities, thermal optics, and encrypted communications gave his company an insurmountable edge over the enemy. Now, he grasped that he needed a far better understanding of an adversary's sensor capabilities, not just in the "land domain" but in the aerial, space, cyberspace, and maritime domains as well. He also needed a more intensive level of training on his own equipment and how to implement tactical measures to reduce his signature. CPT Key began to understand the need for cross-domain obscuration.

Cross-Domain Obscuration

The employment of obscuration is not without significant training and leader knowledge considerations. To fight and win this and future fights, CPT Key must understand and then prepare his company to win by training in degraded modes and adjusting the conditions in training to replicate the threat's ability to acquire friendly units across the EMS. Some training techniques are:

- Conduct land navigation without Global Positioning System (GPS) or JBC-P, with only certain elements allowed to turn on their systems during a coordinated time.
- Develop brevity codes for routine radio traffic.
- Train to operate at night under night-vision devices (NVDs).
- Train platoons to utilize different movement techniques and formations over wide areas with link up at night.
- Train to employ company mortars for their obscuration effects.
- Train to engage targets that are obscured by friendly obscurants.
- Train at the company level to communicate in an allocated window of time for routine reports.
- Leave personal cell phones at home station and rely on a rear headquarters for important messages from the rear (operations security [OPSEC]).

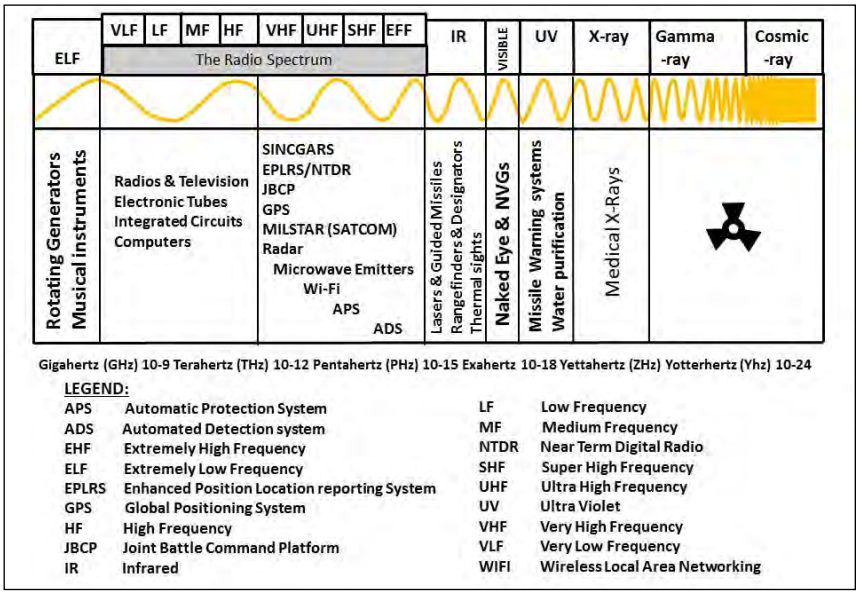


Figure 1 — The Electromagnetic Spectrum to Military Applications

- Request support from the military intelligence company (MICO) to replicate an electronic attack or cyber attack.
- During staff exercises, specifically address obscuration requirements from higher headquarters.

Company commanders need to understand the implications of Russia's demonstrated ability to detect, locate, and target both Ukrainian and Syrian rebel forces effectively from a variety of domains utilizing different platforms (UAV, satellites, ground sensors, special purpose forces, small boats, social media) in the EMS, which is public record. This will make them knowledgeable about the threat as they do their own intelligence preparation of the battlefield. To be successful in the current and future OE, maneuver leaders across echelons must plan to protect their formations from observation from advanced sensors employed from a variety of domains simultaneously. Russia and other adversaries will use advanced thermal and electro-optics on their tanks and fighting vehicles, unmanned aerial systems (UAS), and aircraft that detect radio traffic. Enemies will visually confirm friendly locations utilizing satellites in space that detect electronic signatures as well as social media to identify U.S. formations.

This highlights the critical requirement that companies, battalions, and brigades must obscure their signatures from targeting and attack in all domains. This required capability is cross-domain obscuration. The objective of cross-domain obscuration is to deny enemy forces the ability to acquire and target friendly forces across the EMS. Since infantry and armor companies possess limited resources to constantly obscure themselves throughout an operation, they will rely on their higher headquarters for most of their obscuration requirements.

In the vignette, CPT Key began to understand how his company could be seen in the EMS because his company would "emit" targetable signatures across various domains. He would need to use a variety of obscuration techniques and coordinate for resources in time and space across the EMS in multiple domains to prevent detection and engagement by the enemy.

The EMS is more than just radio frequencies. Enemy sensors — from satellites and UAVs to tank optics and social media — search across the EMS for movement, use of radios, computers, vehicles, and people. Units move and produce seismic signatures that are heard in the audible band. Units talk on the radio, utilize computers, and communicate via JBC-P with satellites, all producing a different signature in the radio frequency portion of the EMS. Soldiers and vehicles give off heat that can be seen in the infrared portion of the EMS. NVDs enhance the threat's ability to see in low ambient light, and units are seen in the visible light portion of the EMS during daylight hours (see Figure 1).

Commanders must understand what the enemy will use as sensors. A commander must "see himself," identifying the type, how, when and where emissions are being broadcast and then plan for how to obscure it based on the mission assigned. Companies, battalions, and brigades will be most vulnerable to detection in the radio spectrum as threat sensors become more technologically able to detect and collect across the EMS using UAVs, radars, ground sensors, and ground-based signal collection assets.

Consider the different types of threat sensors by domain and spectrum:

- On **land**, the threat will use special purpose forces, scouts, and other reconnaissance forces that rely on "the naked eye" and electro-optical thermal sights mounted on vehicles. Unattended ground sensors that detect vibration and sound will be placed across likely avenues of approach. The enemy will utilize passive ground-based EMS, utilizing systems like the battlefield surveillance radar SNAR 10 or Krasukha electronic warfare (EW) system to detect radio frequency traffic and its source.[1]

- In the **air**, enemies will utilize a variety of manned and unmanned aerial systems (like the ZALA or PCHELA-1K) in various roles that sense with a variety of infrared and/or enhanced optical sights, or signal intelligence (SIGINT)/

electronic intelligence (ELINT) sensors.[2] They will be employed in a variety of sizes (small/medium/large) and tied to various echelons (maneuver battalion, a fires battalion/brigade, or theater army) of an enemy formation. These systems will be used to extend the depth of an enemy's battlespace.

- Enemies will utilize the **cyber** domain to generally detect and locate units. An open source Google search on www.Instagram.com for #OperationAtlanticResolve in December 2016 brought up 336 posts with personnel and locations tied to them. In the same vein, the unit's Facebook page or the Soldier whose Snapchat story details his unit's deployment is detectable in the cyber domain.

- In the **space** domain, enemies will utilize a variety of satellites capable of enhanced optical observation, electronic intelligence, high-resolution optical observation, as well as data-relay satellites and remote-sensing satellites.[3] Commercially available satellites will be used for their satellite imagery as well.

- Enemies will search from the **maritime** domain for any type of detectable EMS signature. They will utilize radars to detect anything in the air, to include UAVs, as well as passive EMS collection systems similar to the Krasukha EW that search for traffic in the radio frequency portion of the spectrum.

A company commander who does not "see himself" broadcasts a continuous identifiable signature and does not understand that enemy sensors are actively searching for organizations across the EMS from different domains, which significantly increases the risk of being targeted for rapid destruction by an enemy. In today's increasingly lethal environment, to be detected is to be targeted and destroyed. A company commander must coordinate and integrate obscuration assets throughout the tactical operation to effectively obscure movement and maneuver at critical times.

In the vignette, CPT Key cannot obscure his entire element from the time before it crosses the line of departure to when it consolidates and reorganizes after the attack, so the initial planning focus should be on how to execute obscuration in the close fight. This requires coordinating and employing a variety of obscuration resources and techniques in time and space across the EMS to prevent being detected and engaged by an enemy. The commander selects those times in the tactical plan where obscuration is most required, what type of obscuration is needed, and how that obscuration will enable his/her organization. When a company is given the task of conducting a combined arms breach or is assigned a task to breach, assault, or conduct an SBF as part of a larger task force, the commander considers those tactical tasks relative to obscuration type, size, and duration required to accomplish those tasks:

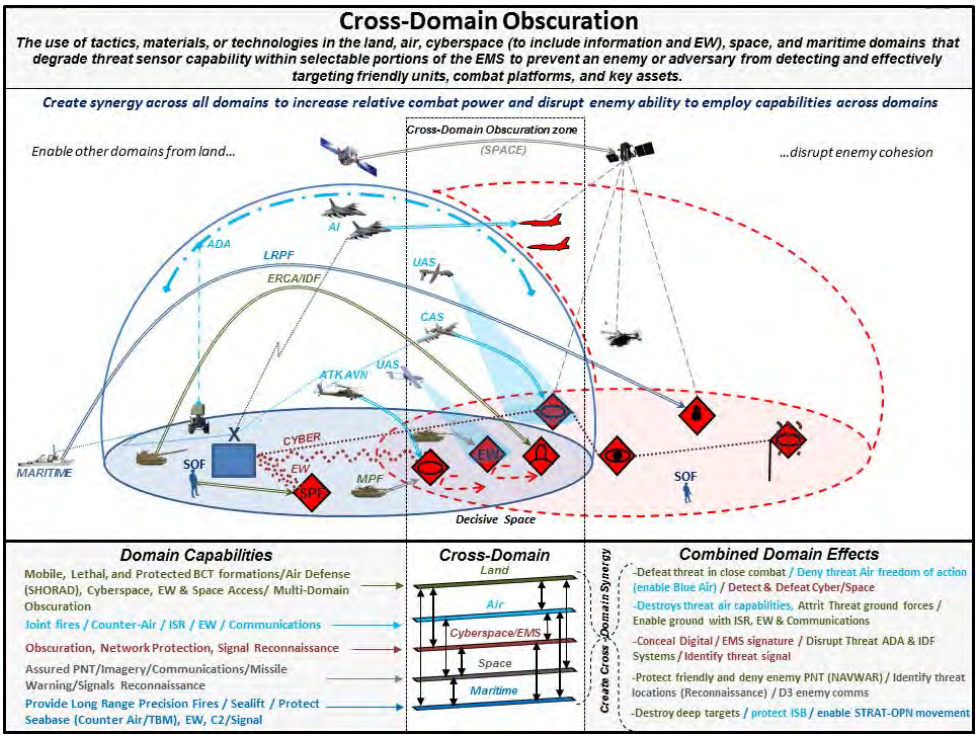
(1) Obscuration actions required in the assault position.
(2) Obscuration actions required for movement to the SBF position.
(3) Obscuration actions required in the execution of the SBF.
(4) Obscuration actions required during execution of the breach.
(5) Obscuration actions required during penetration and exploitation of the breach.

These obscuration actions must consider several things, to include:[5]

- The threat's sensors capabilities (platform, unmanned, UAV, human intelligence [HUMINT]).
- The threat's direct and indirect fire weapons ranges.
- The templated size of the threat's battle position.
- The distance from the threat's battle positions and the conventional portions of an obstacle.
- The friendly force's tactical tempo and speed for the relevant platforms and weapons systems.
- The estimated amount of time to complete friendly tactical tasks in the degraded conditions caused by friendly obscurants and other battlefield effects.

After CPT Key builds his plan around his critical task, he then needs to consider other ways to obscure his movement. One way to obscure visual signature is to break into smaller maneuver elements that utilize different routes. This requires platoons that can navigate at night using darkness as another way to prevent detection by the naked eye; however, this is a

Figure 2 — Cross-Domain Obscuration



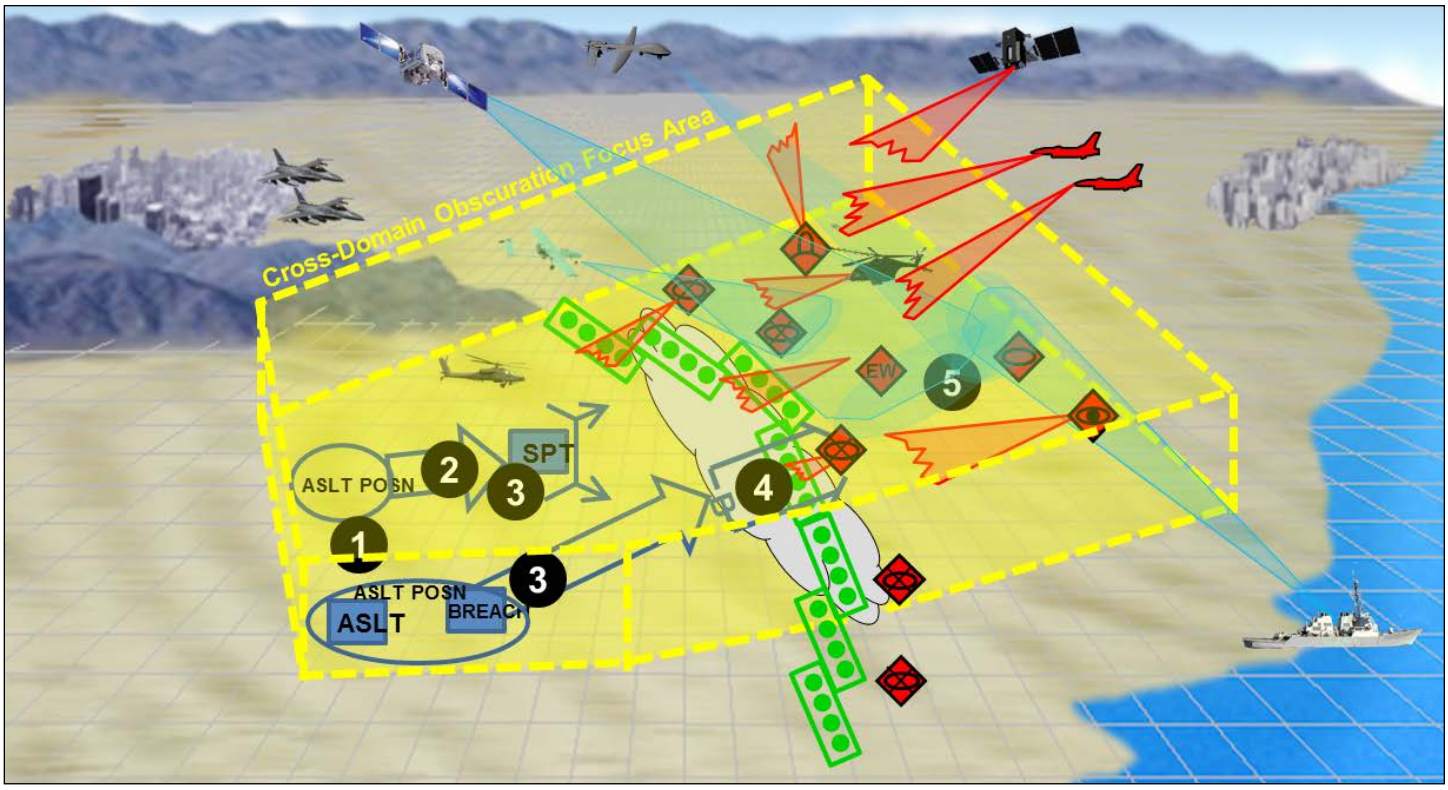


Figure 3 — Cross-Domain Obscuration Focus Area

coordinated movement that must be rehearsed. This may be just as effective as having a different asset obscure movement. Another technique is to operate in radio-listening silence using very short radio transmissions and brevity codes at precise times.

Once he completes the tactical plan and identifies the obscuration requirements, CPT Key then needs to coordinate in time and space for higher-level obscuration assets to:

• Deny/degrade detection in the cyber domain prior to moving into the assault position (computer systems) to prevent early targeting.

• Deny/degrade detection in long wave frequency spectrum (HF/VHF communications) when in the SBF position.

• Deny/degrade detection in the visual spectrum through the utilization of smoke and other physical obscurants when conducting the breach.

• Deny/degrade detection micro-wave spectrum (position/navigation and timing) after penetrating the main defensive belt and conducting follow on attacks.

Epilogue

The commanders of 4-56 IN (M) revamped their plan after CPT Romano pointed out how it would be defeated. LTC Clark prescribed communications "black out windows," and the signal officer broke out the brevity codes for reporting. LTC Clark also spoke at length with the brigade commander, who agreed to put a priority on detecting and targeting any threat electronic jammers during the close fight. The brigade commander also got the division headquarters to coordinate for obscuration of threat space and cyberspace sensors to cause further confusion during the movement to attack positions from the line of departure. All the companies were prescribed avenues of approach that were unique to them, and within those avenues of approach, there were recognizable checkpoints tied to the terrain. CPT Key directed the first sergeant to have the platoon sergeants collect all cell phones and turn them off. Then he talked with his platoon leaders and made sure they put their best land navigation leader in front in each platoon, and he further spaced the platoon movement over several kilometers. CPT Key changed the movement formations and techniques, waiting until the last possible moment to consolidate as a company. The JBC-Ps would be turned on at prescribed times during movement and only for a short duration. CPT Key knew that by considering obscuration when doing his pre-combat checks and developing the company plan (and nesting it within the battalion's plan and brigade's cross-domain obscuration plan), the enemy would not have any advantage.

Notes

[1] Worldwide Equipment Guide (WEG) 2015, Volume 1: Ground Systems.

[2] Ibid and WEG 2015, Volume 2: Air and Air Defense Systems.

[3] http://www.russianspaceweb.com/spacecraft_military.html, retrieved 13 January 2017.

[4] Field Manual (FM) 3-21.20, *The Infantry Battalion* (December 2006), section VI.

Andy Yerkes was commissioned in 1990 at Bowling Green State University as an Infantry officer. His assignments include serving as a rifle platoon leader and executive officer (XO) for a both a rifle company and HHC in the 25th Infantry Division; commander of a Bradley rifle company in the 1st Cavalry Division; battalion motor officer and assistant S3 in the 1st Squadron, 5th Cavalry; cavalry squadron XO and S3 in 10th Mountain Division; and transition team chief in 1st Infantry Division in Iraq. He retired in 2010 as a lieutenant colonel. He currently works in the Maneuver Center of Excellence's Concept Development Division at Fort Benning, GA.

Demystifying the Correlation of Forces Calculator

LTC (RETIRED) DALE SPURLIN
LTC (RETIRED) MATTHEW GREEN

A correlation of forces (COF) calculator is a tool used to help planners compare the relative combat power of two forces and estimate the outcome of engagements between them. Several versions of COF calculators are in use in the Army today. Most take the form of Excel spreadsheets, but they have been converted into Command Post of the Future (CPOF) products as well.[1] Because the Army has not adopted an official version and the versions floating around in staff officers' "kit bags" come without instructions or documentation, leaders and staff officers invariably question the validity and utility of their use. This article describes the development of the COF calculator currently in use with the Department of Army Tactics (DTAC) at the U.S. Army Command and General Staff College (CGSC). It will address the methodology used to determine the values, suggest appropriate uses of the tool, and suggest some ideas for adding professional judgment to the results.

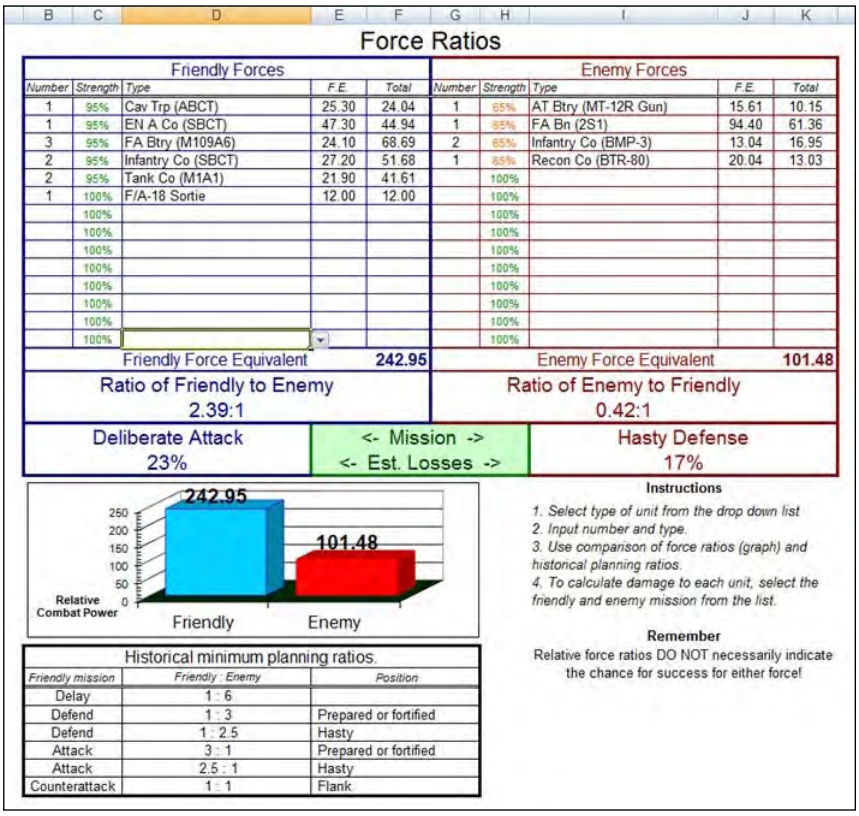
Background

The idea of force ratios (outnumbering an enemy by at least three to one in the attack for example) is found in historical text throughout the ages. When combatants were all armed symmetrically, that math was both easy and intuitive. As weapons became more complex and varied, the ability to measure and compare combat power became more challenging. Two men with a Maxim machine gun were clearly not equal to two with rifles. This complexity drove a demand for increasingly complex models and simulations to predict the outcome of battles when leaders lacked actual combat experience. Unfortunately, the tactical planner rarely has time for this complexity and has the need for a simple tool that can give the staff insight. A CGSC student handbook served this purpose through most of the 1980s.

The Soviet Union made extensive use of correlation of forces and means (COFM) computations in military decision making in the latter half of the 20th century.[2] The Soviets perceived the prediction of outcomes based on mathematical modeling as an efficient means for commanders to reduce risk and to allocate forces.[3] In 1993, LTG David Hogg, then a major, researched the topic and concluded that the Army continued to rely on several subjective methods for comparing forces. He differentiated the COFM calculator as the addition of intangible factors such as morale, training, terrain, weather, and leadership to the more quantifiable aspects of combat systems captured in the COF calculator.[4] He proposed that the Army adopt a standardized COF model based on objective data to facilitate staff planning.[5] Usage of COF and COFM calculator terms has blurred over the decades as Army doctrine codified the need for such a tool.

Field Manual (FM) 101-5, *Staff Organization and Operations*, and FM 5-0, *Army Planning and Orders Production*, described comparing force ratios in the initial step of coarse of action (COA) development. Both manuals — as well as the current manual for deliberate planning, FM 6-0, *Commander and Staff Organization and Operations* — observed that mathematical comparisons are subjective and should be tempered by judgment surrounding intangible factors as well as the number and type of vehicles in units. In 2012, faced with the requirement to re-green students on atrophied skills associated with

Figure 1 — Example Force Ratios (Microsoft Excel [R] Version)



Force Ratios

Friendly Forces					Enemy Forces				
Number	Strength	Type	F.E.	Total	Number	Strength	Type	F.E.	Total
1	95%	Cav Trp (ABCT)	25.30	24.04	1	65%	AT Btry (MT-12R Gun)	15.61	10.15
1	95%	EN A Co (SBCT)	47.30	44.94	1	65%	FA Bn (2S1)	94.40	61.36
3	95%	FA Btry (M109A6)	24.10	68.69	2	65%	Infantry Co (BMP-3)	13.04	16.95
2	95%	Infantry Co (SBCT)	27.20	51.68	1	65%	Recon Co (BTR-80)	20.04	13.03
2	95%	Tank Co (M1A1)	21.90	41.61		100%			
1	100%	F/A-18 Sortie	12.00	12.00		100%			
	100%					100%			
	100%					100%			
	100%					100%			
	100%					100%			
	100%					100%			
	100%					100%			
	100%					100%			
	100%					100%			
Friendly Force Equivalent				242.95	Enemy Force Equivalent				101.48
Ratio of Friendly to Enemy 2.39:1					Ratio of Enemy to Friendly 0.42:1				
Deliberate Attack 23%			<- Mission -> <- Est. Losses ->		Hasty Defense 17%				

Instructions

1. Select type of unit from the drop down list
2. Input number and type.
3. Use comparison of force ratios (graph) and historical planning ratios.
4. To calculate damage to each unit, select the friendly and enemy mission from the list.

Remember

Relative force ratios DO NOT necessarily indicate the chance for success for either force!

Historical minimum planning ratios.

Friendly mission	Friendly : Enemy	Position
Delay	1 : 6	
Defend	1 : 3	Prepared or fortified
Defend	1 : 2.5	Hasty
Attack	3 : 1	Prepared or fortified
Attack	2.5 : 1	Hasty
Counterattack	1 : 1	Flank

combined arms maneuver, instructors at the CGSC dusted off the old COF calculator referenced by LTG Hogg. The existing CGSC product proved to be too outdated and insufficient for the formations employed in instructional scenarios. It based unit values on a subjective comparison of Soviet-era forces against U.S. forces with BTR- and M113-equipped battalions serving as the base units.[6] An updated tool based on modern brigade combat team (BCT) and enemy formations was necessary. Furthermore, unit values needed some objective basis to ensure utility and some degree of validity in anticipating outcomes in combat operations. Finally, the tool's construction needed to use data that could be updated as modified tables of organization and equipment (MTOEs) and combat system changes occurred in the future.

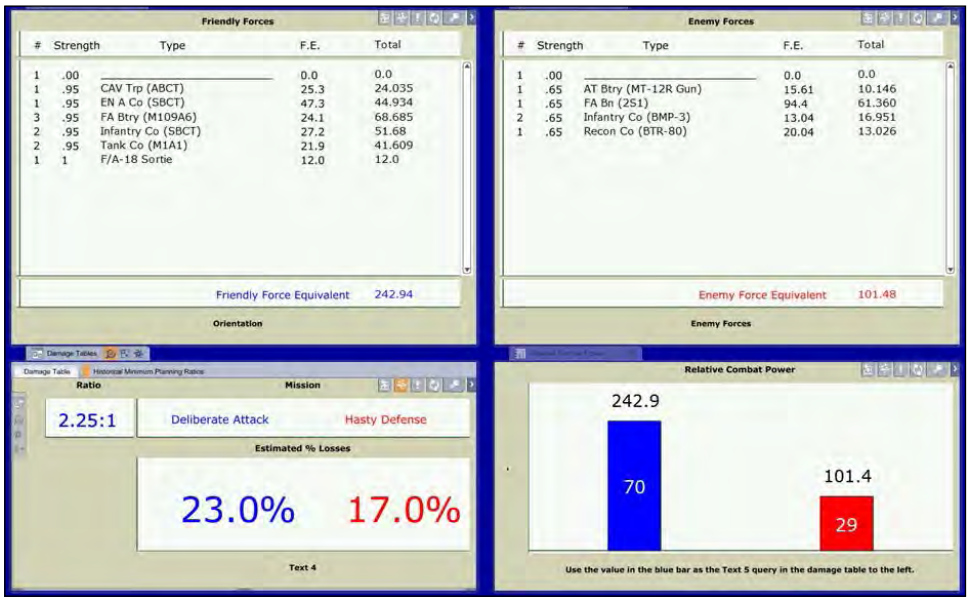


Figure 2 — Example Force Ratios (Mission Command Workstation [CPOF] Version)

To get objective values for combat systems, DTAC turned to work done in 2004 by the Training and Doctrine Command Analysis Center (TRAC). The center had analyzed the characteristics of many NATO and threat systems — principally in the areas of mobility, firepower, and protection — to create a tool to aid exercise designers in developing appropriate force mixes for their training audiences. These spreadsheets were available in the Army Knowledge Online file area and became the basis for more objective values for systems within the updated CGSC COF calculator.

Construction

With objective data in hand, CGSC instructors computed new unit values using approved MTOEs from the Force Management System website (FMSWeb) for U.S. forces and decisive action training environment (DATE) opposing force (OPFOR) tables from the Army Training Network (ATN) for enemy forces. The instructors computed a combat potential for each unit from brigade down to company level by multiplying the approved number of systems for the organization against the TRAC-developed combat potential value for the system. Individual and crew-served weapon values multiplied against the TRAC value for each system replicated individual Soldiers in the formation. Company-through-brigade echelons allowed the calculator's use in deliberate planning for brigade-through-corps operations. All system combat potentials were summed, and the value for each unit was added to the data spreadsheet in the calculator.[7]

The next area for improvement was in the damage tables that estimated results after comparing combat potentials for the two sides. The existing calculator damage table referenced historical loss rates, and losses were given in 5 to 10 percentage point increments. Force ratios ranged from 1:4 odds to 4:1 odds with few subdivisions. This often created situations where students added significant forces to an engagement with no change to the result because there was not an intermediate loss level. A CGSC student deduced the formulas for the damage value curves within the older calculator.[8] CGSC instructors expanded the odds ratios to provide more subdivisions between ratios and included a 5:1 ratio (principally for deliberate attacks) and then integrated the appropriate damage values. These simple changes gave much more granularity and credibility to the results.

Application

FM 6-0 carries forward much of the original verbiage (and warnings) from FM 101-5 in using the COF calculator during the military decision-making process (MDMP). In COA development, COF provides an objective ratio of maneuver and artillery forces for an initial assessment of combat power. Doctrinal adherence to COA development requires allocating generic forces first and then specific type units in step 3.[9] The COF calculator can assist in this step by quickly checking whether the type of unit (infantry, Stryker, armor, engineer, etc.) assigned at the end of step 3 is appropriate against the OPFOR-type unit.

The strength of the calculator, however, is in the COA analysis step of MDMP. Typical use of the calculator is at the end of the reaction portion of wargaming. When the maneuver and fire support systems of both sides are entered into the calculator, the appropriate type of operation is selected for both sides, and the results are determined for each engagement. Based on the outcomes, planners might reconsider the allocation of forces to the engagement or tactical task to create a more favorable outcome — or accept greater risk by reducing forces when those additional forces result in the same outcome. For example, in a friendly attack, the blue force might determine that 14 percent losses were inconsistent with the commander's planning guidance and therefore change the task organization to add another unit to the engagement. The enemy defender in the same engagement might determine that the reinforcing artillery allocated to the fight will not create additional effects

but raises the exposure of that unit to counterfire and possible loss, so the red force might remove the fire support unit from the calculation. By adjusting the forces in the engagement, both sides create conditions more favorable to success and in doing so come closer to the reality of the upcoming engagement. From the outcomes, sustainment planners can anticipate the number of battle losses and casualties within each engagement to validate the maintenance, recovery, and medical treatment plans. Typically, staffs make a screen shot or copy results to a new worksheet within the COF calculator to maintain a record of the outcome for each engagement during wargaming. These products can help describe the outcomes of the wargame should the staff conduct a wargame results brief with the commander. Outcomes from one engagement affect subsequent engagements so both forces have a better appreciation for the attrition that will occur prior to the decisive operation.

Concurrent with determining the outcomes, planners use the calculator values as a means to determine appropriate commander's critical information requirements (CCIR) necessary for decisions. The calculator includes a strength field for the percentage of combat power remaining in the forces allocated to the engagement. The percentage strength of a unit affects the combat potential applied in the comparison. Therefore, manipulating the strengths of units (frequently based on assumptions in planning) can identify priority intelligence requirements (PIRs) and friendly force information requirements (FFIRs) where the engagement will result in a loss for the friendly side. For example, the blue side achieved success with an estimated combat power for its formations of 90 percent based on a standard operational readiness rate and the enemy force at 75 percent based on the expectations of higher to shape for the unit's engagement. If changing friendly force combat power below 85 percent results in unacceptable losses or failure to achieve the tactical task, then a friendly unit combat power at 85 percent becomes an FFIR indicating the commander might commit the reserve or allocate additional combat power (close air support, artillery fire priority, etc.) to avoid task failure. Conversely, if enemy forces at 80 percent cause the same effects, then enemy forces at that location above 75 percent might become a PIR to again trigger a decision to shift friendly combat power to the engagement or to shape the objective prior to committing forces to the close fight. With this data in hand, staffs are better able to justify force-related CCIR to the commander and to anticipate probable decision points during wargaming.

The calculator can also facilitate decision making during execution. Current operations and future operations cells can use the calculator to compare current capabilities of forces for an upcoming engagement to determine whether the outcomes are still consistent with the plan. Not only can commanders anticipate allocating additional forces (or perhaps reallocating "excess" forces) based on the calculator outcomes, but staffs can also anticipate enemy changes in force allocation when the enemy appears to be destined for failure. This can be critical in adopting greater protective measures as an execution decision rather than learning later that a force imbalance caused the enemy to deviate from his plan necessitating an unanticipated adjustment decision for the friendly commander.

The COF calculator can provide valuable insights into an engagement and is very useful in standardizing the results of wargaming. However, it has several obvious limitations that require sound judgment from the user to mitigate. These include factors such as terrain and weather, asymmetries in the engaged forces, the echelon of formations being compared, the duration of the wargaming turn, and the physical space of the action.

The Need for Professional Judgment

The COF calculator can provide valuable insights into an engagement and is very useful in standardizing the results of wargaming. However, it has several obvious limitations that require sound judgment from the user to mitigate. These include factors such as terrain and weather, asymmetries in the engaged forces, the echelon of formations being compared, the duration of the wargaming turn, and the physical space of the action.

First, the COF calculator in its current form makes no attempt to account for the effects of terrain. All units get the maximum value of all their weapon systems regardless of range. Clearly, all units do not fight equally well in all types of terrain. We would expect significantly poorer performance from a tank platoon in a marsh or from an infantry platoon in a barren desert. When terrain provides an obvious advantage to one formation or the other, the planner can either subjectively weight or devalue the combat power before it goes into the equation or subjectively adjust the outcomes. Similarly, the calculator does not consider the effects of weather or light on operations directly. Combat potential values in the data worksheet include maneuverability and night-vision capability in the total values, but there is no bonus or penalty for restricted terrain or limited visibility operations. One or both sides might have degraded capabilities and therefore fewer effects within the calculator. This typically applies to effectiveness of close air support and attack aviation; an executive officer (XO) might degrade combat power for both by 25 percent to account for limited visibility.

Second, asymmetries in weapon system capabilities can cause skewed results. For example, anti-tank platoons or air defense artillery (ADA) platoons often have very specific munitions that are only really useful against the targets for which they are designed. While there are formulas to mitigate these asymmetries, the COF calculator does not attempt to account for them.[10] Rather, these asymmetries average out when the engagement being modeled is a combined arms engagement, and the results are generally useful. But for an engagement where one side is predominantly one kind of specialized unit,

the results do not always reflect what we would expect. For example, a U.S. tank company has a value of 23 while a self-propelled artillery battery has a value of 28. In a direct-fire engagement, the tank company clearly has an advantage, and the planner's judgment would need to take over. The calculator focuses on the close-combat engagement and is not capable of assessing the effects of air defense against aviation or of counterfire against indirect fire systems. While staff officers might have the tools available to determine probability of kill for air defense or the reaction time of counterfire assets (and therefore the potential disruption of fire support to a close combat engagement), it might be easier to agree in advance to degrade the effects of aviation and artillery by 25 percent if engaged by ADA or counterfire, respectively.

System asymmetries apply similarly when comparing elements of disparate echelons. Because the combat values reflect the inclusion of logistics and command and control capabilities within each unit, larger formations have a higher combat potential value than the sum of their subordinate combat units. Whenever possible, only compare elements using the same echelon — probably two levels down to be consistent with the doctrinal allocation of forces in COA development. If the planner compared an entire U.S. armored BCT (ABCT) to a single enemy tank battalion, the results would be skewed heavily in favor of the ABCT because it includes all the personnel and equipment of the brigade including the support battalion and headquarters. To mitigate this, the planner should break the ABCT into its component battalions and only include the combat power actually committed to the engagement being modeled.

This brings us to the fourth concern. It is important to know how long a turn your engagement is considering. If you are modeling a small tactical engagement that would play out over the course of minutes or hours, adding in all the HQ and logistics units should be avoided. If, however, you are working at a higher echelon and you are wargaming the events that take hours or days, the inclusion of HQ and logistics elements makes sense as it helps measure the unit's ability to sustain combat over time and recover from losses.

The fifth warning concerns the footprint of the units in the engagement. A common mistake as planners try to achieve favorable ratios is to keep adding units to one side or the other. This is often done without regard to how much physical space is needed to mass that combat power. When the combat power of one side becomes too dense, it may not accurately reflect the unit's ability to use all that combat power simultaneously without fratricide or significant risk to massed indirect fires. When a planner spots this happening, he or she should break the engagement into parts and model the engagement into sequential fights. An analog display with unit pieces scaled to the doctrinal footprint of the unit can help ensure only those forces that can actually engage each other are included in the calculations.

The goal for using the calculator is not so much to predict the outcomes of engagements as it is to add some objectivity to the force allocation process and to facilitate staff synchronization of the warfighting functions to achieve the effects directed in the plan. Rules of thumb for calculator shortfalls allow the staff to focus more on synchronization by accepting the calculator outcomes as good enough rather than an intellectual tug of war between the S2 and S3 over whether a system or unit was truly destroyed. Wargaming will progress more smoothly, making the outcomes more timely and synchronized.

Future

With continual changes to Army formations, the CGSC version of the COF calculator will likely go through continued revision. TRAC is developing a stand-alone version of the calculator for use by force developers, but their version will remain classified. The CGSC version is unclassified to allow maximum use in Army units and schools. CGSC's next major revision will be the addition of U.S. Marine Corps units to create a joint tool for land operations planning. The most current version will always be posted for use by unit leaders and planners to DTAC's MilSuite page in the Battlefield Calculations section at https://www.milsuite.mil/book/community/spaces/cgsc/tactics_community. Although still a tool and not a simulator to predict engagement outcomes, the CGSC correlation of forces calculator will continue as a means to better anticipate the effects of force allocations in close combat planning and to drive better tactical decision making among future staff officers and commanders.

Notes

[1] Credit to William Plotner who originally designed the CPOF application for CGSC student use; the tool has since been used throughout the Army.

[2] MAJ James K. Womack, "Soviet Correlation of Forces and Means: Quantifying Modern Operations" (Master's thesis, CGSC, 1990).

[3] Ibid.

[4] MAJ David R. Hogg, "Correlation of Forces: The Quest for a Standardized Model" (Master's thesis, CGSC, 1993).

[5] Ibid, 6.

[6] Ibid, 16.

[7] The CGSC version of the calculator has values for British, Turkish, and Azeri units to support the CGSC curriculum. Values for these units are based on known equipment and personnel strengths when available and on like type organizations when not.

[8] Credit to MAJ Brian Merkl who reproduced damage value curves to best fit the damage values in the original COF calculator.

[9] FM 6-0, *Commander and Staff Organization and Operations* (May 2015), 9-20.

[10] Womack, "Soviet Correlation," 39-40.

LTC (Retired) Dale Spurlin was commissioned as an Armor officer in 1986 and served in a variety of tank battalion leadership positions, as a staff officer on battalion through major Army command staffs, and as an observer/controller at two Combat Training Centers. He holds a PhD in education and has taught tactics at the U.S. Army Command and General Staff College (CGSC) since 2007.

LTC (Retired) Matthew K Green graduated from the U.S. Military Academy at West Point, NY, in 1990. He served as a tank platoon leader in Operation Desert Storm, a squadron operations officer in Mosul in 2005, and as a National Police Brigade advisor in Baghdad in 2008. He currently teaches tactics at CGSC.

The Medicanic Defeat Strategy:

How Small Changes Can Make a Huge Impact

SFC ROSS C. GELLER

What if every infantry platoon in every brigade combat team (BCT) in the active duty Army had a second 68W combat medic permanently assigned? What if an infantry company's casualty collection point (CCP) also had a second combat medic to assist the company senior medic? A bridge too far, you say. But is it?

Medicanic: (noun) Term in common use for a 68W combat medic who spends considerably more time in the unit motor pool maintaining evacuation vehicles than actually treating real patients or training perishable medical skills.

From October 2001 to June 2011, more than 24 percent (976 service members) died of battlefield wounds that were deemed potentially survivable during Operation Enduring Freedom and Operation Iraqi Freedom.[1]

The above statements are actually linked. One directly influences the other. Fixing the first issue may well fix the more important issue and save thousands of American lives in future combat operations.

There are many benefits to this plan. Eliminating the dreaded "medicanic" will substantially increase training time availability. Recouping this lost training time will build experience, knowledge, and better execution of critical 68W skills sets. Additionally, two combat medics working a single casualty poly trauma, as a trauma team, is far better than one alone. Many casualties exsanguinate within six minutes before their platoon medic can even reach them on the battlefield. Doubling your manpower also doubles the Class VIII immediately available for multi-patient or mass casualty (MASCAL) scenarios.

Unit tactical flexibility will be enhanced with the assault and the support-by-fire elements each supported by a medic. One moving with the platoon leader and one with the platoon sergeant. During high operations tempo (OPTEMPO) mission sets, the current modified table of organization and equipment (MTOE) cannot support conducting three squad-sized dismounted patrols daily. This is unsustainable with only a single platoon combat medic. With two, they can alternate and every patrol will have coverage. If one is injured and evacuated, the mission continues. Improved platoon-level medical readiness, sick call operations, and first responder/combat lifesaver (CLS) training are all positive by-products. When deploying to combat, what leader would not want twice the combat medics for his or her element?

How do we get there? In an airborne infantry battalion, for example, the magic number to make this work is 16. The medical platoon has eight ground evacuation platforms/field litter ambulances

Soldiers assigned to the 1st Cavalry Division Resolute Support Sustainment Brigade perform tactical combat casualty care on a mannequin during a training exercise at Bagram Airfield in Afghanistan on 17 January 2017.
Photo by CPL Michael Smith

(FLAs). Every FLA is crewed with three medical personnel. For safety, no vehicles operate without a truck commander (TC). However, the driver and TC positions are not required to be 68W personnel. These two duty positions are listed as the ambulance aide/driver within the evacuation section MTOE. By re-tasking these two positions on each FLA, we free additional combat medic resources which were not previously available. These 16 68Ws fill the second combat medic positions in the 12 rifle platoons and four company CCPs.

Optimally, the eight actual driver positions would be filled by motor transportation specialists (88Ms). This would mitigate our "medicanic" issue of 68Ws logging "Motor Pool Mondays" and endless motor stables details, etc. The 88Ms are experienced drivers who are thoroughly trained to safely conduct preventive maintenance checks and services (PMCS), fueling, operator-level maintenance, and all vehicle dispatch documentation. The TC position, riding shotgun, is best performed by the unit primary Military Occupational Specialty (MOS) holders, i.e., an Infantryman (11B). TC duties focus on vehicle/crew safety, routes/navigation, and tactical radio communications. The 16 personnel could be tasked through intra-unit borrowed military manpower (BMM) or by an MTOE change. From a medical perspective, there are four basic prerequisites for these front-seater personnel:

1. Licensed and trained to operate the vehicle safely,
2. First responder/CLS qualified to assist the combat medic,
3. Qualified on their assigned weapon to provide security for the 68W, and
4. No physical profile from wearing body armor/personal protective equipment (PPE) or from carrying/lifting a litter casualty to a top litter berth of a medical evacuation platform.

These personnel changes will re-focus 68Ws on their primary mission — patient care and not vehicle care. Combat medic mission readiness is a direct reflection of training.

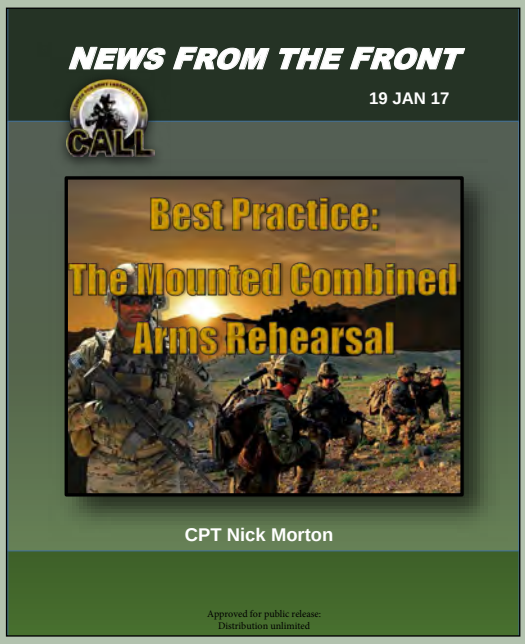
The only certainty in combat operations are casualties. Training saves lives. More training saves more lives; less training saves fewer lives.

In Extremis — It's only life and death...

Notes

[1] Brian J. Eastridge, MD, Robert L. Mabry, MD, Peter Seguin, MD, Joyce Cantrell, MD, Terrill Tops, MD, Paul Uribe, MD, Olga Mallett, Tamara Zubko, Lynne Oetjen-Gerdes, Todd E. Rasmussen, MD, Frank K. Butler, MD, Russell S. Kotwal, MD, John B. Holcomb, MD, Charles Wade, PhD, Howard Champion, MD, Mimi Lawnick, Leon Moores, MD, and Lorne H. Blackbourne, MD, "Death on the Battlefield (2001-2011): Implications for the Future of Combat Casualty Care," *Journal of Trauma and Acute Care Surgery*, 73 (Number 6, Supplement 5, 2012), S431.

SFC Ross C. Geller has served on active duty for 14 years. He served three years as a 68W instructor/writer at the Department of Combat Medic Training (DCMT) and is currently serving as a medical platoon sergeant (PSG) with the 173rd Airborne Brigade. SFC Geller is a former 11B Airborne Infantryman with the 3rd Battalion, 504th Parachute Infantry Regiment (PIR), 82nd Airborne Division, Fort Bragg, NC. His other previous assignments include serving as medical PSG with the 2nd Battalion, 508th PIR; and medical evacuation squad leader with the 1st Battalion, 509th Infantry Battalion. SFC Geller is a SERE (survival, evasion, resistance, and escape) Level C graduate, is registered with the National Registry of Emergency Medical Technicians (NREMT), and has served as an instructor for the following courses: Combat Medic Instructor Course, Tactical Combat Casualty Care (TC3), Pre-hospital Trauma Life Support (PHTLS), and Basic Life Support (BLS). He has completed one deployment to Iraq and two to Afghanistan during which he has conducted 1,275 combat patrols and treated 100 trauma casualties.



New CALL Publication Offers Lessons Learned on Mounted CAR

During its recent rotation to the National Training Center (NTC), 5th Battalion, 20th Infantry Regiment, "Sykes' Regulars," refined its use of the mounted combined arms rehearsal (CAR). The mounted CAR, when designed and executed properly, adds value to the traditional terrain-model CAR, and provides the additional benefit of exercising mission command systems.

Download the newsletter at: http://usacac.army.mil/sites/default/files/publications/NFTF_CAR.pdf

The Price of the Salute

CPT MICHAEL ANDERSON

To receive the military salute comes with a price — a heavy burden. Customarily, a salute is rendered to a superior officer, or in the case of enlisted personnel, to every officer they see. This is a sign of respect for the rank that the officer wears and not necessarily to that specific individual. Salutes are rendered to officers, and the one presenting the salute may have never seen the officer before or know at all, but still the Soldier salutes him or her. It is also customary for the saluted officer to return the sign of respect. And in this simple act — rendering and returning of the salute — lies the price and burden of the salute. That action signifies the responsibility and trust placed in the officer by the subordinate, and likewise, the return of the salute demonstrates the respect and understanding that the officer is responsible for this Soldier's well-being, success, and ultimately his or her life. This awesome responsibility that officers have — beginning from the earliest parts of their careers as lieutenants leading platoons all the way to the generals who lead armies of nations — has been summed up with the phrase "the price of the salute."

Historically, the action of the salute has been traced back to the middle ages and the days of the knight. Tradition holds that the current act of raising the right hand to the brow comes from a knight lifting the visor of his helmet so the other knights could see his face as a show of respect. Possibly, it was also done as a symbolic means to show deference in that raising one's right hand showed you were approaching without malice as typically your left hand was encased in a shield and the right hand being raised to the face showed it was free of any weapon. In later years it was associated with the practice of lower-ranking soldiers removing their hats in the presence of superiors; this existed in most European militaries until the 19th century when headgear became more complex, at which point the custom became simply reaching a hand to the brim of the headgear to signify removing it. This it is believed to have resulted in the current practice in most militaries of simply raising a hand to the brow.[1] In any case, the custom remains clear that even as it has developed many different forms varying among services and militaries around the globe, the right hand is raised in

Photos by SGT John P. Sklaney III

During a memorial ceremony at Combat Outpost Dand Patan in Afghanistan, Soldiers in Company B, 1st Battalion, 168th Infantry Regiment, 2nd Brigade, 34th Infantry Division, Task Force Lethal, render a final salute to SGT Brent M. Maher, who was killed on 11 April 2011.

A lieutenant pays his respects to SGT Brent M. Maher during a memorial ceremony at Combat Outpost Dand Patan in Afghanistan on 18 April 2011. Maher died on 11 April 2011 after an improvised explosive device detonated under his vehicle.

recognition of an officer of superior rank. Although among the first things both recruits and officer candidates alike are taught is the salute, saluting and the price of the salute still remain hazy to many who regularly engage in the practice. This is unfortunate.

Something that is commonly seen as simply ceremonial, a holdover from a more caste-like system, or even as an annoyance should serve as a reminder to both the one rendering the salute and the one returning it of the incredible bond that exists between them. This recognition should be a constant reminder of the responsibility inherent and respect therein. It should be seen for what it truly is, and that it is an honor that comes with a price and can carry a heavy burden.

Some may go their entire career and never fully understand the price of the salute — the significance of the action. For one young lieutenant, it wasn't until he was deployed to the mountains of eastern Afghanistan that he truly began to understand the price of the salute. During a mission on 11 April 2011, that lieutenant issued the operations order for Operation Rainbow Valley — he had the final say on the order of movement for the vehicles and he made the plan. And on that day, those decisions along with actions of insurgent forces in a mountain pass resulted in one Soldier from his platoon killed in action and multiple wounded (to include his platoon sergeant and platoon radio operator). He was the one responsible for (and to) his platoon and made the call to report the wounded and dead. The young lieutenant, who only minutes before had been simply driving down a rocky road, escorted the wounded to the medical evacuation helicopter and guided the group that carried the fallen Soldier to the next helicopter. And it was that lieutenant who regularly received a salute from his men and returned it.

The price of the salute and the heavy burden it carries is something he will never forget. They saluted the lieutenant because of his rank, his position, and they placed trust in him that he knew what he was doing — that he trained and prepared for it. This is a responsibility that is more than just to a mission or an order from higher, though it is certainly that too. The salute rendered by a young Soldier and seasoned NCO alike is not for the lieutenant's responsibility to a higher order or command, it is rendered for his responsibility to them. That is the price the salute carries, and on days like 11 April 2011 that have occurred throughout the history of warfare, it is a heavy burden carried by the young leaders who do what they must for the mission and to care for their men.

The burden of that salute carries on through an officer's career. And it is signified in the "final salute." The final salute is the time that young lieutenant along with the rest of his platoon saluted the memorial to their fallen comrade at their mountain outpost in Dand Patan, Afghanistan. It is that final salute a Soldier gives the flag as it is presented to the widow or the next of kin.

The salute is more than just an act, a ceremony, or an archaic holdover from another era. It is symbol. And it comes with a price. The price of the salute and the inclusive burden is one of responsibility to the subordinate Soldier for his success, his well-being, and for giving him purpose and meaning in his sacrifice. In exchange, the returned salute is one of respect for the Soldier rendering that trust, telling them that they are recognized, that they matter. The price of the salute should be known and understood and can never be forgotten. It does not need the mountains of Afghanistan to be instilled; all it needs is understanding.

Notes

[1] "Origin of the Hand Salute," U.S. Army Quartermaster Center and School, posted at http://www.qmmuseum.lee.army.mil/history/vignettes/respect1.html.

CPT Michael Anderson is currently the executive officer for Special Operations Command (Forward) - Central Africa. He previously served as commander of Company A, 2nd Battalion, 124th Infantry Regiment, 53rd Infantry Brigade. Other previous assignments include serving as a dismounted scout platoon leader and troop executive officer in C Company, 1st Squadron, 153rd Cavalry Regiment (Reconnaissance Surveillance Target Acquisition); battalion S3 plans officer in 2-124 IN; rifle platoon leader in B Company, 1st Battalion, 168th Infantry Regiment, 2nd Brigade, 34th Infantry Division (Iowa Army National Guard); assistant professor of Military Science at the University of Central Florida Army ROTC; and as a historian at the U.S. Army Center of Military History. He earned a bachelor's degree in history and political science (international relations) from the University of Central Florida, and a master's degree in military history from Norwich University.

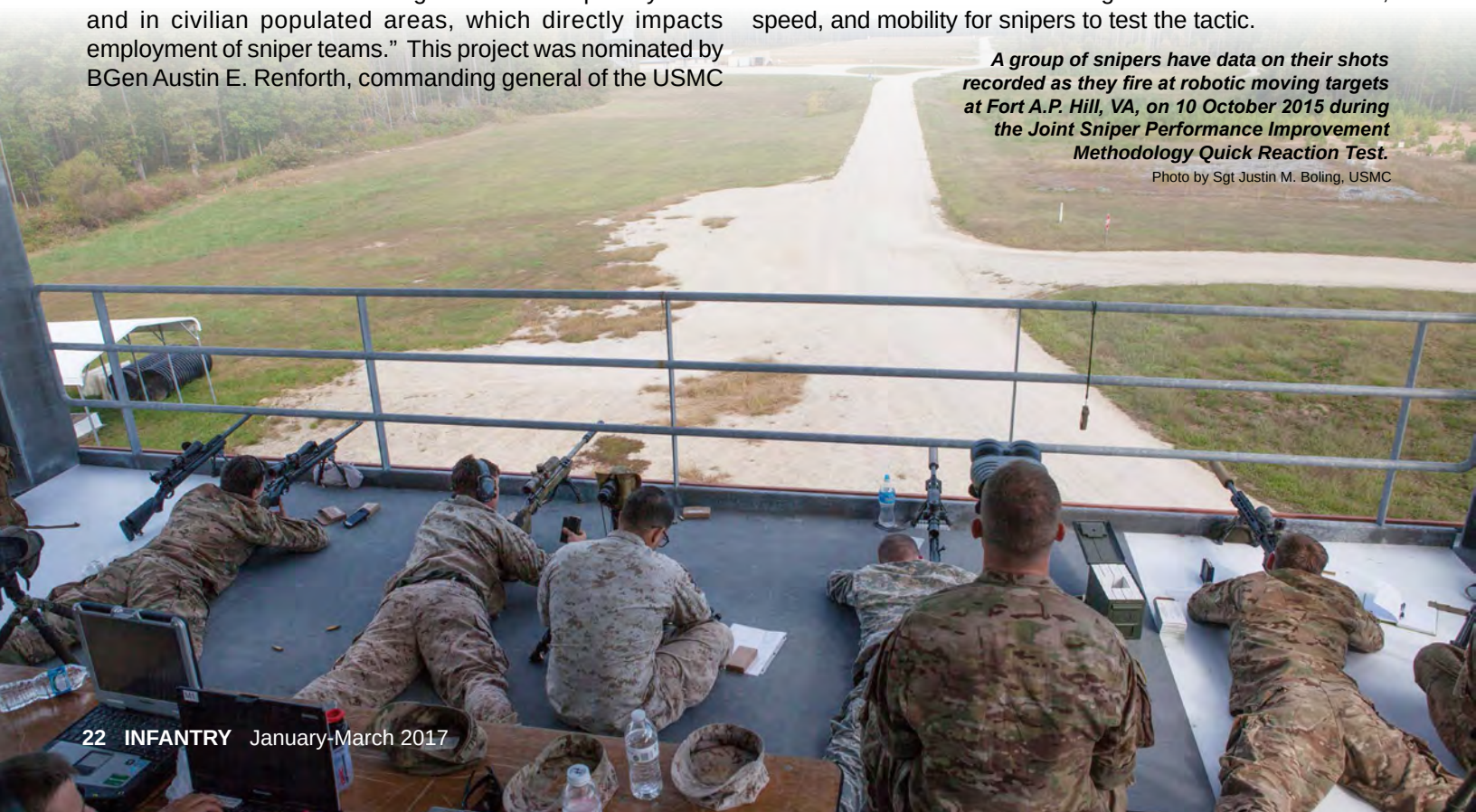
QRT Aims to Improve Sniper Performance When Engaging Moving Targets

CPT NICHOLAS C. MILANO

In Kabul, Afghanistan, a known insurgent is hurrying through a populated street preparing to ambush a coalition convoy. A U.S. sniper team has the enemy in their sights, but the insurgent is more than 700 meters away and moving erratically. A missed shot could result in collateral damage and negatively impact public opinion of U.S. forces. Does the sniper team have the training and confidence to take the insurgent down? Is the ground commander willing to accept the inherent risk to civilian life to allow his team to make the time-sensitive call in these type situations?

To assess a scenario such as this, the U.S. Marine Corps (USMC) Weapons Training Battalion (WTBN) sponsored the Joint Sniper Performance Improvement Methodology (JSniPIM) Quick Reaction Test (QRT). This test was directed on 17 October 2014 by the Deputy Director, Air Warfare, under the authority of the Office of the Secretary of Defense (OSD), Director Operational Test and Evaluation. The QRT was a multi-service endeavor to improve sniper performance when engaging moving targets (via the development of tactics, techniques, and procedures [TTPs]), a skill not practiced except under real-world conditions. Summarizing this critical capability gap, the USMC WTBN stated in its 2015 nomination packet, "Sniper teams lack TTPs to engage moving combatants beyond standard engagement distances to the maximum effective range of their weapon systems and in civilian populated areas, which directly impacts employment of sniper teams." This project was nominated by BGen Austin E. Renforth, commanding general of the USMC Training Command, and endorsed by United States Central Command, USMC Forces Special Operations Command, and the USMC Warfighting Laboratory. Test participants included sniper teams from the 10th Mountain Division, 101st Airborne Division, 82nd Airborne Division, USMC Scout Sniper School, USMC School of Infantry Scout Sniper School, U.S. Naval Special Warfare Development Group, U.S. Air Force Security Forces Center, U.S. Coast Guard, and the Tactical Law Enforcement Detachment. Range facilities were provided by the U.S. Army's Asymmetric Warfare Group at Fort A.P. Hill, VA.

During the yearlong test, the QRT team researched existing (or the lack thereof) sniper doctrine and training methods focusing on the engagement of moving targets. The team and community of interest then convened multiple Joint Warfighter Advisory Groups (JWAG) meetings, table top exercises, and risk reduction events. After these developmental events, a TTP was developed and implemented at the testing site for data collection and validation. During field test one at Fort A.P. Hill, 26 snipers from the Army, Navy, Air Force, Coast Guard, and Army National Guard utilized six different weapons systems and fired more than 8,000 rounds at targets. Those targets were human-like, mobile mannequins embedded with pressure sensors to register lethal and non-lethal hits and mounted on a four-wheeled chassis. This design allowed for realistic size, speed, and mobility for snipers to test the tactic.



A group of snipers have data on their shots recorded as they fire at robotic moving targets at Fort A.P. Hill, VA, on 10 October 2015 during the Joint Sniper Performance Improvement Methodology Quick Reaction Test.
Photo by Sgt Justin M. Boling, USMC

Photos courtesy of author

Above, a sniper aims his rifle during the Joint Sniper Performance Improvement Methodology Quick Reaction Test. The yearlong test aimed to improve the skills of snipers across all United States government agencies. At right, the robotic moving targets used during testing were human-like, mobile mannequins embedded with pressure sensors to register lethal and non-lethal hits targets.

After evaluating the effectiveness of the TTP and conducting another round of JWAG meetings, the TTP was refined and tested again. During the second test, shooters were instructed on and familiarized with the TTP, then performed a series of engagements on the remote moving targets, firing more than 8,000 rounds. Surveys were then conducted to determine the efficacy of the new engagement methods. Based upon findings and conclusions, the TTP was finalized and distributed to the participating organizations for eventual implementation at sniper training schools within each service.

The TTP developed during the JSniPIM QRT established a set of techniques which apply to and improve upon the third and fourth steps of the four-step engagement process of identify, range, estimate speed, and engage target. It was based on the quantitative data, observation of effective sniper teams, and the consolidation of best practices

Ultimately, the JSniPIM QRT TTP cannot replace the benefits of frequency and repetition at the range; however, many snipers may also not have the range, ammunition, and target resources to practice this type of shooting. The TTP provides the foundation for sniper teams to begin understanding the dynamics of engaging moving targets and for commanders to employ sniper teams in difficult environments with the utmost confidence.

A QRT provides $1 million of contract support spanning one year with a rapid ramp-up to solve a joint (two or more services) critical capability gap with a non-material solution. The objective is to focus on rapidly solving problems currently affecting the warfighter. All tests are OSD-funded and allocated following a nomination process that determines feasibility, testability, and urgency. If the nomination is a joint problem and will aid warfighters through capabilities improvement, the project will be considered. Typical test-generated products are TTP; concept of operations; doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF) analysis, and handbooks. If you would like more information on the JSniPIM QRT or are interested in nominating a joint project, go to https://www.atec.army.mil/jte/index.html.

CPT Nicholas C. Milano is a Quick Reaction Test (QRT) project manager assigned to the Joint Test Element (JTE)–Aberdeen, operating under the operational test agency oversight of the U.S. Army Test and Evaluation Command, Aberdeen Proving Ground, MD. CPT Milano is an Engineer officer and was commissioned by the U.S. Army Officer Candidate School in 2008. His previous assignments include serving as U.S. Army Aberdeen Proving Ground Headquarters and Headquarters Company commander, a basic training company commander, route clearance executive officer, and route clearance platoon leader.

SUBMIT ARTICLES TO *INFANTRY*

Infantry Magazine is always in need of articles for publication. Topics for articles can include information on organization, weapons, equipment, and experiences while deployed. We can also use relevant historical articles with emphasis on the lessons we can learn from the past.
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Part I

Infantry Attacks at NTC

COL BRIAN J. HARTHORN
LTC MICHAEL S. FARMER

Author's Note: *They say imitation is the greatest form of flattery. With our apologies and utmost respect to Field Marshal Erwin Rommel, we offer the readers of* INFANTRY *Magazine some observations gleaned from our experiences coaching, teaching, and training rotational units during the conduct of both force-on-force and live-fire operations in a training area slightly larger than the state of Rhode Island. During seven rotational decisive action battles, we hope to share with you some lessons learned, best practices, doctrinal discussion, and the opportunities offered here at the National Training Center (NTC) at Fort Irwin, CA, — the "crown jewel" of the Army.*

Remarks are appended to the description of each battle in order to extract worthwhile lessons from the particular operation. The rotational notes accumulated by two Infantry officers serving with the Tarantula Light Task Force Training Team (Airborne) will show the essential nature of conducting combined arms operations as the NTC patch symbolizes. The NTC's complex, high-fidelity training environment boasts the mountain ranges and maneuver corridors that you would expect to encounter in Wardak or Ghazni provinces of Afghanistan, the largest urban operations training facility in the Department of Defense, and the most recent addition — an austere C-17 capable airfield; all of which require infantry forces to clear, seize, or secure either as the decisive operation or in support of mounted forces. The following examples are proof of the tremendous combat power of American Infantrymen and how they are a vital component of the combined arms team, regardless of the terrain or the adversaries consisting of both regular and irregular forces operating on their "home turf." Finally, we hope this article makes a contribution toward educating the force with a specific focus toward training brigade combat teams (BCTs) for combat in unified land operations in a decisive action training environment (DATE). Enjoy!

Battle for Granite Pass: Engagement Area Development – "Step Zero"

Photos courtesy of authors

The Granite Pass Complex connects the central and northern corridors as viewed from the south.

The Granite Pass complex loomed large to the north. With a daunting ridgeline running east to west with canalizing terrain connecting the northern and central mobility corridors, it consisted of the main pass and three other smaller choke points in the Granite Mountains. The Stryker infantry battalion task force was assigned the mission of defending the pass complex in order to protect the northern flank of the brigade and, if the defense was successful, possibly seizing it in the future to support subsequent offensive operations. Due to weather and competing collection priorities across the BCT, the battalion did not have an accurate assessment of the enemy disposition in vicinity of Granite Pass. The commander was concerned that the battalion would not get started with the steps of engagement area development if the enemy owned key terrain in the passes. The battalion treated the operation like a movement to contact. The scout platoon initiated movement at EENT (end of evening nautical twilight). Bravo Company was next in the order of movement using a forward security element-advance guard (FSE-AG) formation. The probable line of deployment (PLD) was drawn up more than four kilometers from the Granite Pass to account for the possibility that the enemy would have AT-5s in vicinity of that key and canalizing terrain. The commander gave guidance to have the Infantrymen dismount from an objective rally point (ORP) shy of the PLD. He believed they would make initial contact and realistically destroy the lead enemy platoon and fix the remainder of a company-sized force. That would help develop the situation in order to figure out how to subsequently maneuver Alpha and Charlie Companies against the remaining enemy forces if necessary. If Bravo didn't make contact, then they would continue to secure the pass while the other two companies transitioned into engagement area development. Particular emphasis was given to ensuring the battalion mortars were third in the order of movement right behind Bravo so they were within range to echelon fires in the likely event that Bravo made contact.

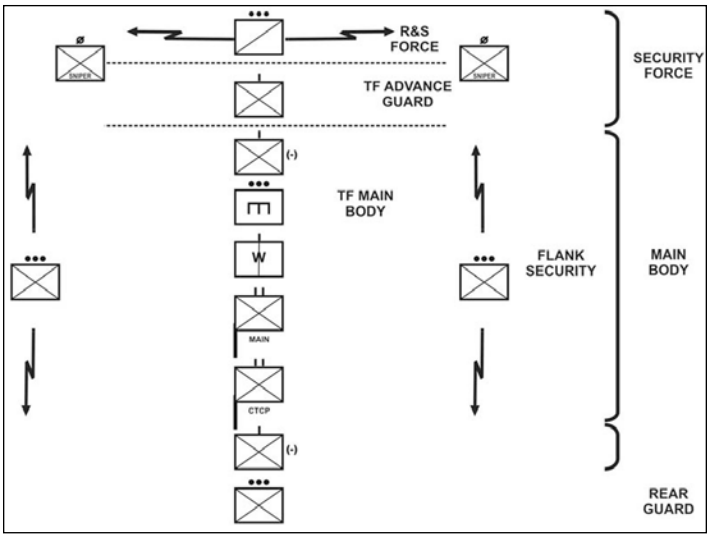

Figure 1 — Battalion Movement to Contact (FM 3-21.20)

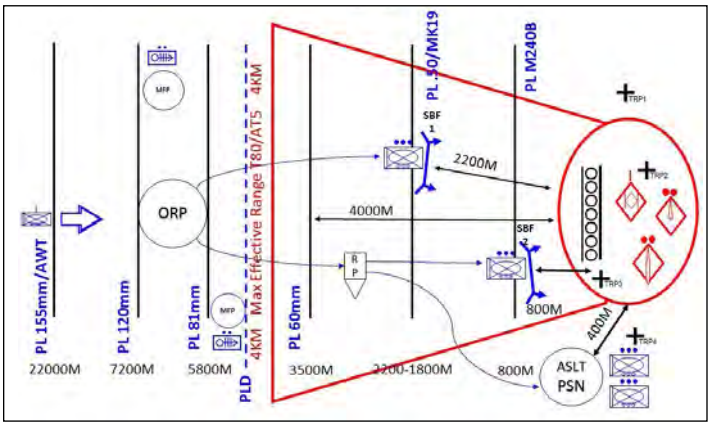

Figure 2 — Maximum Engagement Line (MEL)

A MEL is the linear image of the farthest limit of effective fire for a weapon or unit. This line is determined both by the weapon's or unit's maximum effective range and by the effects of terrain. For example, slope, vegetation, structures, and other features provide cover and concealment that may prevent the weapon from engaging out to the maximum effective range.

— FM 3-21.10, The Infantry Rifle Company

The temperature dropped more than 20 degrees in less than an hour as the sun set that evening. Mountains previously baking in the hot, orange sun now turned purple in the shadows. It was still in the mid-70s, but compared to the mid-90s experienced just an hour prior the men shivered a little bit as they adjusted to the drastic temperature drop while conducting final pre-combat inspections. Shortly after 2000 hours the scouts started their movement using the cover of darkness to conceal themselves as they departed the Iron Triangle, inching their way north along the 114-wadi (a system of deep wadis that handrail the complex terrain on the south and eastern side of Granite Pass). They weren't able to enjoy the benefits of riding in their Stryker reconnaissance variants (RVs) for very long as they dutifully dismounted at the PLD. Now dismounted on foot, they "pulled" their vehicles along in overwatch. The Strykers would trail approximately 600 meters

If friendly forces cannot effectively range enemy positions while outside of the enemy MEL, then they must either:

1) Dismount Infantry outside of the MEL to maneuver to a position of tactical advantage, or

2) Mitigate the distance they must close on the enemy until they can effectively range them utilizing available suppression (both direct fire and indirect fire), obscuration, cover/masking terrain, concealment/limited visibility, dispersion, or other similar means.

Infantry should dismount for increased survivability and maneuverability when mitigation cannot be achieved.

or one intervisibility line behind their scouts. This facilitated the scouts in finding the enemy first without risking the loss of their RVs to enemy anti-tank systems. It also kept their Stryker-mounted M2 .50 caliber machine guns close enough to provide suppressive fires should they make direct fire contact with enemy infantry. Bravo Company impatiently waited until 2330 hours before initiating its own movement. Start too soon and the scouts wouldn't have a chance to infiltrate ahead of them or provide them with information on any enemy that might be present in the pass. There was an added benefit to giving the scouts a chance to do their job. It allowed the Infantrymen to stay mounted a little bit longer. Fresh legs would be nice if this movement to contact turned into a "fight to daylight."

It was now after midnight, and the scouts were climbing over the boulders separating the main pass and the smaller pass called "Granite West." Less than 200 meters away, the scouts noticed movement to their north. Shots rang out; they were in direct-fire contact. The scouts hunkered down behind some boulders and immediately began calling for fire. The battalion mortars following Bravo Company went into action. The enemy answered back with their own mortars, but it was difficult to pinpoint locations for two scout teams. Bravo Company had stayed mounted following in trail behind the scout RVs, but now they dismounted their Infantrymen once they received reports of the direct-fire contact. There was no point in risking the loss of rifle squads in the backs of their Infantry Carrier Vehicles (ICVs) to an enemy AT system now that they had a better idea of where the threat was located. They were already within the maximum engagement lines of any existing AT-5 or AT-13 systems. Still it would be another 90 minutes before the Infantrymen could close the distance between themselves and the scouts. The scouts had to survive using their radios and supporting 120mm mortars. Bravo Company transitioned to a company wedge formation with the two advance guard platoons trailing the forward security element (FSE) platoon. The scouts talked the FSE onto their position, and a little after 0200 the FSE made direct-fire contact with the enemy infantry. Scouts continued to call for supporting mortar fires while the lead platoon got its M240Bs into action. Effective suppressive fires from the medium machine guns allowed the Bravo Company commander to maneuver his other two platoons to the flank of the enemy which he now determined to be a company-sized force. The battalion mortars were having good effects. Tarantula observer coach/trainers (OC/Ts) clambered across the rocks reporting battle damage assessments (BDA) for both sides. Enemy forces that weren't destroyed by the mortars were forced to reposition. Every time they had to reposition meant a missed opportunity to employ their AT-5s and AT-13s against the Stryker vehicles which were now visible in the moonlight. First came the 120mm mortars, then .50 cal. fires from overwatching Strykers, then the roar of the M240Bs alternating fires by section, and finally the sound of voices… the voices of rifle squads as they bounded between the huge boulders of the pass complex. It was too much, and the enemy infantry force did not have prepared positions. They had been conducting a movement to contact just like the rotational unit. Alpha Company was later committed into the fight in order to maintain the tempo of the attack. The fighting continued into the early morning with the remaining enemy forces breaking contact shortly after BMNT (begin morning nautical twilight). The Stryker task force had two platoons worth of casualties that it had to evacuate as well, but it retained control of the pass complex. The Infantry Soldiers were exhausted after fighting all night, bounding over and around "dinosaur-sized boulders" to close with and destroy the enemy. ICVs came forward to resupply fatigued rifle and weapons squads with the two most important classes of supply (water and ammunition) to keep them in the fight. Later that morning, the battalion commander would gather his company commanders and selected staff members to a point on the ground in the middle of the engagement area and identify it as the location where he wanted to destroy the enemy — step three of engagement area development. However, they wouldn't have gotten to step three if they hadn't first accomplished "Step Zero — Establish the Security Zone."

Observations — *Step three of engagement area development — identifying where you want to destroy the enemy — is arguably the most important step of planning and preparing for defensive operations because it shapes and drives all of the other steps of the development process. Emplacement of key weapons, obstacles, and supporting fires all revolve around step three. Rotational units often become so focused on following the steps of engagement area development that they forget the first and most important priority of work: establish and maintain local area security. During defensive operations, we often refer to this as the non-doctrinal step zero of engagement area development — also known as establishing the security zone. Only after a security zone is established can a unit accomplish the other steps of engagement area development. In this particular vignette, the rotational unit actually spent nearly 36 hours fighting to clear the Granite Pass complex of enemy infantry forces. Subsequently, the task force commander was able to accomplish the remaining steps of engagement area development; however, the unit would not see the enemy's main attack by their assault or exploitation forces enter into their developed engagement area. Why? Their security zone fight was so effective at stripping the enemy of their reconnaissance*

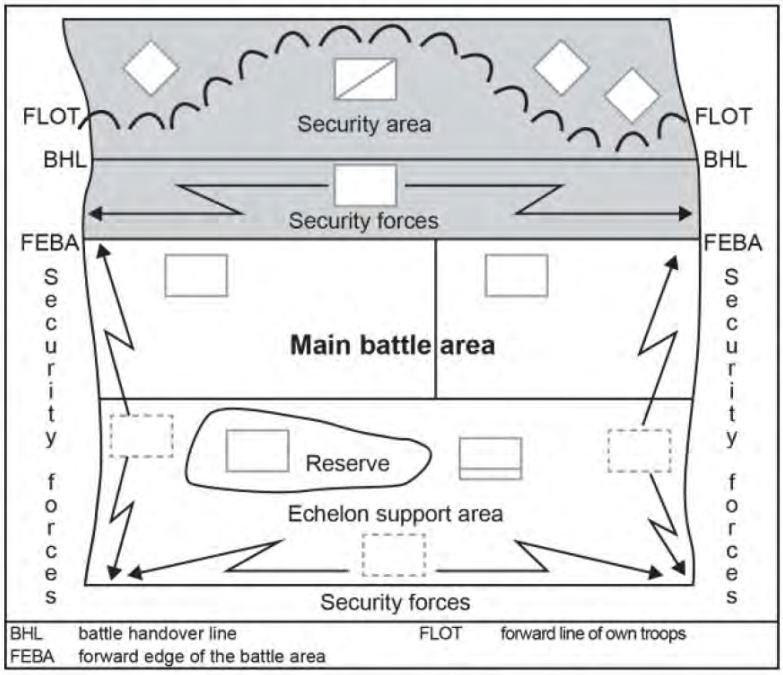

Figure 3 — Organization of Forces for an Area Defense — Contiguous Area of Operations (FM 3-90-1)

Notice highlighted security area and security forces. Security proves essential to both offensive and defensive operations.

assets and infantry forces in vicinity of the pass complex that the opposing force (OPFOR) commander decided to attack elsewhere within the rotational unit brigade's area of operations where he deemed he had a greater probability of success. Not only had the successful security zone fight set conditions for the battalion to conduct engagement area development, but it had also taken away maneuver options for the enemy commander. This rotational unit also correctly identified that its lack of understanding of the enemy's disposition necessitated a movement-to-contact approach. It utilized its organic scouts followed by a platoon-sized forward security element and subsequently a company minus-sized advance guard to make contact with the smallest element possible. This allowed the task force commander to develop the situation, employ supporting 120mm mortar fires to suppress both enemy infantry and AT systems, and then maneuver the remainder of his task force against the enemy. His ability to compartmentalize (or phase) this operation (first conducting a movement to contact, followed by establishment of the security zone, and finally the execution of the remaining steps of engagement area development) allowed him to not only prepare for a defensive operation but also better posture his force to resume offensive operations when the opportunity presented itself later in the fight. Thus, what initially seemed like a defensive operation turned into "Infantry Attacks!" at NTC.

Defense of the Siberian Ridgeline: Seizing the Dominant Terrain through Dismounted Night Infiltration

The sun had just set and it was surprisingly busy for that time of the evening... maybe it just seemed busy. Maybe a better adjective to use would be noisy. The sound of M1 Abrams tanks and M2 Bradley Fighting Vehicles (BFVs) in the distance filled the air. A company of dismounted OPFOR Infantrymen completed their last pre-combat inspections and prepared to cross the line of departure (LD). Temperatures were cooling and an early autumn breeze would make tonight's infiltration somewhat pleasant for the grunts carrying combat loads weighing in the neighborhood of 80 pounds. The rotational unit's cavalry squadron had established a security zone along the Siberian Ridgeline to facilitate engagement area development by the maneuver battalions to the south. They were feverishly constructing one-tier, hull-down vehicle fighting positions and emplacing triple-strand concertina wire obstacle belts to defend the reverse slope of the ridgeline. They intended to mass the effects of their direct and indirect fires in an engagement area that stretched from the John Wayne foothills in the west to the Schoolbus Wadi in the east. A supporting effort defended a smaller but separate engagement area in the Red Lake Pass, a narrow mobility corridor canalizing vehicular traffic to the point where an understrength company could easily defend it provided they covered their obstacles with effective direct and indirect fires. The defensive preparations were indeed formidable which made tonight's infiltration even more critical.

The OPFOR rifle company commander understood the importance of his unit's mission. His Soldiers were to infiltrate high above the John Wayne Pass, destroy enemy forces defending from the western battle position, and create a point of penetration (PoP), setting the conditions for follow-on mechanized forces to exploit the PoP the following morning. The Infantrymen stepped off from the town of Razish shortly after EENT. It was a six-kilometer dismounted movement with little illumination that evening. Illumination is a double-edged sword.

The dark spots of the John Wayne Foothills and the Siberian Ridge beyond the ridgeline in the foreground provide a much clearer perspective of the dominant terrain. While the foothills are key terrain in the direct-fire mounted fight, they cannot be controlled without the dominant terrain above them.

Good illumination means faster movement but also increases the risk of being compromised. Poor illumination equates to a slower rate of movement but assists with the Infantrymen's ability to infiltrate stealthily to their assault positions. Moving at a rate of approximately one kilometer per hour, the company moved across the Hidden Valley and started trudging its way up the steep slopes of the north side of Tiefort Mountain. Once the Soldiers reached an elevation high enough to overlook the surrounding ridgelines defining the Hidden Valley, they then turned east and began creeping their way toward the western mouth of John Wayne Pass. It was tough, slow walking. With 80 pounds of water, PKM machine guns, AT-13s, three AT-5s, tripods, 60mm mortar tubes, and ammunition, the Infantrymen walked with the left foot striking the slope below the right foot to prevent them from tumbling down the mountain.

They arrived at their destination two hours before BMNT. The OPFOR rifle company was now high enough to see the John Wayne Pass and nearby foothills below, and most importantly, to observe (and engage) the M1s and M2s tucked into various wadi systems believing they were in a covered position of relative security. The rifle squads silently deployed to the left and right flanks to secure the company's main effort for this mission; their weapons squads manned the machine guns, AT-13s, and three AT-5s capable of reaching out to engage a tank at nearly four kilometers. The company commander reminded his squads to hold their fire until he got confirmation that they were all in position. He wanted the first volley of AT-5s and AT-13s to be fired simultaneously before he permitted subordinate leaders to fire at will. The platoon leaders sequentially reported they were in position. The commander moved from one position to the next designating target arrays for his AT gunners so they could achieve true massing of fires. Two AT rounds on the same M1 or M2 was one too many. He wanted every round to count.

Then, as the horizon began revealing the faint hint of pink indicating BMNT was at hand, the company commander gave the word to unleash hell. In less than 10 minutes, the outcome was academic. A mechanized company team's worth of combat power lay in ruins. The rotational unit's rifle squads — which were fortunate enough to be dismounted during the time of the attack — looked upward from what they previously thought was key terrain on the John Wayne Foothills. Now, it didn't seem that way as they watched the puffs of smoke and grenade simulators indicating signatures from the enemy infantry firing their AT-5s and AT-13s. Their vehicles were destroyed and there was no place to go except up. They must now attack uphill to destroy the immediate and lethal threat that had occupied the true key terrain the night before. As if to reinforce the point, OPFOR mortars began providing incentive to the rotational unit's Infantrymen to get moving. The rifle squads began trudging up the eastern base of Tiefort Mountain. OPFOR AT gunners continued to engage and destroy nearby M1 tanks and M2 BFVs, and now their PKM gunners deployed a wall of steel onto the heads of the approaching Soldiers. It seemed like for every rifleman that advanced another two to three fell as casualties. Surprise had been near complete, and they simply couldn't get their own

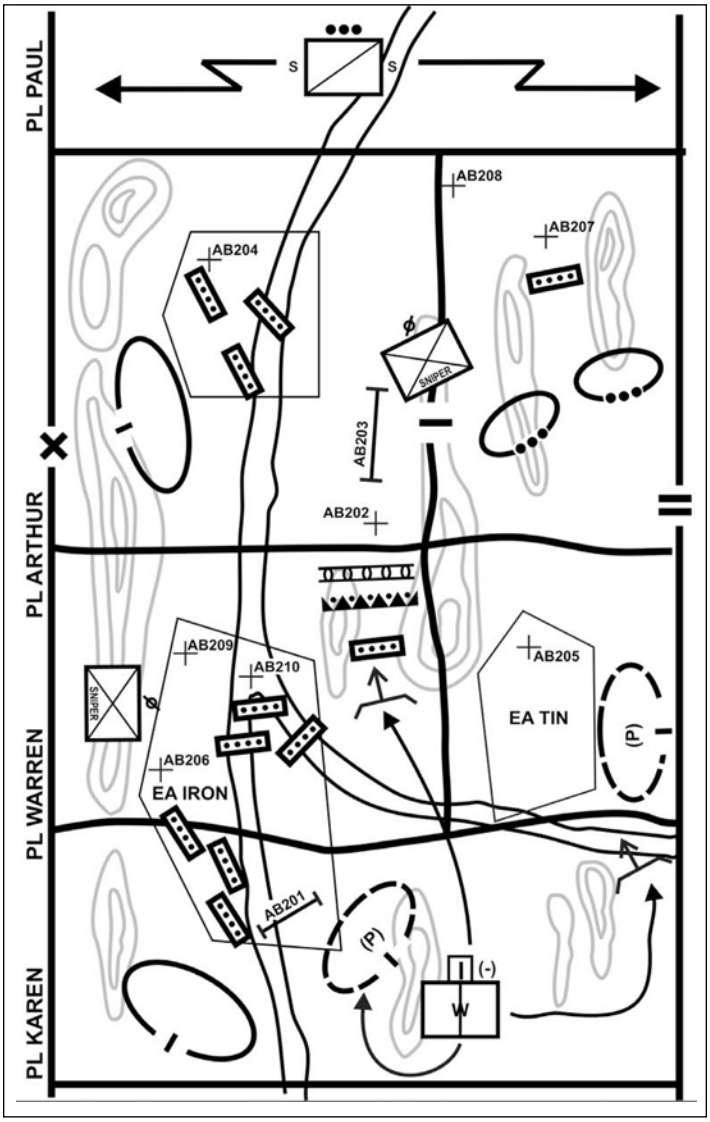

Figure 4 — Defense of an Area of Operations (FM 3-21.20)

This figure clearly shows the tying obstacles to the terrain and planning for the integration of indirect fires.

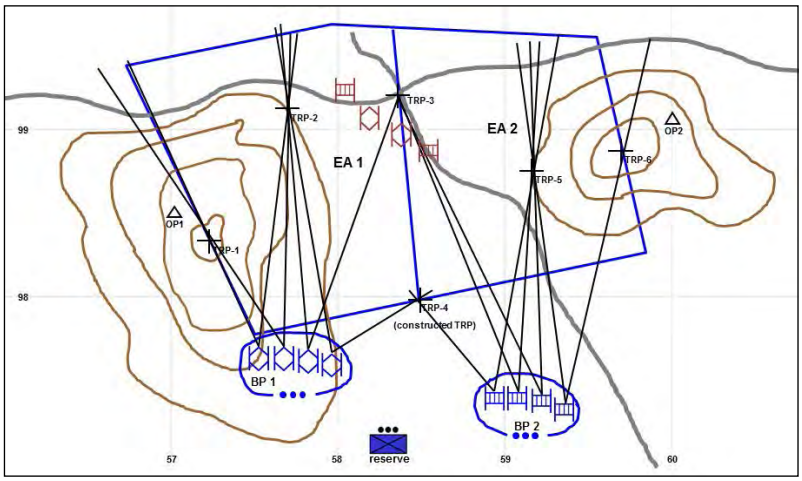

Figure 5 — Engagement Priorities

Engagement priorities entail the sequential ordering of targets to be engaged. They serve one or more of the following critical fire-control functions: prioritize targets, employ best weapon for target, and/or distribute unit's fires. **— FM 3-21.10**

M240Bs in a position to suppress the OPFOR that owned "the high ground." Suppressive fires from their M2 BFVs were not available because they were destroyed during the initial AT volley fires. The OPFOR rifle company commander called his boss; conditions were set for the mechanized force to exploit the newly created point of penetration in vicinity of the John Wayne Foothills. T-80s, BMP-2s, and BRDM-2s began pouring through the Hill 824-781 East gap and down the Siberian Highway. The rotational unit battalion attempted to reposition its M1 Abrams and M2 BFVs from the eastern battle position in vicinity of the Schoolbus Wadi over to the west to block the point of penetration. It was too late. The tanks and BFVs were caught in the open fighting in two different directions. They had to contend with the enemy mechanized force to their north and the OPFOR AT gunners high above on the base of Tiefort Mountain to their west. Another mechanized company team repositioned and was further attrited, contributing to the battalion's sequential defeat in detail. The OPFOR mechanized force continued driving south to subsequent objectives. It was a good morning that made up for a long night.

Observations — *Units must identify key terrain that dominates adjacent mobility corridors. In this vignette, the rotational unit mistakenly identified the low-lying John Wayne Foothills as being key terrain dominating the eastern mouth of the John Wayne Pass as well as the Siberian Highway. These low-lying foothills are certainly significant cover and concealment for mounted vehicular platforms but are relatively insignificant when compared to the key terrain at higher elevation seized by the OPFOR in this vignette. The rotational unit was content to occupy the foothills with Infantrymen and vehicular platforms, but it did not account for the key terrain at higher elevations to its flank. By the time leaders identified the threat above them, it was too late to reposition forces to mitigate the tactical risk presented by the enemy rifle company.*

Once key terrain is identified during mission analysis, the unit must then account for that key terrain during the course of action development and course of action analysis (wargaming). In this example, the OPFOR identified the high ground on the eastern base of Tiefort Mountain as being key terrain that dominated the John Wayne Pass, the nearby foothills, and the Siberian Highway high-speed avenue of approach. Infiltrations are hard work, and the OPFOR infantry invested the time and effort during a night infiltration to seize this key and dominating terrain. Infiltrations during hours of limited visibility allow infantry units to compensate for their slower rates of movement and lack of armored protection in comparison to mobile mounted forces. In this case, the rotational unit was initially closer in proximity to this key terrain, but the OPFOR rifle company simply outworked its rotational unit counterparts to get to this key terrain first. The dividends were destruction of nearly two mechanized company teams and creation of a point of penetration exploited by follow-on mechanized forces.

Urban Assault on Razish

Razish is huge. Consisting of more than 500 buildings and compounds, the city can easily consume an entire brigade combat team. To say that clearing the city is a complex endeavor would be an understatement. The Stryker battalion

Infantry Soldiers secure dominant terrain with their most lethal weapon against a motorized infantry battalion — the Javelin. Due to a chemical, biological, radiological, and nuclear (CBRN) threat, the Infantrymen were often required to move wearing protective gear. The Soldiers in this photo are wearing Joint Service Lightweight Integrated Suit Technology (JSLIST) gear.

The National Urban Warfare Center, also known as the Atropian city of Razish, is viewed from the south. The prison complex is seen at the bottom left with the rock pile to its immediate north.

commander wasn't sure where to start. Gaining a foothold in the city would be tough enough. Then there was the question about how to maintain tempo once clearing operations commenced. How would the battalion's actions be synchronized with its adjacent battalion task force that was simultaneously clearing the city from west to east along their northern flank? What if the enemy decided they wanted to fight in depth along the approach march before ever getting to Razish? On the night before the attack, the task force scouts infiltrated in separate sections to key terrain overlooking Razish from both the west and south. They had nearly 24 hours to observe Razish and report on patterns of life and activity. The good news was that they confirmed little enemy presence along the battalion's planned avenue of approach through Hidden Valley. That didn't mean the enemy was absent. It likely meant that enemy scouts were content with remaining undetected in order to trigger enemy indirect fires against the main force on the following night. The bad news was that the enemy had surrounded the city with protective mine and wire obstacles. It was going to be tough to gain a foothold.

On the following night, two platoons of combat power from Charlie Company dismounted their Strykers out of direct-fire contact at an ORP along the southern wall of Hidden Valley. From there they infiltrated to their planned support-by-fire (SBF) position on a ridgeline south of Razish in order to suppress enemy forces to the north. This support element consisted of a single rifle platoon and a platoon of three weapons squads harvested from across Charlie Company; both platoons were under the control of the company executive officer. This gave the element enough combat power to fight for the SBF position as well as performing its primary mission of suppressing enemy forces in support of the battalion's decisive operation. Furthermore, that left the remaining two understrength rifle platoons under the leadership of the company commander as an additional "maneuver force" that could be utilized in a follow-and-assume role during operations in Razish. It was fortuitous that the support element had the additional rifle platoon because it did indeed make contact with six enemy scouts during the approach to the SBF position. After a short exchange of small arms direct fire, the enemy scouts realized that they were outgunned and broke contact.

Second in the order of movement, Alpha Company dismounted its Strykers out of direct-fire contact at an ORP along the northern wall of Hidden Valley. From there a rifle platoon established an SBF position on the key terrain high above the eastern mouth of the valley that had been cleared by the scouts the night before. With their M240Bs, the Soldiers suppressed enemy forces in the vicinity of a prison compound to facilitate the remainder of the company, which was breaching the protective obstacles. They started with 10 seconds of simultaneous fires at a cyclic rate, and then the gun crews transitioned to alternating fires at a sustained rate for the next six minutes. Once the weapons squad leader observed the absence of enemy figures in the west-facing apertures, he ordered his guns to go into a "watch and shoot" mode suppressing targets of opportunity while also conserving ammunition. The company had been augmented by attachment of an engineer platoon and a section of Mobile Gun System (MGS) Strykers. The MGS platforms blew holes through the obstacles as well as suppressed any west-facing apertures from the prison compound. Meanwhile smoke obscuration delivered by pre-planned field artillery targets on the eastern edge of the prison compound provided attached Sappers with their opportunity. The Sappers utilized the obscuration and suppressive effects from both the SBF

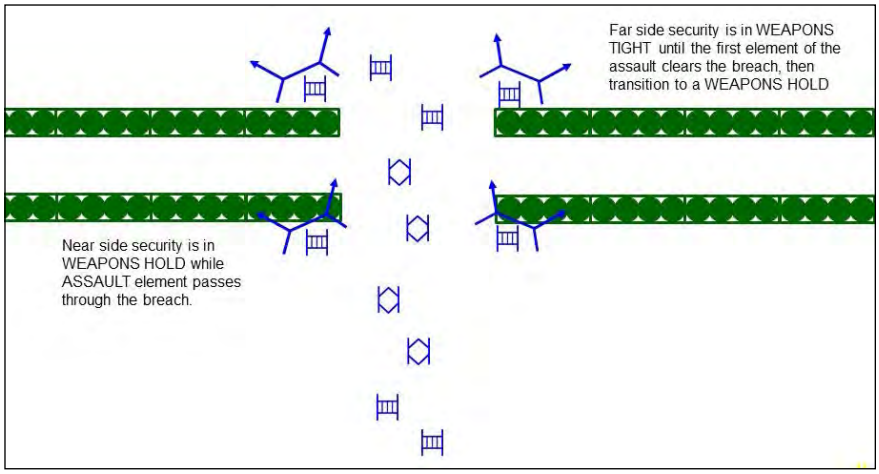

Figure 6 — Weapons Control Status

The three levels of weapons control status (WCS) outline the conditions, based on target identification criteria, under which friendly elements may engage. The commander sets and adjusts the WCS based on friendly and enemy disposition. In general, a more restrictive WCS relates to a higher probability of fratricide. The three levels, in descending order of restriction, are:

WEAPONS HOLD (Engage only if engaged or ordered to engage)
WEAPONS TIGHT (Engage only targets positively identified as enemy)
WEAPONS FREE (Engage any targets not positively identified as friendly)

— FM 3-21.10

position and the MGS platforms to move forward with Bangalore torpedoes to breach any remaining obstacles. They just needed large enough lanes for the introduction of infantry for now. They could further reduce the obstacle for vehicle lanes later. That left Alpha Company with its two remaining rifle platoons to clear the prison compound, establishing a foothold for the introduction of Bravo Company.

Bravo Company was patient. They couldn't afford to create a "traffic jam" with Alpha Company in the foothold although that was what was essentially happening back at the ORP where the two companies had dismounted their ICVs. The enemy scouts who had remained invisible in Hidden Valley for the previous 24 hours now began to trigger enemy indirect fires on "the parking lot" of ICVs. Bravo Company lost a platoon's worth of vehicles. Fortunately, its Infantrymen were already on the ground, but that was four fewer "mobile SBF positions" they would have available for the near term. Alpha 6 relayed to Bravo 6 that the prison compound was clear, but he wasn't sure how long he could hold it because he was being effectively suppressed by enemy forces on top of a rock pile overlooking the compound's northeastern perimeter. The battalion fire support officer (FSO) already had a pre-planned mortar mission for this rock pile because they had identified it as being key terrain for both sides. Furthermore, the task force scouts to the west were in position to observe and adjust fires as required. The 11Cs went into action, and the enemy platoon was soon reduced to a squad by effective 120mm high explosive (HE) fires. Bravo Company poured through the foothold and up toward the peak of the rock pile. The remaining enemy infantry saw the approaching combat power and withdrew into the heart of Razish. Bravo Company quickly established its own SBF position, suppressing enemy forces on the western perimeter of the town. That cued Alpha Company to call its platoon that had established its SBF west of the prison compound forward. Casualties had reduced both companies down to two effective rifle platoons each, but Charlie Company's SBF on the south wall was having good effects versus the enemy in the city. It was difficult for the OPFOR to reposition forces between Charlie Company's SBF to the south and Bravo Company's SBF to the west on the rock pile. The two SBF positions forced the enemy to fight simultaneously in two different directions, enabling their brother battalion task force to establish its own foothold in the northwest corner of Razish. Now, there were two Stryker Infantry battalions abreast of each other. They would conduct successive bounds from west to east ensuring they could mutually support each other by suppressing west-facing apertures in front of each other. Internally, the battalion bounded Bravo and Alpha Companies in a similar manner. Bravo was on the north flank and also responsible for coordinating with the adjacent battalion to its northern flank. Alpha Company cleared west to east along the south flank of Bravo. Both companies moved in successive bounds, suppressing apertures in front of the other. They were careful to coordinate the lead trace of the adjacent unit's assault elements. They were also correct in their analysis of the enormous size of the city leading to the conclusion that the linear danger areas to be crossed were numerous. They prepared for this eventuality identified during mission analysis by requisitioning for handheld smoke grenades and smoke pots. The smoke was received a few hours prior to SP the previous night and now proved to be a tremendous combat multiplier. Smoke was utilized between every cluster of buildings to facilitate bounding rifle squads. The cargo pockets of nearly every Infantryman bulged and overflowed with previously constructed "wolf-tail" near-recognition signals. They would use every wolf-tail available, and now these markers paid dividends assisting the M240B gunners in Charlie Company's SBF position with shifting their wall of steel 15 degrees in front of the forward line of troops (FLOT).

Assuming the role of a mobile SBF position, a mounted platform sits far back enough from the front line trace to maintain survivability but has plenty of range extending beyond it.

The Sappers completed reduction of the obstacles west of the prison compound just before BMNT, and now the battalion could introduce Strykers into the fight. As daylight descended on Razish, Alpha Company bounded a platoon of ICVs forward along the southern edge of the town. These vehicles were effective in suppressing west-facing apertures with their M2 .50 cal. machine guns. They were so effective that they started to get greedy. Three ICVs bounded forward of the adjacent rifle squads clearing buildings on their northern flank with the platoon sergeant's vehicle hesitating behind. It's almost as if he seemed to sense what was about to happen. The three ICVs

bounded no more than 200 meters forward of the Infantrymen and were all destroyed by enemy RPG-7 fires within five minutes. Alpha Company bounded another platoon of ICVs forward to assume the role of mobile SBF position. These ICVs stayed echeloned slightly behind the bounding rifle squads providing overwatch with their crew-served machine guns. The blinking lights of their brother platoon's ICVs served as a hard lesson learned. Charlie Company's support element, still occupying a SBF position south of the town, reported the approach of enemy vehicles from the east. Fortunately, these Soldiers had infiltrated the night before with their Javelins and were in the perfect position to destroy the lead two vehicles from the enemy armored force. The remainder of the enemy mechanized company decided that was enough and withdrew out of direct fire range. Clearance of Razish would consume the remainder of the morning, but the task force accomplished its mission with two rifle companies plus enablers remaining and still capable of continuing future offensive operations.

Observations — *This unit effectively utilized a backwards planning approach during course of action development. They began by identifying the last covered and concealed position that would serve as an assault position. This allowed the unit to identify where they would create a point of penetration facilitating establishment of a foothold. Identification of the planned assault position, proposed point of penetration, and foothold allowed the unit to subsequently identify the best location for an SBF position which factored in "battlefield geometry." Specifically, the unit attempted to attain as close to a 90-degree angle between the support and assault elements. This "right angle" between support and assault elements facilitated the support element's ability to suppress enemy forces for the maximum time possible. They were able to continuously shift suppressive fires at the "sweet spot" of 15-20 degrees in advance of maneuvering assault forces. Rotational units often place the SBF position at too close of an angle to the assault position, forcing the support element to shift or lift suppressive fires prematurely. This results in the enemy not being suppressed and the assault element incurring increased casualties.*

The unit also effectively identified times of suppression required to facilitate maneuver of the assault elements from their assault positions, execution of the breach, and subsequent maneuver to exploit the point of penetration. These identified required times of suppression allowed the unit to prioritize distribution of ammunition among various support elements, and perform "machine gun math" in determining control and rates of fires. (Read Chapter 6 of Marine Corps Warfighting Publication [MCWP] 3-15.1, Machine Guns and Machine Gun Gunnery*, right now!) This in turn prevented the enemy from massing effects versus the assault elements as well as limiting the enemy's ability to reposition forces as primary fighting positions became untenable. Rotational units often forget to employ MGS vehicles as infantry support platforms. The main guns of these platforms are ideal for blasting holes in enemy protective obstacles as well as suppressing enemy strongpoint positions. ICVs were effectively utilized in this operation as mobile SBF platforms; however, as soon as they advanced forward of their respective rifle squads they became vulnerable to enemy rocket-propelled grenade (RPG) fire. The ICVs that remained echeloned slightly rear right (or left) of their rifle squads were able to best suppress enemy forces with their heavy crew-served weapon systems. Tactical risk from enemy RPG or anti-tank guided missile (ATGM) systems was mitigated by the achieved mutual support of their rifle squads maneuvering forward of their ICVs to destroy or suppress those anti-armor threats. The unit effectively utilized its heavy mortars to suppress enemy infantry on identified key terrain dominating western approaches to the city. Finally, the unit planned for clearance in depth of urban terrain by ordering increased quantities of handheld smoke grenades, smoke pots, and construction of near-recognition signal markers ("wolf-tails") which were detectable by all types of optics (daylight, IR, and thermal).*

Infiltration of Ujen

The Infantrymen from Charlie Company moved forward at a brisk pace. Their destination was Ujen, the second largest city at NTC. It might as well be on an island; it was located at Four Corners surrounded on all sides by flat, wide open terrain. Shortly after EENT the Stryker infantry battalion directed Bravo Company to move to the west of Ujen. It was a feint so they had to move well outside of the four-kilometer range of any defending AT-5 systems but close enough to deceive the enemy forces inside the town into thinking that they were posturing for an attack from the west. Meanwhile, the other two rifle companies moved to their assault positions east of Hill 876, which was more than four kilometers east of Ujen. From this location, Charlie Company dismounted its ICVs. These Infantrymen were now moving across the open desert floor toward Ujen to the west. Limited visibility and scattered creosote bushes were their only forms of concealment. It would take them nearly four hours to cross the terrain from Hill 876 to Ujen. They needed Bravo Company's feint to fix the OPFOR's attention for as long as possible. If the OPFOR positioned ATGM and crew-served weapon systems to the western side of town, then establishment of the foothold on the eastern side of town would be relatively easy.

Ujen provides a challenging tactical problem for closing the distance and seizing a foothold.

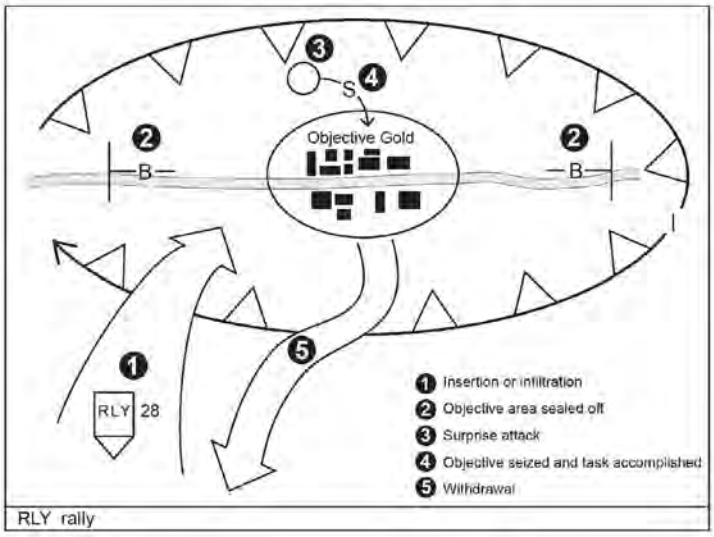

Figure 7 — Five Phases of a Raid (FM 3-90.1)

It was now 0330 and Charlie Company's rifle platoons were less than 500 meters from the eastern edge of Ujen. Their dismounted infiltration across nearly four kilometers was successful so far, but now shots rang out from a rifle in the town, perhaps a recon by fire. Their presence had been detected, but the element of surprise was still in effect. The OPFOR infantry could not reposition its machine guns fast enough. Charlie Company was now stacking up four-man fire teams outside the doorway of the easternmost building. The first couple of buildings were rapidly cleared and a foothold established. The nine buildings along the eastern edge of town were subsequently cleared and seized with little direct-fire contact. The OPFOR was concentrated to the west, and the initiative was now firmly in the hands of the rotational unit. The rotational unit's possession of the nine buildings on the eastern edge of Ujen now eliminated those structures to include their eastern facing apertures and rooftops as options for the OPFOR to employ their AT-5s and AT-13s. With the AT threat to the east mitigated, the battalion commander now ordered Alpha Company, still mounted on the east side of Hill 876, to move rapidly to the Ujen foothold. From there it would coordinate a link-up with Charlie Company to complete clearance of Ujen from east to west. Battalion mortars fired a pre-planned smoke target just in case Alpha needed some additional obscuration during its approach march. It was nice but unnecessary. The OPFOR, reeling from its loss of the eastern foothold, now simply tried to delay the inevitable.

Alpha Company arrived at the foothold, dismounted its rifle platoons, and began clearing the northern half of the city from east to west. Charlie Company, relieved to have Alpha Company take off some of the pressure, now focused on clearing its assigned half of the city to the south. The companies cleared from east to west, moving in successive bounds so they could provide mutual support via the suppression of east-facing apertures along the seam between the two companies. Alpha Company began maneuvering a section of ICVs echeloned to the right rear of its assaulting infantry in order to provide additional suppressive fires in support of maneuver. Bravo Company was now directed to follow and support behind Charlie Company which had cleared most of its objective but had sustained the highest number of casualties during its initial fight for the foothold. As the sun rose, remnants of the OPFOR infantry withdrew into a compound on the northwest corner of the city with nowhere else to go. They were still in shock from the turn of events. Limited visibility… a mounted feint... a stealthy, dismounted infiltration… then rapid introduction of mounted forces — it all added up to complete and total surprise. The OPFOR would have to hot wash this one. This was the most effective infiltration the Tarantula OC/Ts had observed in more than six months.

Observations — *It's tough for infantry forces to keep up with fast, armored forces in desert terrain. The great equalizer is their ability to maneuver at times (during limited visibility), locations (complex, canalizing terrain), and with methods (dismounted infiltration) where the advantages of enemy armor (speed and protection) are nullified. Many rotational units have elected to maximize available time for additional planning, waiting until daylight hours to begin their attack on Ujen or other urban objectives. Then they attempt to echelon suppressive fires and obscuration in an attempt to keep their Infantrymen mounted for as long as possible prior to attempting to establish the foothold. Many of these rifle squads are lost in the backs of their Strykers or BFVs as a result of the massed effects of a defending OPFOR that detected them well beyond the maximum effective range of their AT-5 and AT-13 systems.*

This particular unit attacked at a time of its choosing when it believed the OPFOR would be at their lowest level of alertness and less than ideal conditions of visibility. They set conditions for the successful infiltration by conducting a mounted feint knowing that the movement of a large number of Stryker vehicular platforms would command the attention of defending forces. The deception force was careful not to move inside the maximum engagement lines of the AT-5 systems knowing that they needed to survive and remain active in order to sell the feint. Meanwhile, the infantry force dismounted to perform its stealthy infiltration understanding that its ability to avoid compromise was also dependent on its ability to present as small of a signature as possible. Finally, the rotational unit planned for success by having a mounted Infantry force ready to rapidly exploit the foothold once established by the infiltration force. It carefully planned its mounted avenue of approach based on elimination of AT firing apertures from the nine buildings along the eastern edge of the city. Indeed, infiltration during hours of limited visibility served as the speed and protection for this infantry attack!

Part II

The April-June issue of *INFANTRY* Magazine will feature Part II of "Infantry Attacks at NTC" and includes vignettes on:

* Forcible Entry: An Airborne Interlude,
* Ambush at Bravo Pass, and
* Raid on Puma-1: Planning Backwards from the Objective.

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Assured Access Through Tactical Mobility:

Observations and Lessons Learned from a Proof of Principle

CPT VIRGIL J. BARNARD
1LT MICHAEL M. BOUCHARD

"In order to credibly deter potential adversaries and to prevent them from achieving their objectives, the United States must maintain its ability to project power in areas in which our access and freedom to operate are challenged."

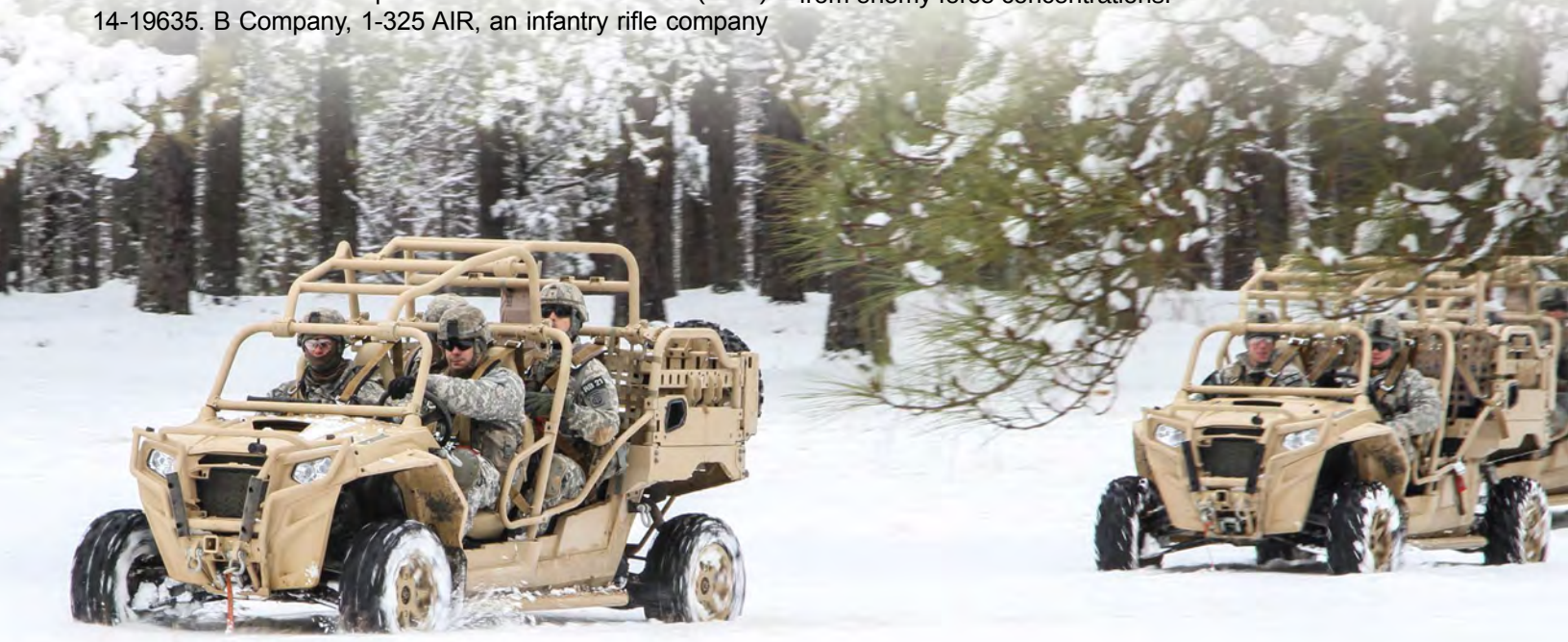
— Sustaining U.S. Global Leadership: Priorities for 21st Century Defense[1]

With instability around the world, the decreasing number of prepositioned forces, and the increasing number of adversaries with anti-access and aerial denial (A2/AD) capabilities, the need for a tailorable, scalable, and more mobile Initial Entry Force (IEF) has emerged. The Joint Staff Global Response Force Execution Order (GRF EXORD) delineates that homeland-based mission-aligned forces are assigned the mission of conducting a Joint Forcible Entry (JFE) as an IEF.[2]

The Light Tactical All-Terrain Vehicle (LTATV) proof of principle conducted by 1st Battalion, 325th Airborne Infantry Regiment (AIR) from November 2014 through December 2015 was initiated with Operational Needs Statement (ONS) 14-19635. B Company, 1-325 AIR, an infantry rifle company trained with 33 Polaris Defense MRZR4s for 14 months. In August 2015 we expanded our trials to include training and tactical employment of the Polaris Defense DAGOR, General Dynamics (GD) Flyer 60, and GD Flyer 72 for three weeks. In this article we will discuss the background, highlights, lessons learned from the tactical employment of these vehicles, list the desirable parameters, and make recommendations for furthering this capability within the GRF.

The Need for Enhanced Tactical Mobility

The Joint Chiefs of Staff's *Joint Concept for Entry Operations* (JCEO) states that "[e]ntry forces will envelop, infiltrate, and penetrate in and/or across multiple domains at select points of entry to place the enemy at an operational disadvantage."[3] "Required Capability 12" identifies a need for an IEF that is specially organized and equipped to handle the unique mission of conducting entry operations with a complement of low signature combat vehicles. These vehicles must be able to be moved by strategic lift and rotary wing assets and land off-set from enemy force concentrations.[4]



Paratroopers assigned to the 1st Battalion, 325th Airborne Infantry Regiment, 2nd Brigade Combat Team, 82nd Airborne Division, conduct training with the Light Tactical All Terrain Vehicle on Fort Pickett, VA, on 26 February 2015.
Photo by SSG Jason Hull

ONS 14-19635 requested "an air-droppable enhanced tactical mobility set [of vehicles] because of new operational requirements."[5] Specifically, these requirements were for the GRF Infantry Brigade Combat Team (IBCT) (Airborne) to counter increased proliferation of the enemy's A2/AD capabilities by conducting an airborne assault at an off-set drop zone (DZ) and maneuvering over distance to quickly seize a lodgment as directed in the JCEO.[6] Additionally, increased tactical mobility enhances the 82nd Airborne Division's critical mission of rapidly expanding lodgments through an expanded security zone and affords the division the option of increased ground mobility to leverage speed to bypass known enemy defenses to seize key terrain or defeat enemy forces beyond the traditional airhead line. The 82nd Airborne Division's unique requirements and the gap in meeting policy directives presents a critical and time-sensitive requirement that should not be delayed while the Army considers a broader program of record.

Photo courtesy of the National Training Center Public Affairs Office

During Operation Dragon Spear, paratroopers from the 1st Battalion, 325th Airborne Infantry Regiment conduct a raid after completing a 40-kilometer movement on LTATVs at Fort Irwin, CA.

The Army Ground Mobility Vehicle Program

The Maneuver Center of Excellence (MCoE), the Army Tank Automotive Research Development and Engineering Center (TARDEC), Army Test and Evaluation Command (ATEC), and the 82nd Airborne Division recognized the enhanced benefit of mobility platforms to all IBCTs and subsequently conducted a platform performance demonstration (PPD) in June 2014 at Fort Bragg, NC, that sought to validate threshold requirements for industry participants as the Program Executive Office for Combat Support and Combat Service Support (PEO CS & CSS) began to consider a broader program of record for LTATVs beyond the 82nd ONS.[7-8]

Training Overview

After receiving 33 MRZR4s in October of 2014, we conducted extensive training, qualitative and quantitative assessments, and established standard operating procedures for the tactical employment of the vehicles. We logged more than 21,000 miles on the MRZR4s in the wooded terrain of Fort Bragg, snow and icy swamps of Fort Pickett, VA, high mountain desert and rocky terrain of Fort Irwin, CA, and the loose, open terrain of White Sands Missile Range, NM.

Over 14 months we completed training ranging from individual driver's proficiency to company-level cross-country movements at night. We executed both platoon and company combined arms maneuver live-fire exercises using the vehicles to infiltrate to an objective rally point (ORP). We validated the use of the vehicles during our multi-echelon training events by conducting the three missions specified in the ONS which were derived from combined joint requirements for the mobile enhanced IEF. The three specified missions were: seize an offset DZ and immediately maneuver to seize a lodgment, seize key terrain, and complete assigned missions at extended ranges.[9]

According to a recent Rand Corporation study titled "Assessing Conventional Army Demands and Requirements for Ultra-Light Tactical Mobility," the use of Ultralight Tactical Mobility (UTM) capabilities can be used in the execution of eight basic tactical activities: maneuver force security/reconnaissance, local patrolling and engagements, coordinated maneuver, immediate pursuit, troop mobility, traveling support, casualty evacuation, and internal/ferry support.[10] We incorporated the identified tasks of traveling support and casualty evacuation into our collective training events and tactically employed the MRZR4s and other variants to assess their use as platforms for non-standard casualty evacuation, to emplace weapons squads in support-by-fire (SBF) positions, and to move our organic mortar team to forward mortar firing points (MFPs).

Lessons Learned While Validating the Use of LTATVs to Execute the Three Specified Missions

In order to avoid heavy concentrations of enemy air defenses around a primary airfield, a mobility-enhanced IEF would conduct an airborne assault at an offset, lightly guarded location. The mobile force would then infiltrate the primary DZ and clear the A2/AD threat to enable the introduction of follow-on forces. We validated this specified mission during both Combined Joint Operational Access Exercise (CJOAX) 15-01 in April 2014 and a battalion-level JFE exercise in May 2014.

B Company's initial mission during CJOAX 15-01 was conducting a JFE with the 2nd Brigade Combat Team (BCT), 82nd Airborne Division and the 3rd Battalion of the British

Parachute Regiment and then moving to and securing an offset DZ. B Company conducted a parachute assault onto Holland DZ with the rest of 2nd Brigade Combat Team. After rapid assembly, 90 paratroopers on 24 MRZR4 LTATVs moved on unimproved roads at night under blackout conditions aided by the use of night vision devices. We moved at an average speed of 21 kilometers per hour (KPH) along the 30-kilometer route and secured the northern portion of Sicily DZ. Once all of our blocking positions were established and the conditions were set, a secondary airborne assault brought D Company, 2-325th AIR with eight HMMWVs and 24 paratroopers.

During the battalion-level airfield seizure in May 2014, B Company conducted a JFE onto Normandy DZ and moved cross country, without using improved roads or trails, on LTATVs to clear an A2/AD threat near Holland DZ. This set the conditions for the remainder of the IEF airdrop. We drove the 13-kilometer route at night, during a rainstorm, under blackout conditions, in semi-restrictive woodland terrain. The average movement speed for the company was 5 KPH (compared to the 1-2 KPH a rifle company moves at night through the same terrain). Another benefit from using the LTATVs was reduced clearance times for actions on the objective because the paratroopers were not fatigued from the movement to the objective.

For both movements, the company moved on one axis of advance instead of dispersing into faster-moving platoon elements due to the limited range of our organic communications equipment. We were further constrained by not having communications with follow-on forces until our higher headquarters was on the ground, which meant we were unable to synchronize our efforts with the larger joint force. We couldn't let those coming to the fight know that the conditions were set or that potential threats still existed. Distributed mission command equipment that works while moving such as tactical satellite (TACSAT) and the Joint Capabilities Release (JCR) is needed to leverage the range and speed of movement LTATVs provide.

The mission to rapidly expand the lodgment and seize key terrain was validated during Network Integration Exercise 16.1 (NIE) at White Sands Missile Range in October 2015. After conducting a parachute assault onto Space Harbor DZ and assembling on the heavy equipment point of impact (HEPI), a platoon from B Company mounted eight MRZR4 LTATVs and moved approximately 5 kilometers to clear a set of rolling hills in order to expand the lodgment and prevent the enemy from emplacing observed indirect fires onto it. After the introduction of follow-on forces via airlands, the platoon pushed further north to fill a hole in airhead security, and then when called upon, moved further north to support a company attack.

The platoon moved approximately 20 kilometers and conducted multiple missions during the initial six hours of the JFE. The average speed moving through the open desert terrain during daylight was 40 KPH. The ability to move rapidly and be dynamically re-tasked to rapidly expand the lodgment and clear known, likely, and suspected enemy locations to expedite the arrival of follow-on forces makes an LTATV-equipped IEF an asset to the commander during a JFE.

Conducting this raid during daylight hours would not have been possible without the mobility platforms... The ability to move long distances through semi-restrictive terrain on LTATVs allowed us to attack the enemy from an unexpected direction at a time when they were unprepared.

The third mission of completing assigned missions at extended ranges was validated during Operation Dragon Spear, a Chief of Staff of the Army-directed JFE exercise, that was conducted at the National Training Center at Fort Irwin on 6 August 2015. During this exercise, B Company headquarters and one platoon conducted a parachute assault onto Grant DZ with the brigade to set the conditions for airlands. Four hours after the parachute assault, two enhanced mobility platoons arrived via airland on two C-130Js. The aircraft delivered six MRZR4s, two DAGORs, two FLYER 60s, and two FLYER 72s to the airhead. Shortly after arriving, both platoons met at the company assembly area and immediately conducted a 40-kilometer movement to extract a downed pilot. This movement was conducted as a company during daylight hours in high desert terrain with easily accessible mobility corridors. The average speed for this movement was 40 KPH. B Company maintained the element of surprise by conducting an infiltration maintaining at least one major terrain feature between the company and the objective.

While setting conditions for the assault, B Company staged in an ORP two kilometers from the objective behind a small terrain feature. With conditions set, we moved into a linear formation to minimize the improvised explosive device (IED) threat and mask the size of the formation, increasing protection through dispersion of forces. We then moved rapidly to a piece of micro terrain that would serve as the assault position. The man-made berm, approximately five feet high, served as cover for the vehicles. Once at the assault position, we rapidly dismounted and conducted a selective clearance of the objective until we located the downed pilot. Once the downed pilot was located, two MRZR4s drove into the village to serve as casualty evacuation (CASEVAC) for both the pilot as well as injured paratroopers. After the casualties were moved to the assault position, we moved back to the lodgment.

Conducting this raid during daylight hours would not have been possible without the mobility platforms. The distance was too great for dismounts to walk to the objective, improved roads were easily observed due to the lack of vegetation, and the enemy would have had advanced warning if Soldiers had air assaulted into the closest position that provided cover. The ability to move long distances through semi-restrictive terrain on LTATVs allowed us to attack the enemy from an unexpected direction at a time when they were unprepared.

Desirable Parameters Overview

During the proof of principle, we conducted a detailed

analysis to determine what parameters are most desirable in an air-droppable LTATV for an IEF. We conducted qualitative and quantitative assessments, and we determined our desired parameters based on the experiences of our operators after spending an extensive amount of time tactically employing the vehicles. Our experiences validated most of the Army's GMV Capability Production Document (CPD) assumptions and key performance variables that would have application to IBCTs beyond the airborne GRF BCT and the system characteristics detailed in ONS 14-19635. In order of priority, the parameter groups we determined to be important are:

- Mobility and handling,
- Allowable cargo load,
- Strategic mobility (airdrop and airland),
- Modularity (the ability to be modified to fill a variety of roles by the user without the use of special tools or a forward support representative [FSR]),
- Auxiliary power generation for mission command equipment,
- Ease of maintenance,
- Safety,
- Ease of recovery,
- Fuel range,
- Egress (the ability to get in and out of the vehicle quickly with combat load), and
- Fire power.[11]

Rotary wing internal transport and slingloads for UH-60, CH-47, and CV-22 aircraft were not evaluated as part of our proof of principle.

Team- vs Squad-Sized Carriers

A discussion of desirable parameters is not complete without discussing the size of the element that each LTATV should carry. Team carriers are more maneuverable due to their smaller profile; their lighter weight enables the use of gap spanners and makes recovery easy. Greater dispersion of personnel allows for risk mitigation by decreasing the number of personnel that would be affected by IED or ambush. Team-sized carriers tend to be less durable due to the strength of key suspension parts; however, those parts can easily be changed on the move in an austere environment.

Squad-sized carriers allow for increased command and control as a result of decreasing the overall number of vehicles, maximizing airland capabilities, and increasing the number of leaders in each vehicle. The added space in the vehicle permits the use of larger fuel tanks and increased fuel range. The vehicles are heavier but tend to be more durable. However, the engines and suspension systems are larger and more complex.

An ideal fielding would include both team- and squad-sized vehicles, making a unit more adaptable to mission, terrain, and enemy. During the initial airfield seizure, the squad-sized carrier is the most efficient delivery via heavy drop or airland, allowing for the greatest number of seats per aircraft. The durability of the vehicle increases vehicle survivability during the airdrop and initial operations before mechanic support and parts can arrive. During the initial operation, risk of enemy contact during movement is mitigated by the overall surprise and speed we maintain. The rapid increase of combat power will catch the

Photo by SSG Jason Hull

Paratroopers assigned to the 1st Battalion, 325th Airborne Infantry Regiment assault an urban environment at Fort Irwin on 11 August 2015.

enemy off guard and mobility corridors will be open, free of IEDs and planned ambushes. For these reasons, the larger, more durable DAGOR is ideal.

When joint forces transition to sustained wide area security operations, out-of-sector missions become more common, and mobility corridors begin to close as the enemy becomes more familiar with our routes out of the airhead line or secured area. For these reasons, a team-sized carrier allows more protection as it increases the number of routes available and decreases the number of paratroopers exposed in a significant event.

The Polaris DAGOR, a squad-sized carrier, is effective for the GRF because it increases the strategic mobility of an airborne IBCT more than the MRZR4. A C-17 Globemaster III can airdrop eight of either variant per aircraft via a Dual Row Airdrop System (DRAS) platform. Translated to ground capability, it is the difference between 72 seats (8 x 9-man vehicles) delivered with the DAGORs per aircraft compared to 32 with MRZR4s (8 x 4-man vehicles). If conducting an airland operation, the difference is negated with 90 DAGOR seats (10 vehicles) versus 72 MRZR4 seats (18 vehicles) in a single C-17.

The MRZR4 is better suited for traditional light infantry units. The MRZR4's small size and capable off-road design allowed us to quickly traverse wooded terrain and thick foliage, previously considered severely restrictive to vehicular traffic. This allows a mobility-enhanced rifle company to move further and faster than their dismounted counterparts. The vehicles can travel wherever infantry would typically walk, thereby allowing formations to move faster, carry more, and significantly reduce combat fatigue compared to a dismounted element. Of note, the MRZR4 is an excellent vehicle for conducting an infiltration; it is audibly undetectable one minor terrain feature away from the objective, where a light infantry platoon would establish its ORP.

Recommendations

Our proof of principle confirmed most of the Army's GMV Capability Production Document (CPD) assumptions and key performance variables that would have application to IBCTs beyond the Airborne GRF BCT with two notable recommendations. The power generation for vehicle-mounted Single Channel Ground and Airborne Radio Systems (SINCGARs) and beyond-line of sight communications on select leader vehicles is a critical capability not originally reflected in the CPD. However, recent discussions with the MCoE indicate that mission command equipment is now a critical capability. Unaddressed, the lack of mission command systems negates the increased range and mobility we are seeking to create with the vehicles. Additionally, the CPD was originally written for a squad carrier. To achieve the intent of avoiding mobility corridors and travelling in restrictive terrain with dismounted infantry, the Army's program should consider smaller team-sized carriers that can double as a modular medical, mortar, heavy weapons, or logistics vehicle. MCoE and the Army Capabilities Integration Center should apply the 82nd Airborne Division's lessons learned to their GMV program, but the requirements and operating assumptions for employment are significant enough to decouple the acquisition milestones and key parameters from the Army's Program of Record and the 82nd Airborne Division ONS.

The 82nd Airborne Division, as a designated IEF, will likely be able to leverage strategic surprise while traversing mobility corridors or rapidly repositioning friendly forces. Follow-on forces will not have the same surprise advantages and will need vehicles that can bypass traditional mobility corridors and infiltrate with the dismounted infantry. The 82nd Airborne Division should continue to expand its LTATV fleet consistent with the current ONS of equipping the GRF IBCT's three infantry task forces with enhanced mobility and providing a training package for the GRF 2 in its Intensive Training Cycle.

A second LTATV purchase consisting of 35 Polaris DAGORs (9-seat variant) should be immediately executed, leveraging their demonstrated versatility and durability, strategic mobility benefits, gun-ring option, and increased power generation for vital mission command systems. The MRZR4 is very cost effective and more advantageous in restrictive terrain. However, we shouldn't continue to invest in MRZR4 motor gasoline (MOGAS) variants when a turbo diesel option will soon likely be available for delivery. Over the next six months, a more thorough proof of principle can be conducted on the DAGOR 9-man variant before finalizing our requested basis of issue and completing the ONS.

Notes

[1] U.S. Department of Defense, "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense," (January 2012): 7, accessed 13June 2016 at http://archive.defense.gov/news/Defense_Strategic_Guidance.pdf.

[2] Joint Chiefs Of Staff, *Joint Concept for Entry Operations* (Washington: U.S. Government Printing Office, 2014).

[3] Ibid.

[4] Ibid.

[5] BG Christopher Cavoli, Operational Needs Statement- Enhanced Tactical Mobility for the Global Response Force — (ONS 14-19635) (Fort Bragg: 82nd Airborne Division, 2014).

[6] Joint Chiefs Of Staff.

[7] Army Capabilities Integration Center, "Army Ground Mobility Vehicle" (presented Fort Eustis, VA, 10 July 2015); Capabilities Development Integration Directorate, "Operational and Organizational Concept for Future Forced Entry Operations 2020-2040" (Fort Benning, GA: Maneuver Center of Excellence, 2015).

[8] Of note, Army G3/5/7 changed the program name to Ground Mobility Vehicle (GMV), not to be confused with the AM General SOF Variant HMMWV or the USASOC GMV-R 1.1 program of record.

[9] BG Cavoli, ONS.

[10] Matthew Boyer, Michael Shurkin, Jonathan P. Wong, Ryan Schwankhart, Adam Albrich, Matthew W. Lewis and Christopher G. Pernin, "Assessing Conventional Army Demands and Requirements for Ultra-Light Tactical Mobility," (RAND Corporation, 2015); http://www.rand.org/pubs/research_reports/RR718.html.

[11] Kenneth Burgess, Virgil Barnard and Michael Bouchard, "MRZR4 LTATV Proof of Principle Final Report" (Fort Bragg: 1st Battalion 325th Airborne Infantry Regiment, 2015).

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Building the Infantry Squad Leader:
Cognitive, Social, and Physical Development

1LT MICHAEL P. FERGUSON

During the last 15 years, the roles and responsibilities within nearly every military occupational specialty have been challenged, expanded, and at times altogether revised. The demands placed upon our military service members by the Global War on Terrorism necessitated such adaptation, and we as an Army excelled in every regard. But, in the emerging operating environment that involves both a heightened threat from peer or near-peer states as well as the rampant proliferation of non-state extremist actors, perhaps a reassessment of what platoons expect from their squad leaders is in order.

When asked to articulate the desired characteristics of a leader, paratroopers often respond with flowery language extracted from the Army Values or one of our various creeds. This is a good thing in that it demonstrates the successful inculcation of these critical concepts within our formations. But such terms do little more than offer an advantage in promotion boards if they are not backed by deliberate courses of action designed to produce Soldiers who embody these traits.

In the interest of identifying a nexus of common denominators among our finest Infantry squad leaders and to determine how leaders may foster such skills within their units, platoon leaders of Charlie Company, 2nd Battalion, 504th Parachute Infantry Regiment, examined feedback from their squad leaders after a battalion squad leader course and pinpointed several best practices. The outcome of this examination is a set of practical guidelines that develops the cognitive, social, and physical domains of military leadership. To elaborate, the cognitive domain focuses on how Soldiers learn and retain information, and how that information is used to solve problems and execute complex tasks. The social aspect of leadership is one of the most transformational because it is intrinsically linked to unit cohesion, morale, and esprit de corps. This domain focuses on how Soldiers perceive their organization and its members, thereby allowing them to build cohesive teams through mutual pride and trust. Development of the physical domain pertains to reinforcing functional fitness goals that are progressive, sequential, and relevant to the organization's current mission.

Before we could assess how an organization develops strong squad leaders, we first had to identify those traits most commonly associated with the ideal team leader and distinguish them from the capabilities that define an admirable squad leader.

Paratroopers from Charlie Company, 2nd Battalion, 504th Parachute Infantry Regiment, engage targets during a live-fire maneuver exercise. Engineers breached a mine-wire obstacle that allowed the platoon to penetrate the objective area.

Photos courtesy of author

Charlie Company's squad leaders agreed uniformly that their team leaders should be trustworthy, inspiring mentors who remain adaptive in austere environments by taking appropriate action in the absence of orders. More than one squad leader described this vision as living the Army Values or personifying the NCO Creed. They believed team leaders must learn to balance the roles of enforcer and counselor by knowing their paratroopers and viewing the Army as a way of life and not merely an employment opportunity. It is self-evident that we expect our team leaders to be physically fit subject-matter experts, highly proficient in their warrior tasks and drills. While these conclusions are valid and most certainly true, we must ask as well: What more should we expect from our squad leaders? Quite a bit, in fact.

Squad leaders are the conduit between the individual paratrooper and the company fight that affects the battalion's mission. In the absence of the platoon sergeant, a senior squad leader must assume his duties. These duties consist of personnel management at the platoon level (a 400 percent or more increase in manpower), coordination with the first sergeant at the company level, and even problem-solving endeavors in the battalion realm, such as terrain and ammunition resourcing. Young squad leaders may view their role as restricted to the management and training of eight Soldiers, but this could not be further from the truth. The following are those traits most sought after in squad leaders who can remain pivotal assets in the company fight. For the duration of this article, we will refer to them as the four pillars of leadership.

1. The Ability to Identify and Solve Problems — Squad leaders must possess this trait personally, but they also must be able to foster an environment that encourages similar actions from others. Failure to cultivate this valuable capability among junior NCOs leads inevitably to an unending slew of problems and complaints piled upon the platoon and company leadership. This may be the most valued trait of a squad leader — a leader who sits one seat away from owning a platoon. Too often, it is the tendency of Infantrymen to lament endlessly the injustices or asymmetries of their work environment without ever approaching their first-line supervisor with assertive recommendations to rectify these deficiencies. This increasingly cumulative burden falls on their leaders. Such habits can be hard to break and may perpetuate into the realm of squad leadership. If this is allowed to happen, quality of training, initiative, and morale will suffer. The company training schedule is driven by the platoon and squad leadership's ability to foresee problems and solve them proactively. If squad leaders are not demonstrating this capability, allowing them to assume the duties of a platoon sergeant is counterproductive to their individual careers and the collective welfare of the organization.

2. The Passion to Steward the Profession — Squad leaders' demeanor directly impacts the warrior spirit and will of their squads. When their dissatisfaction with their life choices becomes evident, it hampers the readiness of those they lead and the morale of the entire platoon. Squad leaders must actively seek ways to build esprit de corps, promote unit cohesion, and usher paratroopers into more rewarding and demanding positions. If squad leaders do not enjoy their profession or take pride in their organization, rest assured that their squad will follow suit. This is not an easy hurdle to overcome. Stewards of the profession who promote military culture — both Army-wide and unit specific — invariably develop paratroopers with similar degrees of motivation. Just as toxic leadership spreads like a virus, unit pride, gratifying careers, and leaders who genuinely care about their paratroopers are also contagious. Squad leaders should be living examples of the quality of life that the Army is capable of offering its high performers.

Confident, physically fit leaders who maintain a high degree of professionalism on and off duty are capable of nurturing environments that serve as fertile soil for growing future leaders of integrity.

3. The Desire to be a Role Model On and Off Duty — Confident, physically fit leaders who maintain a high degree of professionalism on and off duty are capable of nurturing environments that serve as fertile soil for growing future leaders of integrity. At any time, squad leaders should be able to say, "Get like me," as a response to an infraction within their squad. More often than some may assume, the off-duty example set by squad leaders makes a strong impression. This is particularly true regarding Soldiers who feel they are incapable of maintaining a family in the Army and believe termination of service is the most favorable option. This, again, is a fallacy. It is the squad leader's job to be a reputable person, parent, or spouse by setting the example for others to follow when the uniform comes off. We are in a serious business, and although enjoying the job is critical to mission success, the seriousness of our profession must be intrinsic, not simply an act we perform while wearing the uniform.

4. The Depth of Character to be Hard but Fair — Squad leaders must let their paratroopers know that they empower performers, forgive ignorance, and punish dishonesty or dereliction. To be successful, squad leaders must seem approachable to those they are responsible for. If not, the platoon's lines of communication will break down, and this failure will reflect in command climate surveys and reenlistment numbers. Keep this line of communication open with impartial rewards and punishments that are proportional and creative, and problems will begin to solve themselves.

Identifying the most admirable traits squad leaders should possess is only half of the fight and arguably the less decisive of the two halves. We must now develop a course of action by using these four pillars of a squad leader as the foundation for a pathway that instills these pillars within our formations. This course of action consists of four training tools that support the pillars by building on the cognitive, social, and physical dynamics so critical to leadership development and organizational performance. We chose to use anecdotes from Charlie Company to demonstrate how each of these tools can and does reinforce the pillars.

Know and teach your unit's history (social development).

A Charlie Company squad leader maintains physical control of his team as he engages targets in a rolling "T" formation while entering and clearing a trench during squad live-fire exercises. Notice the orange markers used as direct fire control measure redundancies to communicate visually with the support-by-fire position as the squad moves through the trench.

Squad leaders must connect their troops to something outside their finite existence by making them aware they are part of a long-standing military family rich with valor and sacrifice. Part of this process involves educating our formations about the often unknown heritage they associate with in their daily lives. For example, one of our platoons developed a comprehensive study guide for team leaders and below that the squad leaders are responsible for promoting. A section of this study guide is dedicated to understanding the meaning behind the names of Fort Bragg's main roads and drop zones. Not only does this force socialization and make a physical training session on Ardennes or a jump onto Holland Drop Zone more meaningful, it also serves as a constant reminder of how much previous generations of paratroopers sacrificed to allow us the privilege of running on that road or jumping onto that drop zone. As a result, paratroopers develop loyalty to their organization and its members, thereby nurturing that social bond between Infantrymen that serves as the decisive factor in combat. This tool is nested directly with the pillars of stewarding the profession and solving morale problems.

Counsel often and informally with a focus on expectation management (cognitive and social development). Squad leaders are at a decisive point in their careers when they will be forced to make major decisions that dictate their long-term potential for military service. These decisions range from attending professional development schools that will impact the trajectory of their careers to reenlistments that will likely put them beyond 10 years of time in service. Their experiences and choices during this period are critical to their development and the vitality of our force. The NCO Evaluation Report (NCOER) is a major component in this process. To retain the most capable NCOs, Charlie Company leaders use a NCOER binder for inspiration and reference while counseling and writing their NCOERs. This binder is a collection of well-written NCOERs with all personally identifiable information removed. Squad leaders may refer to this folder for guidance when writing their team leaders' reports, which serves as a professional development tool for both the team leader and the squad leader.

Counseling of our squad leaders generally focuses on structuring a realistic glide path for that leader's career, and we strive to personalize the profession of arms by engaging in off-post functions. While maintaining an appropriate degree of professionalism, leaders should get out of the workplace and mold their squad leaders in a comfortable environment that humanizes their leadership position in accordance with the Be-Know-Do trinity. This professional development tool can take the form of a squad leader barbecue at the platoon leader's or platoon sergeant's house, or an off-post physical training session followed by breakfast. Some of the best ideas and counseling sessions may be discovered out of uniform in an informal social environment. If squad leaders feel welcomed and comfortable among this new echelon of leadership, they will be eager to excel and earn positions of greater responsibility.

Force them out of their comfort zone (cognitive, social, and physical development). Seek opportunities to expand squad leaders' influence as far as possible outside their scope of responsibility. In one instance, we had a Master Fitness Trainer-qualified squad leader plan, resource, and execute a company-level training schedule consisting of progressive conditioning events that culminated in a 25-mile road march. When squad leaders impact the company fight, growth is inevitable, and they are forced to identify and solve problems (in accordance with the first pillar of squad leadership).

Another part of forcing leaders outside of their comfort zone involves finding their weaknesses and drilling them. In Charlie Company, when we begin our eight-step training model, we try to avoid selecting our strongest paratroopers as primary trainers (following the fourth pillar of being tough but fair). This requires a bit more oversight, but the payoff is immense. Tacit or introverted Soldiers may break through their shell if afforded sufficient guidance and given the opportunity to own a period of instruction that they must present to their peers.

Finally, empower your NCOs by encouraging ideas (cognitive, social, and physical development). Although in the Infantry we spend more time defending democracy than practicing it, senior leaders must avoid the tendency to exclude squads from the planning process. Make squad leaders brainstorm and come up with solutions, develop courses of action, and execute them while the platoon leader and platoon sergeant supervise and refine. Do not be afraid to challenge the status quo by breaking through the curse of knowledge so ubiquitous among the upper NCO ranks. Identify aspects of the training calendar or physical training schedule that are redundant, uninteresting, or simply "the way we've always done it," and have the squad leaders implement change. Examples of this include Charlie Company's focus on functional strength progression, integration of performance experts into range operations, and our interoperability with the Special Forces community. These valuable training opportunities came to fruition through initiative and resourcefulness often generated at the squad level. In most cases, squad leaders proposed courses of action based on their skillsets and the recommendations of their paratroopers. This allows squad leaders to expand their scope of influence and serve as role models as they increase the explosive power, overall fitness, and marksmanship proficiency of their company. Empowerment is a word we often use but rarely transform into a tangible system.

Although squad leaders are still capable of change at this point in their life, their growth towards becoming ideal leaders begins as a rifleman and takes shape as a team leader. This process of building on the four pillars using cognitive, social, and physical development tools should start as early as possible in Soldiers' careers. Despite some studies that argue leadership traits are in some ways inherent and often instilled in leaders during early childhood by parents or mentors, based on our experience and the examples of NCOs such as Audie Murphy, we believe superior leaders can be molded. These four courses of action can help build Infantrymen who are capable of fostering lethal, agile, and adaptive teams. In the ever-changing and often unpredictable threat environment within which our troops must operate, building inspiring squad leaders remains critical to fighting and winning our nation's wars.

At the time this article was written, **1LT Michael P. Ferguson** was serving as a rifle platoon leader in Charlie Company, 2nd Battalion, 504th Parachute Infantry Regiment, 1st Brigade Combat Team (BCT), 82nd Airborne Division, Fort Bragg, NC. Prior to commissioning, Ferguson was a sergeant first class and Ranger instructor with the 4th Ranger Training Battalion at Fort Benning, GA. His operational experience includes deployments to Ramadi, Iraq, before the Anbar Awakening, and more than a year as an infantry scout team leader in Afghanistan with the 1st Battalion, 506th Infantry Regiment, 4th BCT, 101st Airborne Division, Fort Campbell, KY. 1LT Ferguson has a master's degree in homeland security, is a graduate of the Maneuver Senior Leaders Course, and is a member of the Order of Saint Maurice.

An automatic rifleman engages targets with his M249 squad automatic weapon during a squad live-fire exercise. The automatic rifleman was part of a support-by-fire element that suppressed targets from an elevated position to allow the maneuver element to close with and destroy the enemy on the objective. Squad leader implementation of direct fire control measures is critical during this phase of execution.

VALIDATING READINESS:

A BATTALION COMMANDER'S OBSERVATIONS FROM A NO-NOTICE EXERCISE

LTC MARK IVEZAJ

Unscheduled training opportunities test the readiness of a battalion and expose systemic vulnerabilities in a way that planned training cannot. In July 2016, U.S. Army Forces Command notified the 82nd Airborne Division's Global Response Force (GRF) of an emergency deployment readiness exercise (EDRE). The EDRE required the division to send more than 700 paratroopers from Fort Bragg, NC, to conduct an airborne insertion into Fort Polk, LA, within 100 hours and then immediately conduct a non-combat evacuation operation (NEO) alongside world-class role players at the Joint Readiness Training Center (JRTC). As the ready battalion —the Army's organization designated to rapidly deploy to crises anywhere in the world — the 2nd Battalion, 501st Parachute Infantry Regiment received the no-notice mission and then immediately launched our N-hour outload, planning, and deployment sequence. The EDRE allowed us to see ourselves and our readiness platforms, standard operating procedures (SOPs), and execution checklists in a realistic, condensed planning timeline. While the event revealed areas to improve, it highlighted the unique opportunities to develop readiness afforded by the 82nd Airborne Division's mission.

As in most Army organizations, those opportunities begin at 0630. Every day, we work towards enhancing readiness at the lowest level through the education and application of functional, combat-focused fitness. Our physical training

Photo by TSgt Sean Tobin, USAF

Paratroopers from the 82nd Airborne Division perform a nighttime static-line jump from a C-17 Globemaster III aircraft over Polk Field, LA, on 17 July 2016 as part of Devil Strike, a joint emergency deployment readiness exercise.

program — Geronimo Athlete Warrior (GAW) — focuses on the development of maximal strength to ensure paratroopers' bodies are prepared for the physical demands of airborne operations. Additionally, GAW allows us to identify and address individual weaknesses that may contribute to injuries. During the EDRE, this daily focus paid dividends as our injury rate from the airborne entry was less than half of one percent, allowing us to keep our paratroopers in the fight after insertion.

Another initiative that profited our organization during the EDRE is our leadership professional development program, which is focused on exposing Geronimo officers and NCOs to civilian leaders and professionals. The GRF supports a broad range of missions across the spectrum of human strife, ranging from disaster relief to high-intensity conflict. Within the N-hour sequence we have a short window in which to plan against a specific problem set in a specific part of the world. Therefore, we instill a sense of intellectual agility in our junior leaders through exposure to best practices in a variety of civilian fields. We have participated in panels and discussions focused on problem solving and talent management with executive leaders from successful organizations including Red Hat, Inc. in Raleigh and Roush Fenway Racing in Charlotte. These platforms allow us to develop leaders capable of critical thought who are aware of the importance of interdependency, interoperability, and integration. Meanwhile, the lessons acquired from these interactions provide us the tools to improve, encourage, and foster an atmosphere focused on teamwork and clear, constant communication.

Perhaps the most important opportunity available to all units within the division is our joint partnership platforms. For the 82nd Airborne Division, every day is a joint touch point; the Air Force is a 365-day-a-year mission partner. To sustain proficiency in airborne operations, we coordinate regularly with the Air Mobility Command and the 18th Air Force. This regular point-to-point coordination yielded success when we received the call to mobilize and deploy in 100 hours. During the EDRE, we quickly integrated our air mobility and unit movement teams with Air Force planners and inspectors, allowing us to promptly react to changes in manifest, timeline, and aircraft. Established relationships gave us the ability to anticipate requirements as they emerged in the outload process.

The GRF supports a broad range of missions across the spectrum of human strife, ranging ***from disaster relief to high-intensity conflict.*** *Within the N-hour sequence we have a short* ***window in which to plan against a specific problem set in a specific part of the world.*** *Therefore, we instill a sense of intellectual agility in our junior leaders through exposure* ***to best practices in a variety of civilian fields.***

Fort Bragg provides proximity and access to our Special Operations Force partners, a relationship that allowed us to quickly plug into Special Forces planners and Operational Detachment Alpha commanders on the ground. These leaders shared their knowledge of the host nation and enemy situation once we inserted. We used this information to plan the rapid evacuation of embassy personnel on Fort Polk.

There are many lessons learned from this kind of no-notice deployment. We identified shortcomings with our outload process and employment of mission command systems. We realized that we do not have the right liaisons assigned to adjacent units on Fort Bragg to facilitate a rapid outload. We now know that we need to integrate our joint partners into our execution checklist scrub as conditions change, and we must develop a more coherent N-hour sequence SOP for mitigating information leaks from our formation. Through the EDRE we diagnosed vulnerabilities not normally visible within the organization.

Combined, the 82nd Airborne Division's multilayered readiness focus and joint access allowed us to conduct a no-notice deployment and follow-on mission that developed confidence, identified areas to improve, and built increased readiness. It is this focus that allows us to support the GRF mission and live at the knife's edge of readiness for our nation.

Photo by SSgt DeAndre Curtiss, USAF

Paratroopers from the 82nd Airborne Division load a C-17 Globemaster at Pope Army Airfield, NC, during an emergency deployment readiness exercise on 16 July 2016.

At the time this article was written, **LTC Mark Ivezaj** was serving as commander of the 2nd Battalion, 501st Parachute Infantry Regiment, 1st Brigade Combat Team, 82nd Airborne Division, Fort Bragg, NC.

AAR Considerations during Multinational Operations

MAJ PATRICK L. BRYAN

"[A]after the battle they bring this mobile theater and they do what they call an 'after action review' to teach you what you've done wrong. Sort of leadership by humiliation. They put a big screen up and they take you through everything and then, 'you didn't do this and you did do this,' etc. I walked out feeling as low as a snake's belly in a wagon rut. And I saw my battalion commander, 'cause I had let him down. And I went up to apologize to him and he said, 'Stanley, I thought you did great.' And in one sentence he lifted me, put me back on my feet and taught me that leaders can let you fail and yet, not let you be a failure."

– GEN Stanley McChrystal[1]

The United States and its partners are increasingly focusing their efforts on an uncertain future against uncertain enemies. Consequently, Combat Training Centers are exercising multinational interoperability. The after action review (AAR) is a ubiquitous tool within these training environments, yet many multinational forces are entirely unfamiliar with its use as an assessment tool. Further, AARs are not always adjusted appropriately to accommodate international audiences. This article is designed to introduce facilitators to AAR challenges in a multinational environment and to introduce our partners to the process.[2] In the spirit of interoperability — where trust is paramount — we do not want our coalition partners to walk away from our AARs feeling "as low as a snake's belly in a wagon rut," as GEN McChrystal once did. In order to avoid that, we need to understand our training audience.

Even within the U.S. military — a generally homogeneous organization — many unique subcultures exist: Marines, airborne infantry, mechanized infantry, armored, support, etc. We are made up of men and women from the north, the south, other countries, and virtually every ethnic origin. By all accounts, we are an organization with many cultures, but our U.S. military culture binds us. Our coalition partners have their own unique military cultures as well, with their own subcultures. To be sure, creating one multinational military culture is difficult but not impossible. Good AAR practice helps us to build the camaraderie and trust critical to interoperability.

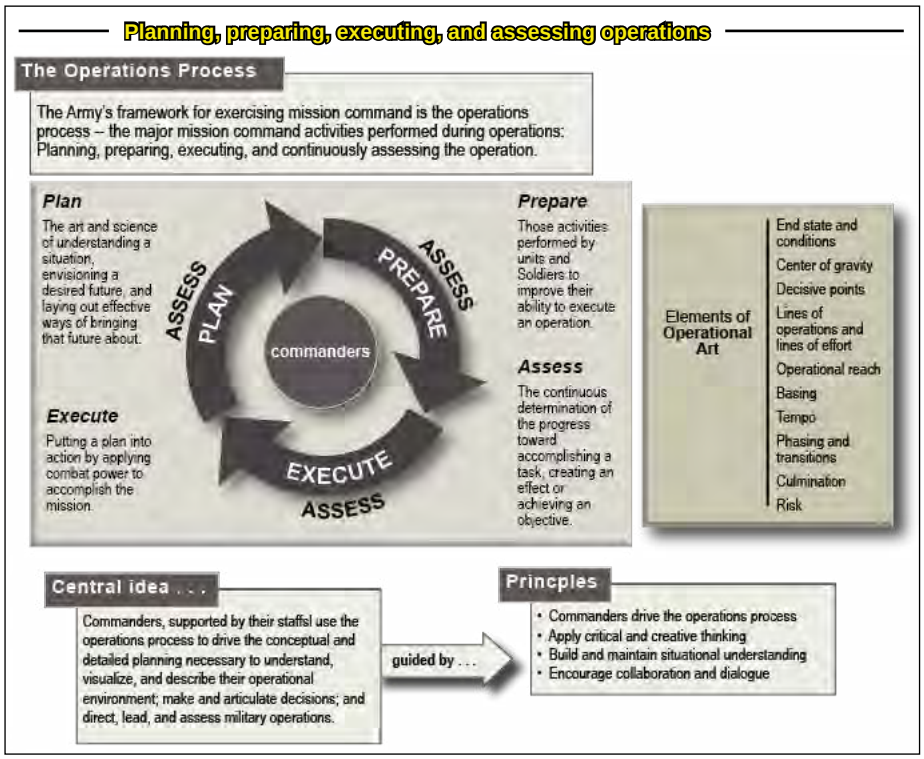
AAR Purpose

AARs' enduring principles and methods have remained relatively unchanged over the years, having only really changed terminology to match the vernacular of the most current doctrine. For example, what was once a "battlefield operating system" is now a "warfighting function."[3] At their core, AARs are tools to analyze a unit's performance in order to improve future performance.[4] They are professional discussions — guided by a facilitator — about a unit's strengths and weaknesses during a particular training event.[5] Conducted effectively, they develop a strategy and assign responsibility to solve those individual or collective tasks that require improvement.

AARs are very much a part of the Army's operations process in that they provide critical feedback to the commander so that he can assess his unit. They are necessarily part of the commander's assessment process. They help to build the common framework for exercising mission command.

In the same vein, the best way to conduct an AAR (multinational or otherwise) is through the same mission command activities performed during operations — plan, prepare, execute, and continuously assess.

Figure 1 — The Four-Step Process for Conducting AARs[6]



Plan

AAR planning is absolutely critical to the effectiveness of AARs. All those providing input to the AAR must know and understand the commander's intent for the training event (i.e., the training objectives), the concept of the operations, and the tasks to be trained.[7] Successful AARs, therefore, have effective AAR plans for each training event that include such factors as selecting appropriate observer-coach-trainers (OCTs), scheduling, determining attendance, choosing training aids, and reviewing performance standards.

Photo by SPC Ryan Tatum

Soldiers from the 2nd Battalion, 7th Infantry Regiment conduct an after actions review with Polish soldiers after engaging in attack maneuvers as part of Anakonda 16 in Poland on 8 June 2016.

In a multinational environment, reviewing performance standards becomes exponentially more important in order to gain and maintain credibility. During multinational operations, we need to look to sources from outside of our own doctrine so that we can make meaningful and accurate observations and potentially compare and contrast methods and standards. In other words, we need to be learned facilitators rather than instructors. Where we would normally look to training and evaluation outlines to develop training objectives, a multinational AAR requires more research from North Atlantic Treaty Organization (NATO) sources and other country-specific sources so that feedback is meaningful. Despite our deference toward the familiar, not everybody does things the way the U.S. Army does, nor do they necessarily want to.

For example, during a recent training rotation at the Joint Multinational Readiness Center (JMRC) at Hohenfels, Germany, an Italian-led multinational brigade task force commanded and controlled several multinational (including U.S.) task-organized battalions. Among the Italian brigade's training objectives was to "plan operations." At first glance, one could have easily opened Army Doctrine Reference Publication (ADRP) 1-03, *The Army Universal Task List*, and identified multiple subsidiary training objectives with well-developed tasks, conditions, and standards. However, the Italians do not use Army Design Methodology or the military decision-making process (MDMP). Instead, they use something more akin to the NATO comprehensive operational planning directive. Further, one of the task force's subordinate battalions used the British Army's Combat Estimate (i.e., "the 7 questions") while the other used the MDMP. In order to be effective in helping to assess this brigade's training, one must at least become conversant in the subtle differences in those processes and how they are interoperable with one another. In this example, an OCT's working knowledge provided a foundation for the AAR as it pertained to "planning operations."

Prepare

AAR preparation is continuous and bridges the gap between planning and execution. During the preparation phase, AAR facilitators — whether internal or external OCTs, or both — should review all orders, training objectives, concepts, and tasks in order to make sure everything observed is relevant. In reality, preparing for the AAR mostly consists of observing the training events and organizing the observations appropriately for the AAR. Regardless of the unit being trained or the complexity of the training, training must be recorded with enough detail to make the AAR meaningful. Details should include events, actions, and observations with accurate date-time groups. At the earliest opportunity after the observed event, they should be integrated with other observations (OCT, opposing force, and others as applicable) and refined into an appropriate medium in order to provide a complete picture of the event.

Depending on the size and structure of the OCT network, preparation also requires that key events be identified so that resources can be applied to it. For example, if one of the unit's training objectives is to conduct a passage of lines, then resources have to be in place to observe and record the event as accurately and completely as possible. Perhaps that means observing the event from perspectives of both the moving and stationary unit or at the planned and actual contact points.

Preparation can be slightly more multifaceted during multinational operations. Observing a passage of lines between two partnered forces, for example, presents an additional level of complexity — new tactical relationships, different languages, unique procedures, different and unfamiliar vehicles. All of these factors have to be identified prior to the key event so the most appropriate resources can be dedicated to observe and document it.

Finally, the AAR needs to be organized and rehearsed. *The Leader's Guide to After Action Reviews* identifies three ways to

organize the AARs — chronologically, by warfighting function, and by key event/theme/issue.[8] It can be done on a vehicle truck-top, on a terrain model, via PowerPoint presentation, etc. The AAR is flexible and can therefore be organized and conducted in any useful way imaginable.

Since the purpose of the AAR is for participants to self-discover strengths and weaknesses, solutions, and courses of actions to resolve weaknesses, the method should be the most appropriate method for the participants. Again, this takes research and understanding of the audience. While a PowerPoint presentation discussing issues through warfighting functions might work great for a U.S. battalion, it is likely inadequate for a formation that is unaccustomed to PowerPoint as a learning/teaching tool and who likewise does not fight by warfighting function.

Execute

Rules should be set and expectations managed right up front, regardless of the training audience. Although most American Soldiers have been through countless AARs from the time they enlisted or were commissioned, the rules for each AAR might be different depending on facilitator and/or audience and therefore should be clearly understood and expressed. As a baseline, every AAR should include the basic rule that everyone should participate and the understanding that the AAR is not a critique, evaluation, or grade.

Soldier participation is paramount to self-discovery. Among other things, Soldier participation during the AAR is directly related to the atmosphere created by the facilitator. Therefore, the facilitator must foster an environment where Soldiers feel comfortable and free to disagree with one another and give honest opinions. They need to know that it is an open forum, generally free from outside influences designed for candid input.

This is difficult for U.S. forces and perhaps more so with multinational participants. How do we ensure group participation with such a diverse audience? Hopefully, by the time an AAR rolls around, there is relative familiarity and comfort-level among the participants. Regardless, group dynamics will fail if we communicate poorly.

Facilitators should avoid idioms, axioms, colloquialisms, and especially acronyms. Despite how much they mean (or do not mean) to us, they often confuse, have no meaning, or mean completely different things to our coalition partners, regardless of whether or not they speak fluent English. Where an American facilitator might tell his audience to "have thick skins" in order to facilitate dialogue, a multinational partner might interpret that to mean, "This is going be harsh; I should deflect this or otherwise not absorb what is about to be said."

Simple, seemingly unambiguous words might also have vastly different meanings influenced by culture. For example, U.S. service members tend to use the term "leaders" almost interchangeably with the term "Soldiers," with only "commanders" enjoying a unique role within military leadership parlance. However, during at least one rotation at the JMRC, "leader" had unique meaning among the primary participants — it meant "decision maker." As a result, when the facilitator insisted that leaders provide the input to the AAR, the input came from only a select few. The point is to identify and understand these idiosyncrasies throughout the AAR planning process and consciously execute the AAR around them.

Finally, facilitators have to execute the AAR according to the developed plan. Although it does not have to be scripted, having a general agenda to facilitate flow of information is a good thing. Typically, after a short introduction, the facilitator summarizes the events (what actually happened), identifies what went right or wrong, and guides the participants to determine how it could be done differently. At its conclusion, the facilitator should summarize and link the conclusions to future training.[9]

Assess

Retraining should be conducted immediately for the AAR to have its greatest effect. However, assessment is a continuous process, and the commander can use the lessons learned from the AAR long after the training event. Further, he can build on those lessons to create new challenges for his unit at each successive training event or operation.

To help the unit link the conclusions to future training or operations, facilitators often frame the challenge as questions:

* What do we want to fix? (What actually happened that could be done better?)
* How can we fix it?
* Who is going to fix it?

In keeping with the theme that AARs are an element of the operations process (assessment), facilitators might also consider asking the question:

* How will we know if we fixed it? (How will we know if it is better?)

Put in the U.S. operations process context, the former identifies a measure of performance, and the latter identifies a measure of effectiveness.[10] This is distinguishable from hindsight at the next AAR. This should be identified right up front — asking the hard questions that will tie the AAR to the next training event or operation and whether we achieved the intended results. It has to be clear and measurable. Once identified, one should be able to state unequivocally that the task has been accomplished (or not).

For example, during a recent mid-rotational AAR at the JMRC, a battalion command sergeant major referenced a casualty collection operation that he wanted to fix. He explained that he was going to "keep the plan simple" in order to fix it. He had therefore identified something he wanted to fix and stated how he was going to fix it. But how does he know that he has kept the plan simple? Simple according to him? Simple according to the medics? What's the metric? Linking his proposed solution to a measure of effectiveness would have provided that metric, allowing him and his commander to more clearly assess the planning, preparation, and execution of the next training iteration.

Conclusion

AARs are important assessment tools — to us and to our

November 1988	Field Manual (FM) 25-100, *Training the Force*	Considered revolutionary in the way the army trains. Battle-focused and based on unit mission essential task list and nested with other doctrinal publications, such as FM 100-5, *Operations*, and FM 22-100, *Leadership*. Designed for brigade and higher organization and leadership.[11]
September 1990	FM 25-101, *Battle Focused Training*	Complemented FM 25-100. Designed to apply the doctrine of FM 25-100 and assist leaders in training program development. Designed for battalion and company organization and leadership.[12]
September 1993	Training Circular (TC) 25-20, *A Leader's Guide to After Action Reviews*	Supplemented and expanded the guidance in FM 25-100.[13]
Circa 2000 – GEN Eric Shinseki ordered extensive reviews of Army doctrine		
October 2002	FM 7-0, *Training the Force*	Updated and superseded FM 25-100. Integrated lessons learned from recent military operations.
September 2003	FM 7-1, *Battle Focused Training*	Updated and superseded FM 25-101. Integrated lessons learned from recent military operations.
December 2008	FM 7-0, *Training for Full Spectrum Operations*	Further developed the concepts of the 2002 version. Incorporated new training for modular organizations.
GEN Raymond Odierno's Vision for the Future: "Doctrine 2015" concept published		
August 2012	Army Doctrine Publication (ADP) 7-0, *Training Units and Developing Leaders*	Superseded FM 7-0. Re-established fundamental training and leader development concepts and processes.
August 2012	Army Doctrine Reference Publication (ADRP) 7-0, *Training Units and Developing Leaders*	Augments principles discussed in ADP 7-0. Refers to *Leader's Guide* (see below) for further discussion of AAR.
August 2012	*The Leader's Guide to After-Action Reviews (AAR)* (Training Management Directorate)	Updates terminology from TC 25-20; supports ADP 7-0 and ADRP 7-0.
December 2013	*The Leader's Guide to After Action Reviews (AAR)* (Training Management Directorate)	Update of August 2012 version.
May 2014	FM 6-0, *Commander and Staff Organization and Operations*	As part of Doctrine 2015, FMs reduced to total of 50. Most knowledge was transitioned to ATPs, but not AAR concepts — AAR is covered in Chapter 16.

Figure 2 — Modern Regulatory History of the Army AAR

multinational partners. Because commanders are conducting simultaneous offensive, defensive, and stability tasks — and increasingly as part of a multinational effort — AARs are as important now as they have ever been. But we have to do them right. AARs help to provide a common lens through which we can assess and improve our multinational interoperability. The conduct of AARs must acknowledge and be responsive to differences in culture and language in order to accomplish this. As a facilitator, the key is to know your audience members and conduct an AAR most useful to them — not necessarily what you might find most useful. Above all, be humble, be kind, and be adaptive.

Notes

[1] TED Talks Radio Hour episode, "Disruptive Leadership,"17 January 2016. Transcript available at http://www.npr.org/templates/transcript/transcript.php?storyId=261084625.

[2] This article is meant to supplement *A Leader's Guide to After Action Reviews*, not replace it. It should also be noted, the leader's guide is based on Army doctrine — not joint, NATO, or partner. Regardless, applying critical analysis to its core will still yield results across formations.

[3] See Figure 2 for a brief history of regulatory AAR guidance.

[4] Army Doctrine Reference Publication (ADRP) 7-0, *Training Units and Developing Leaders* (August 2012), paragraph 3-73, 3-12. "An after action review is a guided analysis of an organization's performance."

[5] *The Leader's Guide to After-Action Reviews*, Combined Arms Center – Training (CAC-T), Training Management Directorate (TMD), Fort Leavenworth, KS (December 2013).

[6] Army Doctrine Publication (ADP) 5-0, *The Operations Process* (May 2012), Figure 1, page iv.

[7] The Leader's Guide to AARs, 7-9.

[8] Ibid, 13.

[9] Ibid, 16.

[10] ADRP5-0, 5-2 to 5-3.

[11] Anne W. Chapman, "The Army's Training Revolution, 1973 – 1990," TRADOC Historical Study Series, Office of the Command Historian, U.S. Army Training and Doctrine Command and Center of Military History (1994), 29-39.

[12] Ibid, 44-45.

[13] TC 25-20, preface.

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Lessons Learned from JRTC Rotation 16-06

MAJ RICK MONTCALM
MAJ JOSEPH MICKLEY

In April 2016, the 1st Brigade Combat Team (-), 101st Airborne Division (Air Assault) "Bastogne" completed its first decisive action Joint Readiness Training Center (JRTC) rotation in more than a decade — a significant departure from the numerous counterinsurgency (COIN)-focused mission readiness exercises to which we've become accustomed. JRTC presented a genuine hybrid threat that combined everything from enemy network compromise capabilities to threat aviation to chemical attacks. After years of training tailored to fight an insurgency in stability-focused scenarios in support of repeat deployments, our ability to fight such a threat had largely atrophied. In this article, we attempt to group our lessons learned into broad themes that cross over several, if not all, warfighting functions. While not a comprehensive list (separate articles could be written about each), these lessons were chosen because they drive the brigade's training moving forward.

From COIN to Decisive Action: Shifting the Training Paradigm

The positive side of the repeat deployments over the last 13 years is the warfighting experience of our NCOs through field grade officers. This is a group accustomed to dealing with uncertainty, evolving threats, and partnered operations. The downside is that the experience is limited, to a great extent, to the capabilities and limitations of the threats in Iraq and Afghanistan, neither of which come close to the hybrid threats we faced from the Arianan threat at JRTC. A perfect example of the early learning curve was this report from the leader of a combat patrol: "The enemy has helicopters that keep shooting at us. What do we do?" The guidance from the brigade tactical operations center (TOC): "You have .50 cal. machine guns, Javelins, and TOWs (tube-launched, optically tracked, wireless-guided missiles). Shoot back." Seems simple enough, but those aren't threats we've replicated in collective training in quite some time. We lack the general experiences of Soldiers from previous generations who trained AirLand Battle and understood the nuances of planning for and dealing with a wider spectrum of enemy capabilities.

The Arianan threat covered the full spectrum of capabilities, from conventional armor and infantry units to special purpose

forces, criminal/insurgent threats, CBRN (chemical, biological, radiological, nuclear) capabilities, aviation and unmanned aerial systems (UAS), and even "red" media. Where the brigade struggled was not in engagements with traditional capabilities — we are adept at combating any ground threat in an offensive engagement. Our tactical difficulties and pre-deployment training shortfalls were highlighted in the unexpected threats. For example, our experience fully prepared us to deal with an isolated improvised explosive device (IED) followed by a recovery mission, but it did not prepare us for an enemy obstacle belt with integrated fires and an assault force that regularly inflicted mass casualties.

In the end, changing two approaches allowed us to regain the initiative. First, shifting the mental model from COIN to decisive action started with reinforcing the basics and becoming comfortable with discomfort. Gone are the days of basing operations from a forward operating base (FOB) with showers, cots, and laundry facilities. Soldiers and leaders worked through very deliberate load plans and packing lists to ensure they were equipped for multi-day operations at extended ranges from their battalion or squadron headquarters. Going back to doctrine and employing battle drills produced more shared understanding of how to combat a near-peer threat.

Second, we identified and exploited the opposing force's (OPFOR's) operational patterns and preferences. Since weather denied us the use of aircraft for most of the rotation and roads quickly proved untenable, we walked. C Troop, 1st Squadron, 32nd Cavalry Regiment — the light reconnaissance troop — logged 90 kilometers in 10 days. During the final assault, an infantry battalion walked 34 kilometers from the eastern boundary of the training area to the objective, bypassing mechanized threats en route to the objective. During our final after action review (AAR), the OPFOR commander conceded that our movement of large formations away from roads limited his ability to identify and disrupt our operations, ultimately allowing us to seize our final objective ahead of schedule.

Empowering the Commander to Make Decisions

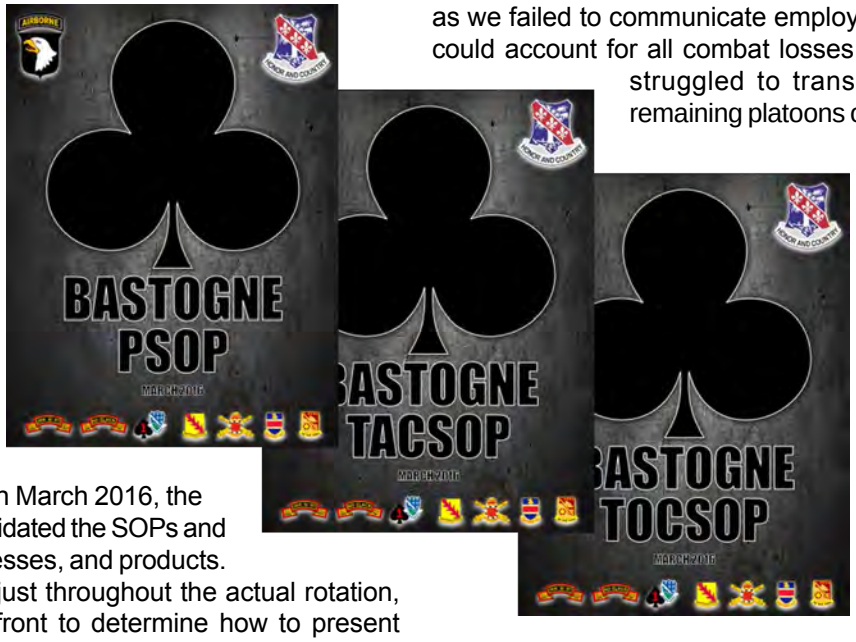
If the purpose of the brigade staff is to resource subordinate operations, synchronize operations, and enable the brigade commander to make decisions, we fell short in developing a standard set of operational products that could achieve that goal. Early on, the brigade staff produced a myriad of products across the warfighting functions that made decision making and synchronization difficult. The increasing number of products resulted in greater likelihood of discrepancies in timing and prioritization. Towards the end of the rotation, we narrowed production to just a few products: standard map with common graphics, synchronization matrix, execution checklist, target execution list, and decision support matrix/template. With these five products, the brigade commander could manage the fight, and the reduction in outputs allowed the staff to more effectively focus. Getting to this point required shared understanding between our commander and the staff's ability to produce products that enabled his understanding and visualization of the fight in front of us. Shared understanding and clear commander's intent are essential to effective synchronization; omitting either will allow the brigade staff to lose focus.

Related to this was the overall staff planning process training that occurred simultaneous with collective training at the battalion level. As part of the brigade headquarters' training

Soldiers with the 1st Brigade Combat Team, 101st Airborne Division conduct a live-fire rehearsal during Joint Readiness Training Center Rotation 16-06 at Fort Polk, LA, on 13 April 2016.

U.S. Army photo

progression, the brigade staff completed one full iteration of tactical military decision-making process (MDMP) focused on refining the plans standard operating procedure (PSOP), to include all associated briefs and products. From that initial training, the PSOP and TOCSOP were updated and redistributed across the staff. During the JRTC Leader Training Program in March 2016, the brigade staff once again validated the SOPs and further refined briefs, processes, and products. While we continued to adjust throughout the actual rotation, having invested time up front to determine how to present information to the brigade was vital to the early planning process.



In the four months prior to the rotation, the brigade and battalion staffs developed and adopted a more comprehensive battle rhythm that was nested with the division headquarters. The revamped version reduced the overall number of meetings but provided greater clarity on expected inputs and outcomes from the remaining meetings. As we developed the tactical battle rhythm for JRTC, we adopted a similar approach. First, the battle rhythm had to include a complete daily targeting and planning process that culminated in a nightly fragmentary order (FRAGORD). The second, like our home-station battle rhythm, is that it had to be nested with and support the higher headquarters battle rhythm. While we achieved the format and deployed to JRTC with it, we struggled with enforcement, which ultimately reduced the positive impact that such predictability could have provided.

Synchronizing the Warfighting Functions and Leveraging all Capabilities

During reception, staging, onward movement, and integration (RSOI), the brigade staff employed a number of detailed tracking systems to ensure we accounted for the location of all personnel and equipment, where the brigade was in terms of completing RSOI requirements, and the operational status of every possible system as we built combat power. While we had a number of detailed "bubble charts" that captured combat power and readiness snapshots in time, we never transitioned to communicating what that progress meant in terms of capabilities and combat power. For instance, within three days of consolidating all TOCs, our charts indicated the full suite of communications systems were fully linked and communicating. What the charts didn't communicate was that operators at the battalion and squadron level didn't necessarily understand how to employ the system.

Where this shortcoming perhaps hurt the worst was upon immediate deployment into "the box" during the initial attack as we failed to communicate employable combat power. We could account for all combat losses, but the battle captains struggled to translate raw numbers into remaining platoons or companies the brigade commander had available. Not until after the mid-rotation AAR did we develop a functional system that leveraged liaison officers (LNOs) from the subordinate units to track capabilities in real time and then brief them to the brigade commander at each evening battle update brief (BUB). This venue ensured widest dissemination and shared understanding across the board; it also enabled the brigade commander to make task organization changes as needed.

Our difficulties in synchronizing and sustaining the fight go back to the importance of the battle rhythm. During RSOI, when all units were consolidated at the intermediate staging base (ISB), face-to-face meetings were easily conducted and effective. Once the brigade deployed from the ISB and began dispersed operations across the battlefield, operations synch (OPSYNCH) and logistics synch (LOGSYNCH) meetings became infrequent, poorly attended, and marginally effective. Combined with incomplete reports and poor enforcement of reporting requirements, the resulting effect was most of the resupply operations were done with minimal notice when units were "black" on a certain class of supply.

Perhaps the most important battle rhythm event, the OPSYNCH suffered the same difficulties as the LOGSYNCH, often resulting in disjointed operations, poor prioritization of enabling assets, and missed opportunities to gain access to division-level assets. Two changes helped us correct course, albeit towards the end of the rotation. First, we enforced the battle rhythm reporting scheduled and distributed standard report formats to ensure we received the right information, at the right time, in the right format. Second, we shifted away from exclusively relying on subordinate TOCs to submit reports and leveraged the LNOs present on the current operations floor 24 hours per day. This not only freed up the battle captain but also ensured LNOs better understood their units' needs.

The Way Ahead

Master the basics — shoot, move, and communicate. As a light infantry brigade, we shoot and maneuver on the battlefield effectively — this is well within our comfort zone. Where we struggle is leveraging all communication platforms from the Capabilities Set 14 (now CS16) to coordinate and synchronize operations. Moving forward, our TOCSOP and tactical SOP (TACSOP) will more clearly delineate what platforms are used

Soldiers with 1st Brigade Combat Team, 101st Airborne Division, conduct a live-fire rehearsal at Pearson Ridge Training Area during JRTC Rotation 16-06 at Fort Polk on 13 April 2016.
U.S. Army photo

for what transmissions and under what circumstances. While we adhere well to standard radio protocol, we have not yet effectively captured standards. In addition, we have built new systems to maintain and track digital skill proficiency. The nuances of our mission command systems require continual sustainment training in order to maintain individual proficiency. The collective tasks required to establish and maintain effective mission command are just as important. To this point, the brigade has developed a multi-echelon approach to layering command post exercises (CPXs) into home-station training.

The benefits of more realistic and rigorous training depend largely on the threat force against which our formations fight. While we can't fully replicate the OPFOR from JRTC, we can replicate some of the more challenging capabilities. Rather than having specifically identified OPFOR, pitting formations against one another in force-on-force provides a thinking enemy, with identical capabilities, and allows leaders at all levels to exercise subordinate leader development from squad through company level.

As more time passes since our JRTC decisive action training environment (DATE) rotation, it remains imperative to effectively integrate our lessons learned through the refinement of our SOPs. We have developed a deliberate plan to codify the most challenging lessons learned into the newly formed brigade TACSOP. Time management is often our own worst enemy, and nowhere is this more readily apparent than at JRTC. One benefit from a sound SOP is that it will save time as units are permitted the ability to execute an operation freely and stay within the commander's intent by following an agreed upon standard for the operation. The condensed timelines at JRTC stress a unit's ability to develop succinct plans that are synchronized across warfighting functions. As we move forward, codifying particular operations (such as a combined arms breach) and distinct DATE battle drills (such as react to enemy air) will allow us to gain efficiency as an organization and better prepare us to face a hybrid threat.

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STRONGER TOGETHER:

EXPERIENCING INTEROPERABILITY AT JRTC

SSG CHRISTOPHER J. WHEATLEY
CPT DANIEL T. HARRISON

U.S. Army operations are conducted with multinational partners in every theater, and the need to develop and maintain interoperability expertise is only increasing at all echelons across the force. Tactical maneuver formations in particular need to focus on identifying and neutralizing friction points that will inevitably arise when working with partners from outside our Army. A recent rotation at the Joint Readiness Training Center (JRTC) at Fort Polk, LA, saw units from the 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division grapple with the challenges of interoperability. Based on its experiences, the brigade identified some issues that formations are likely to face in the future as well as some potential solutions. Topics of interest included integration of multinational partners, mission command systems and communications security (COMSEC) requirements, sustainment, and potential future training opportunities.

As part of JRTC Rotation 16-04, an airborne infantry platoon from the 3rd Battalion, Princess Patricia's Canadian Light Infantry (3 PPCLI) traveled to Fort Polk and exchanged places with a U.S. platoon from the 3rd Battalion, 509th Parachute Infantry Regiment which then participated in a near simultaneous Canadian Army training event. While the experience was an overwhelming success in terms of growth and achievement for all rotational unit participants, some key lessons were learned that can enable other U.S. units to be successful in similar situations.

Integration of Multinational Partners

Though some limited email and phone coordination had occurred prior to arrival, leaders in both the Canadian platoon and the U.S. company it operated under identified the lack of prior in-depth coordination as a key gap in their preparation. The Canadian soldiers traveled to Joint Base Elmendorf-Richardson, AK, for familiarization with the T11 parachute prior to the rotation, but neither element shared their standard operating procedures (SOPs) or discussed tactics, techniques, and procedures (TTPs) before conducting planning and rehearsals in Louisiana. The leaders of both organizations directed rehearsals and capability briefs upon arrival to create understanding prior to conducting operations. Ideally, the

Leaders conduct final equipment checks before executing a counterattack following a brigade defense during Joint Readiness Training Center Rotation 16-04.
Photo by CPT Daniel T. Harrison

Canadian platoon would have trained with the U.S. company prior to arrival at a crucible training event like a Combat Training Center (CTC) rotation; foregoing such an opportunity, deliberate communication between two such organizations could preclude discovery learning during execution. Unit SOPs and service doctrine should be exchanged at a minimum so that key leaders can start communicating from a common knowledge base. This must be a deliberate and formalized exchange of information that enables unity of effort and shared understanding.

Common Language, Different Doctrine

One particularly surprising challenge for both the rotational training units and for JRTC observer-coach-trainers (OCTs) was the actual sharing of doctrine. Information security (INFOSEC) practices are appropriately stringent, and acquiring access to the Canadian equivalent manuals required some very deliberate effort by the platoon OCTs while preparing to support the 3 PPCLI platoon. The Canadian leadership expressed their own frustrations in attempting to gain access to U.S. manuals since the latest versions are not readily available to anyone without Common Access Card (CAC) access. Though similar in nature and generally producing the same outputs, the eight American troop leading procedures and the 16 Canadian battle procedures are different enough that significant discussion was generated when exposed to the previously unseen systems. Being able to communicate with like terms enabled OCTs to more effectively coach the Canadian soldiers as well as provide doctrinal feedback to both organizations. A Center for Army Lessons Learned (CALL) analyst who observed significant portions of the training recommended that training centers maintain a library of appropriate and relevant doctrine from multinational partners that meets INFOSEC requirements to assist units and OCTs preparing to conduct or coach multinational training. Additionally, the library could share U.S. doctrine with approved leaders from multinational organizations during the preparation phase.

Mission Command Systems and Communications Security (COMSEC)

Clear and efficient communication systems and procedures are the hallmarks of effective interoperability and partnership. Meeting COMSEC requirements and maintaining communication were serious challenges during this training event and are easy mistakes in a multinational training environment. When brigades conduct the Leader Training Program at Fort Polk approximately 65 days prior to starting a rotation, the requirements to request bandwidth and technical steps to allocate COMSEC for multinational partners are laid out in the division operation order that the unit crafts into a brigade order. The appropriate actions for the brigade to take, starting with notification during the initial planning conference approximately 180 days prior to the rotation, include requesting coalition COMSEC for multinational partners. The unit also advises partner units to bring their internal COMSEC and the critical voice-bridging systems that allow cross-talk with U.S. units while maintaining their internal security. Additionally, planning and utilizing a full primary, alternate, contingency, emergency (PACE) plan for cross-talk

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ensures uninterrupted mission command. The primary form of FM communications should be via coalition COMSEC and the alternate through the voice-bridging systems. The contingency plan should be through an attached U.S. radio operator, and emergency should be through single-channel plain text FM. This ensures that multinational partners can continue to talk with appropriate COMSEC measures in place.

During JRTC 16-04, the Canadian platoon had six radios capable of accepting coalition COMSEC fills in addition to each Soldier carrying a squad radio capable of handling internal COMSEC. Coalition COMSEC was not available, and voice-bridging systems were not brought, resulting in significant strain on the company's ability to conduct mission command with that platoon. The eventual solution was to provide a U.S. radio operator and forward observer to the Canadian platoon to maintain uninterrupted communications. Though clearly a sound solution given the problem set and assets available, robust planning would have enabled more efficient communications.

Sustainment: The Devil is in the Details

While supplying Soldiers with the most basic of needs, Class I (food and water) and Class V (ammunition) were quite simple in part due to NATO standardization of supply systems; the specifics of other classes of supply can be more challenging when significant analysis of requirements is not conducted prior to arrival at an austere or limited access location. The Canadian platoon brought an armorer with significant weapons parts to repair or maintain weapons systems. This proved to be an extremely sound decision as the Colt Canada C7 Assault Rifle's upper receiver has a hammer-forged heavy barrel that is significantly different from the standard U.S. M4. U.S. maintenance personnel in a brigade combat team would not be able to maintain that weapon. The C6 General Purpose Machine Gun (GPMG), the basic machine gun supporting the Canadian infantry platoon, is functionally the same weapon as the M240 but lacks Picatinny rail systems. These differences were identified early enough during the reception, staging, and onward integration (RSOI) phase of the operation that they did not cause any disruption. Because of the no rail issue, the multiple integrated laser engagement system (MILES) contractors at JRTC attached a bracket to the barrel to enable mounting. These brackets are not normally used and are in short supply, and this could become a larger issue depending on the size of the coalition formation.

Photo by SSG Brian Ragin

U.S. and Canadian Soldiers conduct joint medical evacuation training during RSOI at Alexandria International Airport in Louisiana in preparation for a rotation at the Joint Readiness Training Center on 13 February 2016.

Counter-improvised explosive device (C-IED) equipment is a mainstay of operational issue items, though the differences in power sources can cause consternation. The mine detector systems that the Canadian platoon brought required batteries which the unit was not able to acquire through usual supply requests. This required the issuance of U.S. C-IED equipment and additional training to enable that capability during operations. Additionally, casualty evacuation (CASEVAC) equipment requirements were not identified adequately, and the Canadian platoon arrived without their standard litters due to issues with international shipping; the platoon was also unable to carry this equipment with them while flying commercially due to weight and size restrictions. The company cross-loaded pole-less and SKEDCO litters to augment capabilities in response. Contingency planning for availability of evacuation equipment for multinational partners must be conducted to ensure systems are on hand to cover gaps resulting from customs or carrier restrictions. The Canadian Army does not issue the Individual First Aid Kit (IFAK) for use during standard training events. While the gap was identified during the pre-rotational coordination meetings, the platoon still found itself deploying with around half of the needed kits. When requiring multinational partners to bring equipment considered mission essential, such as the IFAK, U.S. units may need to assist in requisitioning such equipment and most certainly should identify these requirements as early as possible. One tactic that the Canadian platoon's leadership identified during their post-rotation analysis was to place a "catch team" of Canadian soldiers within the medical support system to provide administrative oversight of evacuated Soldiers. This would enable better care and support to partner soldiers evacuated through U.S. systems during treatment, recovery, and repatriation.

Most of these friction points should be identified at two events prior to arrival: the sustainment conference or Pre-Deployment Site Survey (PDSS)-1 at approximately 90 days prior to execution and at a task-organization internal planning event that identifies support requirements between the U.S. and multinational partner. Although many of the supply issues identified were easily fixed during RSOI, not all Soldiers were comfortable with and capable of operating the new systems, such as U.S. mine detectors, SKEDCOs, and radio systems. This hadn't been planned for and required significant organizational energy to solve during a compressed planning timeline.

Finally, the Canadian platoon brought an M3 Carl Gustaf recoilless rifle as its sole anti-tank system. The company and supporting logistical elements struggled with requesting and allocating ammunition for that system, driven mostly by the fact that the BCT did not have the "Goose" in its organic units. The system couldn't be employed during the rotation because ammunition wasn't available. The company commander highlighted this as a key lesson learned since employment of such a capable anti-tank system would have assisted greatly during conduct of the defense. (The Army

has since announced that the Multi-Role Anti-Armor Anti-Personnel Weapon System [MAAWS, M3 Carl Gustaf] will be carried by every Infantry platoon.)[1] Familiarity with the system will undoubtedly increase across formations, but the need to identify and coordinate support for unique weapons in partner formations will remain critical to employing all available combat power.

Future Training Opportunities

Leaders, Soldiers, and OCTs need broader exposure to multinational partners' operations processes and leader planning to enable future success in planning and execution. If fiscally feasible, exchange opportunities should be explored and expanded between JRTC and the Canadian Manoeuvre Training Centre (CMTC) in Alberta as well as other key partner training centers. This would greatly enhance partnership and understanding of doctrinal differences for senior NCOs and officers (captains and majors) who continue to be the primary mentors to rotational units at the battalion and below level. The Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany, explores interoperability during essentially every rotation. A former senior interagency training advisor to JMRC suggests the best way forward is not to force multinational partners to adopt U.S. doctrine but rather to focus on functional interoperability and allow partners to operate within the familiar realms of their doctrine while still meeting the overall commander's intent.[2] In particular, conducting mission command exercises such as operational simulations with multinational partner headquarters prior to attendance of a CTC rotation could greatly enhance the effectiveness of the coalition during execution. Giving U.S .rotational units the opportunity to integrate into a Canadian battalion and conduct large full spectrum operations at the CMTC would also be highly beneficial to increasing the U.S./Canadian partnership and interoperability understanding.

Summary

As formations begin to focus training as regionally aligned forces or regionally focused mission sets, training with partners will only continue to increase as demands for coalition operations increase in the complex and unstable global environment. These experiences and insights between U.S. and Canadian forces highlight common focus areas that can and will arise between coalition members, regardless of which region or theater operations are conducted in. By establishing communication early and identifying doctrinal differences and capability gaps, formations can better prepare themselves to conduct partnered operations within any operating environment with minimal loss of efficiency.

Notes

[1] Matthew Cox, "U.S. Army Adds 84mm Recoilless Rifle to Platoon Arsenal," *Military.com*, 20 May 2016, http://www.military.com/daily-news/2016/05/20/us-army-adds-84mm-recoilless-rifle-to-platoon-arsenal.html.

[2] James Derleth, "Enhancing Interoperability: The Foundation for Effective NATO Operations," *NATO Review*, n.d., http://www.nato.int/docu/Review/2015/Also-in-2015/enhancing-interoperability-the-foundation-for-effective-nato-operations/EN/index.htm.

Photo by CPT Daniel T. Harrison

U.S. and Canadian jumpmasters conduct Sustained Airborne Training on 16 February 2016 prior to executing an airborne insertion.

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CPT Daniel T. Harrison is a maneuver rotational planner at JRTC. His previous assignments include serving as an infantry company senior OCT at JRTC; Headquarters and Headquarters Company (HHC) and rifle company commander in the 2nd Battalion, 16th Infantry Regiment; the chief of plans for the 4th IBCT, 1st Infantry Division; and as a troop executive officer and platoon leader in the 4th Squadron, 73rd Cavalry Regiment, 4th BCT, 82nd Airborne Division. His operational experience includes three deployments: western Afghanistan, eastern Afghanistan, and East Africa; he has worked with Afghan, Italian, Polish, Djiboutian, French, German, Japanese, Burundian, British, and Australian forces in both training and operating environments. CPT Harrison is a 2007 graduate of the U.S. Military Academy at West Point, NY, and a 2015 University of North Carolina-Institute for Defense and Business Strategic Studies Fellow.

AT FOR A DISMOUNTED RECON TROOP

CPT RYAN P. HOVATTER

Soldiers with the 1st Squadron, 153rd Cavalry Regiment, 53rd Infantry Brigade Combat Team, Florida Army National Guard, conducted reconnaissance operations with an attached weapons company during its 2015 annual training (AT) March 11-29 at Fort Stewart, GA.

Prior to this event, the squadron's dismounted reconnaissance troop (DRT) — C Troop — had struggled with figuring out its place within the mounted cavalry reconnaissance squadron and how it could best be deployed.

Background

During AT in 2014, C Troop was the 53rd IBCT's decisive operation for a brigade air assault at Camp Blanding, FL. The troop inserted on the landing zone (LZ) at night and started its zone reconnaissance toward anticipated enemy positions. The C Troop commander drove forward in his command high mobility multipurpose wheeled vehicle (HMMWV) and attempted to coordinate reconnaissance missions and submit situation reports (SITREPs) to squadron headquarters. The C Troop scouts were supposed to advance up to 2 kilometers in from the LZ to conduct reconnaissance of named areas of interest (NAIs). Once the scouts located enemy battle positions or 24 hours after insertion, the two mounted reconnaissance troops (MRTs) were to ground assault convoy to C Troop's left and right and start their zone reconnaissance missions. C Troop would remain between the two MRTs and recon the severely restricted terrain in the middle. The problems were many.

First, C Troop packed according to a packing list more designed for deploying than for reconnoitering. They had too much extra stuff. It seems that most scouts had an extra pair of boots, an extra set of uniforms, and many socks, t-shirts, e-tools, water, etc. Second, the terrain they were to move through was severely restricted; the scouts spent three hours chopping at palmetto bushes and tangled vines to advance 300 meters from the LZ. Some scouts had machetes and whacked wildly through the night, which did little except tire the lead scouts. They took turns hacking, making a lot of noise and losing the battle with the Florida swamp. The most effective way to traverse the palmettos was for the lead scout to fall backwards using his rucksack to cushion his fall and knock down some of the palmetto fronds, but this also tired the scouts and created too much noise. Since they inserted at night, the unit could not find another way forward in the dark canopied forest. The third issue was communication. The scouts inserted with short whip antennas because they were easier to move with. The problem was that short whip antennas often failed to reach the troop commander, and the troop commander was so far forward that even he had trouble communicating with the squadron tactical operations center (TOC).

As a night battle captain in the TOC, I was shocked to hear the C Troop commander report he could no longer move: his scouts were exhausted and they had used most of their water. His troop was going to establish security and wait for daylight. Upon hearing this, the squadron immediately launched the two MRTs to move toward their line of departure (LD) and start their zone reconnaissance. That night the two MRTs passed C Troop and reconnoitered by force, finding enemy positions, calling for air support and fire missions, and at times directly engaging the enemy. The infantry battalions air assaulted into the same LZ the next day and also passed C Troop. C Troop not only failed its reconnaissance mission, but it had little value to the brigade during the remaining fight.

So where does C Troop fit in with the IBCT's reconnaissance? The avenue of advance was severely restricted and higher's expectations may not have been realistic. C Troop was acting like an infantry company, moving as one large unit and making a lot of noise while doing it. After the troop's failure to advance on the first night, it was bypassed and not used again. On top of this demoralizing performance, there was talk throughout the Army of either replacing the DRT with a third MRT or disbanding Charlie Troops altogether.

All of this was on every Soldier's mind as we prepared for our 19-day AT in March 2015 at Fort Stewart. I took command of C Troop five months prior to AT and had three things I believed we needed to do differently in order to be successful during our reconnaissance missions: engaged leadership with a special emphasis on encouraging Soldier initiative, improved Soldier load planning, and better communication planning. We needed to focus on reconnaissance at the scout section level. The sections needed to be comfortable with operating separately from the platoon and troop, and they also needed to be able to work and communicate with different commands. I envisioned two ways to employ C Troop. One way would be to assign us battlespace with a zone reconnaissance mission. This is simple for control measures, but the DRT cannot move as fast as the MRTs and this is exactly the way the troop was used during the 2014 AT. The second way would be to give us NAIs across the squadron's battlespace. These NAIs may differ from the MRTs' because they are in areas inaccessible to HMMWVs or because the NAIs are further in front and stealth is required.

Engaged Leadership

The troop commander needs to be on foot with the insertion in order to understand the decreasing capabilities of the scouts as they continue their mission. Scouts should be at their

peak just before the insertion and shortly after, but prolonged missions wear on their ability to make decisions, adapt, stay vigilant, and prepare for new missions. It is more difficult to assess their ability, which is heavily influenced by morale, if the commander is not with the scouts. Also, there is a meaningful morale boost when the commander is suffering the same as, or at least a little like, his Soldiers. I knew I had to be there to assess the scouts and to lead by example. During our air assault onto Remagen DZ at Fort Stewart, I inserted with the troop and followed one of the platoons as it set into a patrol base. I carried a rucksack with Advanced System Improvement Program (ASIP) radio set to monitor the squadron's command net, a COM-201B antenna to set up when we established our patrol base, and two extra batteries on top of my food, water, and very little personal gear.

We had four working vehicles before we left Florida, but by the time the exercise started we only had two: C27 — 2nd platoon's HMMWV and C4 — the supply light medium tactical vehicle (LMTV). The platoons had no vehicles and when I joined the "rolling" command post (CP), I used the vehicle-mounted Single-Channel Ground and Airborne Radio System (SINCGARS). I also brought with me my radio-telephone operator (RTO) and forward observer (FO) which made the rolling CP one truck with 10 personnel total. Most of the headquarters walked, leaving only three personnel in the vehicle. I preferred to walk and had my first sergeant ride. We never had the rolling CP in one location for more than a day. It had to constantly move to best support the scouts. C27 would sometimes drive off ahead or it would wait for us to move and then catch up, depending on the tactical situation. We rarely walked next to the vehicle because we believed it to be a target with a larger signature and it was stuck to roads and trails.

C Troop had undergone a fundamental cultural shift in my first five months of command. It was a long time coming, but the Soldiers were ready. The impetus for change started with my assumption of command and new philosophy. I placed an emphasis on initiative from the Soldier and specifically focused on the individual scout. We encouraged goal setting and held those failing to meet the standard accountable. We also rewarded Soldiers of any rank with schools based on an appropriate order of merit list.

Soldier Load Planning

The second most important aspect was to concentrate on the Soldier's load. We couldn't just start with a base packing list and then add mission essential equipment. The Soldiers would be too weighed down and become demoralized the longer the mission went on. We spent a lot of time load planning, and the platoons and sniper section rehearsed their packing days prior to the mission. We tried to have everyone use assault packs but realized that certain Soldiers needed to take rucksacks because of equipment and comfort added by having a frame. We planned to rotate rucksacks and assault packs as needed for the mission. For example, radios were assigned to individuals, but frequently passed around the platoon and troop as needed for certain missions.

No pogey bait was allowed. I was very serious about this. I only wanted our Soldiers bringing Meals, Ready to Eat (MREs), broken down to cut weight. Leaders monitored their scouts on the amount of food they ate. Two MREs a day was our plan. I

Photo by SGT Joshua Laidacker

An Infantryman with Troop C, 1st Squadron, 153rd Cavalry Regiment, 53rd Infantry Brigade Combat Team, takes aim from a rooftop to suppress enemy soldiers during Vanguard Focus at Fort Stewart, GA, on 23 March 2015.

was afraid that Soldiers would load up on food they wanted to eat, like beef jerky, cans of tuna or chicken, Vienna sausages, and energy drinks. This was about discipline, carrying the bare essentials, and gaining the calories and nutrients needed to survive our exercise. I also believed that leaders didn't need to spend too much time considering nutrition; and since none of us are dietitians and the Army has invested years of research into MRE development, we did not allow Soldiers to bring their own food.

There was one medic attached, however, that I found brought cans of tuna and a three-pound bag of hard candy on the insertion. The attached medics and FOs were integrated late into the platoons, only a day before H-hour, and the scout section leaders responsible for their inspection told me later they were told they could bring anything they wanted but would have to suffer with it. Later, on a long movement behind "enemy" lines, the FO kept lagging behind and flopping on his back during halts. He was exhausted and needed help. His teammates ended up carrying his rucksack for him. They passed off the ruck between scouts until they reached their pickup site. We quickly sent that FO back to squadron. That FO will never walk with C Troop again. The real lesson learned here was that the platoon leaders (PLs) need to conduct pre-combat inspections (PCIs) on their attachments and ensure they follow the load plan guidance.

Maybe it should go without saying, but we had a no cell phone policy in order to prevent distractions or compromise our positions. I also remembered my time as a night battle captain in the TOC during AT 2014 watching a feed from supporting aircraft that showed Soldiers playing on their cell phones while laying on top of their HMMWVs or in their battle positions.

The rest of the packing list was short. For our first mission we planned to insert, establish observation posts (OPs), remain unsupported for up to 72 hours, then withdraw, pass through the squadron's screen, and refit. Therefore, we decided that no extra boots or extra uniforms could be taken. We limited t-shirts and socks to one or two each. We carried two broken down MREs in our packs on the insertion. This was to carry us through one whole day and give us time to recover food and water caches. We initially planned to bring cases of MREs and five-gallon water jugs off the helicopters on the insertion and establish caches that first night. They would have been bulky to move and slowed us down, but we wouldn't be carrying it in our rucksacks for days, like the year before. We changed that plan and planted the caches two days in advance. The caches were a huge success. We were able to carry less weight on our movement and had the confidence that resupply was available when we needed it.

The two platoons established two caches each and the sniper section used the same cache as 1st Platoon. One of 1st Platoon's caches was raided by wild hogs which ate all of the MREs, left a mess of MRE wrappers, and forced that platoon to cross load food, giving each Soldier a little less than two MREs per day. We figured that each Soldier would need 5 quarts of water per day. There are water consumption tables that give high figures citing gallons a day, but we believed that

Maybe it should go without saying, but we had a no cell phone policy in order to prevent distractions or compromise our positions.

was impractical and that our scouts would eventually be in static OPs needing less water. We also considered the temperature which ranged from as low as the 50s at night to the high 70s in the day. The Soldier had to carry 5 quarts of water on them or in their pack for the first day, and the caches would cover the next two days of water. After we withdrew from our first mission, we left the water jugs in place. None were discovered by the "enemy," and we recovered them at the end of the exercise. It did cost a lot in water jugs to leave them, but we figured we still had enough to operate during the exercise.

Since we rucked everything in with us and were not to be resupplied for up to 72 hours, I ordered that Soldiers not shave during our first mission. This was to conserve water that might otherwise be wasted on shaving and keep Soldiers from bringing noisy electric shavers to their OPs. The no-shave order was about common sense, although it didn't hurt that it was popular with the Soldiers.

Communication

Our communication plan was certainly more robust than ever before, but it still left room for improvement. Our senior RTO was new to the position and was trained by the outgoing RTO (neither was school trained). Commo is the scout's weapon of choice, and it is every leader's responsibility to ensure they can communicate. C Troop has three ways to communicate — SINCGARS (VHF), High Frequency (HF), and tactical satellite (TACSAT) — and a total of five tactical platforms. For VHF we had PRC-119 manpacks and PRC-148 Multiband Inter/Intra Team Radios (MBITRs). Our single mission-capable HMMWV had two radios but only one mounted antenna. When the rolling CP stopped, the RTO hung an antenna in a tree and hooked it up to one of the vehicle radios. This was inefficient. The truck needed two antennas, but at the time we just didn't have that option. Later, we used a manpack on the floor of the truck commander's side with a long whip antenna extending out of the door. The soft door easily closed over the protruding antenna and allowed for on-the-move communication with two SINCGARS radios from the truck, one monitoring troop and the other monitoring squadron net. We brought four COM-201B antennas with us. I carried one, my FO carried another, and 1st Platoon and the sniper section each carried one as well.

We decided not to use the HF radios for three reasons. First, the squadron S6 assured us that the whole battlefield was in range for SINCGARS. Another reason we didn't carry the HF radios is that nearly every trooper was already burdened with some form of communication equipment already because we were at 50 percent strength, and we were trying to keep the Soldier's load lighter. (Note: We weren't at full strength because of school funding shortages. Any Soldier attending a school went in-lieu-of AT.) I regretted not taking the HF radios, especially after the first 24 hours of intermittent communication

with squadron and 1st Platoon. HF would have been a good long-range, albeit unsecure, backup in the commo plan.

Charlie Troop has two vehicle-mounted PSC-5s which were not used in our operation because those vehicles were non-mission capable and two dismounted PRC-117 with inverted umbrella-shaped antennas. My senior RTO carried one of these and would set it up at every halt. The sniper section had one, too. Two of my RTOs had about an hour of training from a civilian on use of the PRC-117, but it was not enough class time. It has an alternate capability to communicate via SINCGARS, but my RTOs didn't learn how to use it in that configuration. We did communicate with squadron about half a dozen times throughout the exercise, but we attempted to communicate many more times. The takeaway is that C Troop needs a school-trained RTO and needs to spend more time with this equipment.

The troop's PACE (primary, alternate, contingency, emergency) plan changed slightly throughout the exercise. Each platoon and the sniper section often had slightly different PACE plans because the troop generally didn't own battlespace. We mostly worked in A and B Troop's battlespace, which meant that their command net on SINCGARS was part of our PACE.

Results

C Troop had tremendous success during AT 2015. One particular mission highlights the cultural shift and payoff of Soldier's load and commo planning. We were given a mission to infiltrate the enemy defense and conduct reconnaissance on an NAI which was believed to be the enemy battalion's TOC. The mission came after several days of long, tough missions.

I decided to create a unique patrol for our mission. My scouts were worn out, and I needed the most fit and able scouts to infiltrate. I led the mission personally because we were the decisive operation for the squadron and understood the positive effects on morale. I was also very aware of the past year's failure to accomplish a mission and knew this was a time for engaged and present leadership. The platoon leader (PL) for 1st Platoon was in charge of overall security and maneuver of the patrol while I communicated with higher and provided guidance to the PL. We had one of his organic scout sections and the sniper section. These were the two scout sections most capable for the long movements. I had my senior RTO with a TACSAT, and I had a manpack with long whip antenna to talk to squadron. We planned a route through thick swamps and streams, but instead of inserting at night like the year prior, we inserted several hours before darkness to give enough time to move through areas where we didn't anticipate enemy.

We planned to communicate with higher at pre-planned checkpoints so we could preserve batteries and for stealth. The C Troop executive officer (XO) acted as a liaison in the squadron TOC, keeping track of C Troop's movement while the squadron managed three other maneuver units. Squadron staff got nervous a few times when we didn't respond or communicate as often as expected.

The movement was slow and deliberate. When we reached one heavily used road, we waited for a safe time to cross. Before we reached our OP, we waited to cross another road near our planned objective rally point, using darkness to conceal our final movements. Using night vision and thermal sights, we located a substantial enemy base camp. Two Apache helicopters arrived on scene at nearly the same time we arrived, and we identified our position and the suspected enemy TOC. The Apaches confirmed there were many tents, generators, and vehicles. We later learned it was actually the opposing force's (4th Infantry Brigade Combat Team, 3rd Infantry Division's) brigade support area (BSA). I called for 155mm artillery on target, and then the Apache team fired rockets and conducted gun runs. Shortly thereafter, a platoon-sized reserve element approached the west side of the airfield across from us and attempted to find us by engaging the wood line, but they did not know our location. We again called the Apache team, which then destroyed four HMMWVs and one LMTV. The destruction of the BSA and mounted reserve platoon caused chaos in the enemy's rear, and more importantly, C Troop templated a movement corridor in which the 53rd IBCT could pass an entire infantry battalion behind the enemy's defense.

Our success throughout the exercise showed our squadron what a DRT is capable of. At the start of AT, we heard during a previous iteration, one of the other infantry battalions operated in a similar manner that 1-153rd Cavalry did. A major exception was that its C Troop was overrun within hours of the infantry battalion's assault. The DRT had acted too centralized with larger formations on the battlefield, which were quickly found by the advancing "enemy." One platoon, we were told, surrendered after being cut off from the troop. It was in this shadow (and that of the previous AT 2014 failure), that C Troop prepared for and conducted the exercise.

C Troop has a long way to go to be where I believe a DRT should be, but we had come a long way. The DRT commander must train his scouts to operate independently at far distances without readily accessible support and should above all-emphasize initiative. We achieved success by focusing on planning of the Soldier's load and radio communication. We prepared sections to be comfortable operating separately and with some autonomy, and with radio silence for pre-planned periods in order to preserve battery life and keep noise discipline. Most importantly, I put an emphasis on engaged and present leadership and encouraged Soldier initiative. Our success showed the squadron that a DRT is useful and relevant in brigade reconnaissance.

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What Free Men Can Do:

The Winter War, the Use of Delay, and Lessons for the 21st Century

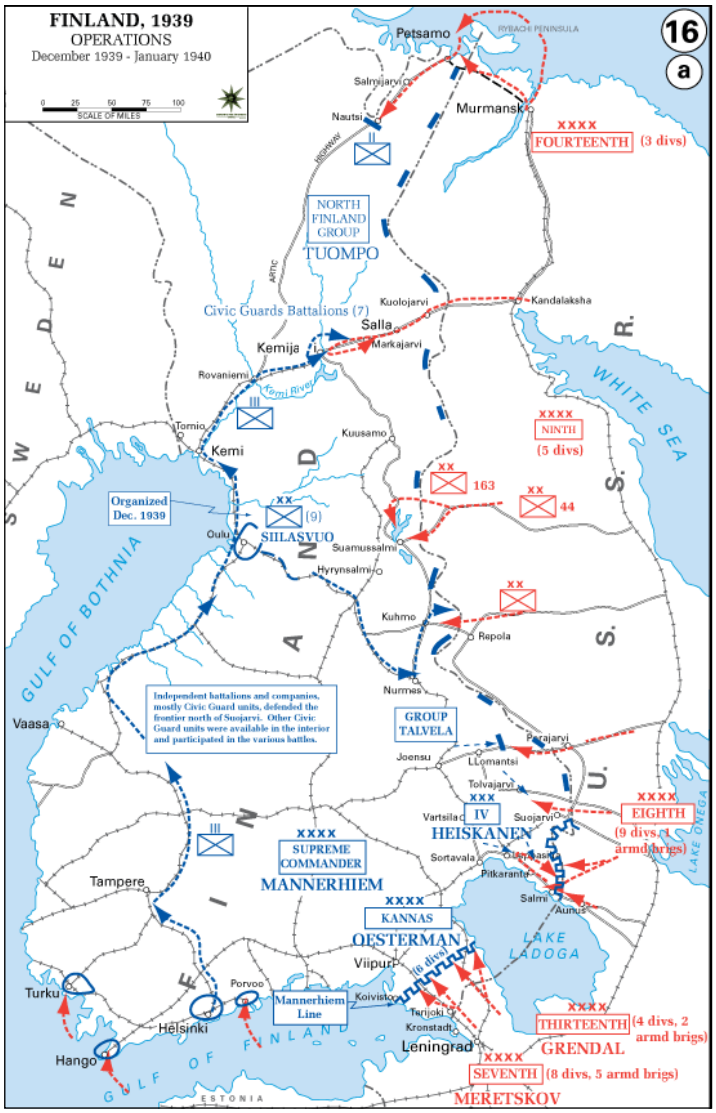
CPT Rick Chersicla

On the morning of 30 November 1939, six Soviet infantry divisions flooded over the Finnish border of the Karelian Isthmus following a two-hour artillery bombardment, initiating what would become known as the Winter War.[1] While only spanning 105 days, the fierce and inventive nature of the fighting would serve as a precursor to the impending global conflagration that would soon ignite Europe. Outnumbered 5 to 1, the Finnish armed forces executed a stubborn defense that traded space for time while inflicting massive casualties on the Soviet aggressors.[2] The Finnish political leadership needed time to seek Western assistance, or failing external support, retain a strong position from which to negotiate.[3] While Finland would eventually concede to harsh Russian demands, the time that was afforded to the diplomatic proceedings resulted in Finland retaining its independence. Thus, the Winter War can be viewed as an overall strategic victory for Finland despite the territorial concessions that were made.

Defensive operations rarely receive the study and attention that offensive operations typically do. While offensive operations tend to capture the imagination of readers with tales of bold maneuvers and spirited attacks, the defense has seldom received an enthusiastic audience, outside of tales of "heroic last stands." Though the Winter War in some ways does constitute the later, that is not why this under-studied conflict deserves more attention. As the United States increasingly refocuses on large unit, combined arms operations, military professionals who have spent the last decade and a half reading about Algeria and Malaya may be looking to places like Finland for historical examples from which to draw inspiration. Given the actions of Russia (and Russian proxy forces) in recent years, a review of the time when a much smaller nation inflicted massive casualties on the Russian Bear may be worth the study — for both the United States and our Baltic allies.

Background

Finland was, in a sense, a victim of geography. With their proximity to the "cradle of the revolution" — Leningrad — the Finns were likely destined for an invasion regardless of any political wrangling.[4] Known today as St. Petersburg, the city sits at the extreme Western frontier of Russian territory on the eastern periphery of the Karelian Isthmus. Of special concern to Soviet military planners was that at its closest point the distance from the Finnish border to Leningrad was only 32 kilometers.[5] Soviet security concerns extended to the sea as well, and their military planners eyed the Baltic islands — particularly the Aaland archipelago. The archipelago held strategic value, as control of the islands would result in naval



U.S. Military Academy Department of History

Map 1

dominance of shipping in the Gulf of Bothnia and the Gulf of Finland, particularly traffic into and out of Leningrad.[6] The Soviets were also keenly aware of the Scandinavian ore that transited the Gulf of Finland and the importance of controlling that sea lane. As Russia's relationship with Germany soured and Stalin's concerns over German aggression increased, the Russians' urge to act increased. The ore, the fact that the land bridge pointed at Leningrad, and the country's desire for naval supremacy — combined with the assumption that they could easily overwhelm their tiny neighbor — provided sufficient rationale for the Soviet invasion.[7]

Consisting of 400,000 men, the initial Soviet invasion force attacked at nine different points along the 1,600-kilometer Soviet-Finnish border.[8] As the Finnish commander, Field Marshal Carl Gustav Mannerheim, had anticipated, the main thrust came across the Karelian Isthmus.[9] The realistic Mannerheim, a combat-tested career soldier, embraced the harsh truth that Finland could not outright defeat Soviet aggression. Mannerheim noted in his memoirs that "for 20 years active delaying actions on the Karelian Isthmus had become almost a dogma in their training."[10] Thus, the overall strategy for Mannerheim and his forces became what modern doctrine would define as a delay.

The Use of the Delay

A form of retrograde operations, the delay is defined in modern U.S. Army doctrine as an operation in which a force under pressure "trades space for time by slowing the enemy's momentum and inflicting maximum damage on the enemy without, in principle, becoming decisively engaged."[11] The time bought with the lives of Finnish soldiers would enable their government to appeal to Western nations for assistance. The Finns hoped that the collective moral consciousness of the West would lead to an intervention and military assistance in the face of overwhelming odds. In the case that they did not receive external support (which they did not), Mannerheim acknowledged that his best option was to dig in his heels and make the price of invasion too high for even the Soviet leadership to accept. With enough of a delay, coupled with a fierce defense, the Finns' secondary plan was to resist strongly enough to wring a negotiated settlement out of the Russians.[12]

It is helpful to study the Finnish delaying tactics by analyzing the area of operations as two separate regions: the Mannerheim Line on the Karelian Isthmus and the region north of Lake Ladoga. The wooded terrain north of Lake Ladoga was the scene of devastating raids by Finnish ski-troopers that caught the world's imagination during the winter of 1939-40. While much attention has been paid to the novel, almost romantic fight of the ski troopers, the main effort was concentrated on the Karelian Isthmus. There, with its trenches and defensive works, the fighting bore more similarities to World War I than the combat experienced by most other World War II participants.

With the prescient understanding that any Soviet attack would be focused on an advance up the Karelian Isthmus, Mannerheim considered that stretch of land the key to Finnish defenses. In addition to the obvious proximity to Leningrad, Karelia was only lightly wooded and had several usable roads, two conditions which appeared to favor the mechanized Russian army.[13] However, the area was peppered with lakes and marshes, which served to canalize the avenues of approach in the region.[14] The topography of the isthmus, coupled with temporary barriers and strongpoints, gave the defenders a distinct advantage. Mannerheim referred to this 45-mile long strip of land as "our Thermopylae" for its geographic significance. The defenses that were built there became known as the Mannerheim Line.[15]

Fighting the Defense

Forward of the Mannerheim Line was the first element of the Finnish delaying strategy — the covering force. The covering force occupied a buffer zone between the Mannerheim Line and the frontier, which was between 12-30 miles deep at different points, and was the first Finnish contingent to make contact with the Russian invaders.[16] The 21,600-man strong covering force was mobilized on 6 October in order to defend the frontier while the field army was mobilized.[17] On 11 October, the government authorized the mobilization of the field army, and 300,000 men began to deploy along the frontier.[18] By 25 October, the rapid mobilization of the field army was complete, and the main task of the covering force had been fulfilled before the first Soviet forces crossed the border.[19] With its main duty accomplished, the covering force set to laying mines and booby traps as well as destroying civilian housing to deny the Soviets shelter in the buffer zone.[20]

The damage done to the Russians by booby traps set by the covering force was both physical and psychological. There were more traditional delaying tactics, such as the destruction of the railroad bridge at Terijoki (which stopped Russian mechanized movement for a crucial 10 hours), but the biggest impediment to Russian progress proved to be the small unit-level engagements and the fear they provoked. In addition to poisoned wells and sporadic sniper fire, the Russian soldiers were met by several other nasty surprises. Cheap, trip-wire operated pipe mines were hidden in snow banks and detonated at the abdominal level. Undetectable by electronic devices, wooden mines were buried that could blow the tread off of a tank, resulting in Soviet infantry slowly advancing in front of tanks to probe the ground with sticks.[21] Some mines were only partly filled with explosives before being submerged in lakes; retaining buoyancy for several days, the mines would eventually surface to blow up the ice and deny tank movement across a clear, even surface. Fear of these lake mines led to the Russians avoiding the lakes as thoroughfares and moving into the constricted countryside — just as the covering force intended.[22]

Field Marshal Mannerheim had intended for a longer initial delay with the "forward zone" strategy, but several miscommunications contributed to the withdrawal of Finnish troops in some sectors.[23] Once ground had been given up, his subordinate field commanders did not believe it was prudent to attempt to dislodge the Russians who had advanced to the recently vacated positions. Within hours of the invasion,

the lack of modern anti-tank weaponry made itself painfully apparent as a major Finnish failure in preparation. There were some episodes of panic amongst Finnish forces encountering tanks for the first time before they began using field expedient means to engage the advancing armor. During the fighting in the buffer zone, 80 tanks were destroyed by the covering forces wielding little more than satchel charges and bundles of stick grenades. With the field army already in position and the initial contact with Soviet forces resulting in some of the planned delays, the covering forces displaced to the relative safety of the main defensive line (MDL) and by 6 December were essentially integrated with the positions on the Mannerheim Line.[24]

Contemporary comparisons of the Mannerheim Line to France's heavily built and defended Maginot Line were exaggerated by both creative journalists and Soviet propagandists. Exaggerated reports of the durability of the line served to explain away the failures and slow progress of the initial Soviet invasion.[25] In fact, only two out of the 110-plus strongpoints of the Mannerheim Line — the Poppious Bunker and the "Million Dollar" Bunker — could compare to the complex, heavy strongpoints of the Maginot Line.[26] While those two bunkers were nearly forts (complete with camouflaged anti-tank gun positions, multiple strands of barbed wire, and mines), their quality was the exception not the rule for Finnish static defenses.[27]

The incorporation of the terrain with their manmade defenses proved to be of enormous importance to the Finnish defenders. In addition to barbed wire entanglements, landmines had been sown along the natural avenues of approach.[28] Amazingly, the primary anti-tank devices available to the Finnish army were naturally occurring — large, granite rocks had been sunk into the ground in rows to serve as obstacles.[29] Some of the lightly wooded areas were selectively cleared as a way to guide unsuspecting Russian forces into positions within deadly Finnish fields of fire and pre-plotted artillery targets.[30] Defensive positions, or strongpoints of various design, were located in supporting positions to overwatch the Finnish obstacles.

The Russians, specifically their tanks, faced layers of defense as they first approached the Mannerheim Line; after negotiating ditches, snow-covered swamps, and mud, they encountered the minefields and tank traps. After maneuvering in and around the first belt of obstacles, the invaders faced artillery fire that had accurately been pre-planned before the invasion. Beyond the killing fields of the artillery targets awaited the anti-tank rock obstacles, log obstacles, and camouflaged gun positions. It was only after these layers of defense that the tanks could break through to be inside Finnish lines, at which point they would be facing the almost fanatical bravery of satchel charge-wielding anti-tank teams.[31] The major challenge for the Russians remained the cracking of the strongpoints of the Mannerheim Line.

The composition of the strongpoints on the Mannerheim Line were varied in their construction. Some strongpoints were built of logs reinforced with a five-foot thick wall of sandbags.[32] Many strongpoints were simply a combination of log-roofed bunkers and earthworks.[33] Higher quality strongpoints were concrete pillboxes.[34] The strongpoints were generally connected by trenches of varying depth and quality, depending on the time available to the defenders and the hardness of the ground itself. It was from these generally rudimentary defenses that the Finns would emerge to face the crushing waves of Russian tanks and infantry.[35]

As the Finns learned of the Russian tendency to allow tanks to outpace infantry support, they could focus on the dismounted infantry behind the tanks. By positioning their guns behind the armored vehicles, the Finns could mow down Russian infantry with their automatic weapons.[36]

Part of the explanation for the Finnish ability to withstand the mechanized Russian onslaught for as long as they did was the Russians' lack of armor-infantry coordination. Due to an undeveloped doctrine of combined arms, the Russians' two strongest elements — tanks and waves of infantry — were not integrated into one effort. As the Finns learned of the Russian tendency to allow tanks to outpace infantry support, they could focus on the dismounted infantry behind the tanks. By positioning their guns behind the armored vehicles, the Finns could mow down Russian infantry with their automatic weapons.[36] Additionally, as the Russian tanks became separated from their infantry support, they became vulnerable. Isolated tanks could be engaged with satchel charges and other handheld explosives when approached from blind spots by brave Finnish anti-tank teams. While ammunition was in short supply, Finnish artillery was utilized to disrupt Russian attacks and separate attacking tank and infantry units.[37] The Finnish defenders maximized Russian weakness in coordination as well as their own obstacles and meager artillery assets. By separating the attacking tanks and infantry, the Finns could engage them in the ways that best suited their defense.

During the first offensive against the Mannerheim Line, the Russian units were badly decimated, losing three-fifths of their tanks.[38] However, even the most optimistic Finn knew that the Russians were not going to be stopped permanently at the Mannerheim Line. Units were put to work constructing both an intermediate and a final line of fortifications to give the isthmus defense some much-needed depth.[39] The Mannerheim Line withstood the Russian assault from 6 December 1939 until 15 February 1940 when Mannerheim ordered a general retirement to the Intermediate Line (with the exception of the defenses at Taipale, which became a salient on the northern edge of the isthmus).[40]

The Intermediate Line varied in strength by sector but was generally of lesser quality than the Mannerheim Line had

been.[41] While the center of the line was nearly as strong as the Mannerheim Line, the majority of the Intermediate Line was much weaker, typically characterized by some trenches, very few bunkers, and some barbed wire entanglements. One Finnish general disdainfully referred to the Intermediate Line as little more than a "colored line on a map."[42] While the Mannerheim Line had held for 78 days, the Intermediate Line would only delay the Russians for 12 days.[43]

The delay made possible by the Finnish army's pitched defensive fighting provided their political leaders with time to quietly pursue Western support while simultaneously holding out for the possibility for a negotiated settlement. However, by the time the Finns had retrograded to the final defensive line, Mannerheim knew the die was cast and that he had to commit everything to save Viipuri, Finland's second largest city.[44] Located on the Gulf of Finland, Viipuri was the southern anchor of the Rear (the third and final) Line.[45] The defenses in the vicinity of Viipuri were one of two areas on the Rear Line, including the area near Taipale on the opposite end of the peninsula, where the Finns integrated coastal guns into their defensive plans.[46] During the closing days of the Winter War, when the ice was strong enough to support Russian vehicles closing on Viipuri, the coastal guns of the Gulf provided some relief for the beleaguered defenders. The Finns used the coastal guns, which fired shells designed to puncture the armor of battleships, to smash the frozen waterways being used to move Russian forces, drowning invaders in company-sized formations.[47] The six-inch coast-defense rifles in the Taipale sector were employed like giant shotguns, firing "airbursts of shrapnel" on advancing Russian troops.[48] The Finns maximized every weapon in their arsenal, and improvised when necessary, to delay the Soviet invaders in Karelia and buy time for the diplomats.

Annihilation in the Wilderness

While the war on the Karelian Isthmus was characterized by trenches, strongpoints, and fighting reminiscent of the Western Front during the World War I, the fighting north of Lake Ladoga was mobile and fluid. It was in the center and northern limits of the frontier that the Finns would deftly employ ski troops and annihilate entire Soviet divisions in the wilderness. The region of Karelia north of Lake Ladoga, Karelia-Ladoga, was one of Mannerheim's major concerns. With two roads leading from the frontier to the interior within a frontage of between 130-160 kilometers, this region was the "back door" to the isthmus.[49] A Russian penetration in this region could sweep west and south, and attack the Mannerheim Line defenses from the rear (or bypass them all together). It was in these heavily wooded, almost primeval, forests that the Finns would again showcase their mastery of terrain.

The Russian attack north of Lake Ladoga, in the Ladoga-Karelia region, was not a surprise to the Finnish high command. During the 1930s, the Finnish army had anticipated the possibility and held several war games in the region.[50] The overall strategy focused on allowing the Russians to advance before attacking to pin them down, and then attacking exposed supply lines. While this was a logical and coherent plan, it became moot when the Russians attacked with nine rather than the expected three divisions on 30 November 1939. Mannerheim was forced to parcel out the reserve troops that he had been conserving to reinforce the Mannerheim Line to his commanders north of Lake Ladoga to meet the larger than anticipated Russian thrust.[51] It was in the thick woods north of Lake Ladoga that the Finns would experience their first true victories in the Winter War with their *motti* tactics.

The term *motti* was most likely coined by some of the woodsmen that made up the Finnish army.[52] In Finnish, *motti* refers to a bundle of logs or a pile of timber that is held in place by stakes but will later be cut into more conveniently sized lengths of firewood. In the context of the Winter War, the term came to describe the physically isolated Russian units that would be destroyed piecemeal by the Finns.[53] The Finns essentially utilized their knowledge of the terrain and their skill in navigating the winter landscape to dissect the larger Russian elements into small pockets that were more manageable for their small units. In these road-cutting operations, the Finns minimized the Russian advantages

Finland: A Country Study, Library of Congress

A Finnish machine-gun crew during the Winter War.

in firepower and manpower, inflicting a lopsided number of casualties while stopping the Russian advance.[54]

The terrain north of Lake Ladoga, unlike the Karelian Isthmus, had very few trafficable roads.[55] It was not the gently sloping, open approaches of the isthmus, but a heavily wooded region that made off-road movement nearly impossible. The mechanized Russian force had to travel along roads out of necessity, a situation that doomed them to the pain of the *motti* process. The typical operation was comprised of three main phases. First, the Finns would pinpoint the enemy and encircle the road-bound Soviet troops to prevent further movement and fix them in position. Quick attacks by ski-borne infantry were used to overwhelm previously identified weak points and isolate Russian units into multiple pockets. The final phase can best be described as annihilation with the Finns physically destroying the smaller or weaker pockets while the cold and hunger degraded the effectiveness of the larger *mottis*.[56] This tactic was utilized with devastating success by the Finns particularly well at the Kemijoki River, and on a larger scale at Suomussalmi and the Raate Road.[57]

For all their innovation and bravery, the Finns could not withstand the Russian onslaught indefinitely. On 12 March 1940, a peace agreement was signed in Moscow, and a ceasefire went into effect the next day at 1100 local time. While the Finns ceded over 25,000 kilometers of territory to the Soviets and would fight the Continuation War starting in June 1941, by the end of the World War II they retained their independence.[58] The delaying tactics of Mannerheim and the Finnish army temporarily checked the Soviet invasion and gave the Finns a much stronger position to negotiate from than had the invaders made it to Helsinki.

If Winter is Coming…

While there have been obvious advances in military technology and geopolitics since 1939, some concepts remain timeless. Elements of the strategy and tactics of the Winter War are still relevant given the current geopolitical situation. With the increasingly assertiveness of Russia since 2014, the Scandinavian and Baltic states have much to gain by studying the actions of the Finnish army during the Winter War. It would behoove the states on Russia's periphery to incorporate the tactical and operational lessons of the Finns' delaying operations into their current planning.

Beginning with the 2014 annexation of Crimea, modern Russia has reaffirmed itself as a threat to Eastern Europe.[59] Increasingly, the Russian military has both overtly and covertly provoked its neighbors. NATO fighter aircraft scrambled over 100 times during 2014 to intercept Russian aircraft. Increasing concerns over Russian intentions have contributed to the strengthening of relations between Finland and Sweden, including the formation of a joint naval task force.[60] A recent study conducted by the RAND Corporation detailed that in the Baltic region, Estonia, Lithuania, and Latvia are at particular risk for Russian incursions. The war games that the RAND study is based on indicated that NATO forces would not be able to even reach the Baltic states before Russian forces reached capital cities like Tallinn in Estonia and Riga in Latvia.[61]

The Baltic states should specifically take heed of the delaying tactics that served the Finns well during the Winter War. While technology has changed and the weather of the Winter War was a crucial variable that generally helped the Finnish cause (and cannot be artificially replicated by a defender), there remain several lessons to be learned. While none of the Baltic or Scandinavian states could withstand a Russian invasion on its own, by adopting some of the delaying tactics of the Winter War, the defenders could stand a chance in trading space for the time it takes for NATO forces to respond.

One of the challenges facing modern Baltic and Scandinavian states is similar to one that had faced the Finns in 1939 — the lack of armor or anti-tank weaponry.[62] While Finnish improvisation and the eventual acquisition of a limited number of Bofors guns helped the Finns address Soviet armor during the Winter War, it should be noted that their efforts were never enough to either destroy or evict the Soviet army.[63] To address this disparity, the RAND study recommends a forward positioning of NATO or U.S. armored brigade combat teams in the Baltic region as well as a return to the highly integrated ground and air doctrine recognized as "AirLand Battle" in the 1980s.[64] Regardless of a nearby NATO force, the Baltic states specifically should independently invest heavily in modern anti-armor weapons and medium-to-heavy armored forces of their own. Modern Baltic states can learn from the oversights of Finnish politicians during the 1930s, who did not invest in tanks — as tanks are not exclusively offensive weapons but can also be utilized in the defense. A key to any delaying action in the Baltics would be armored units employed as a mobile reserve, reinforcing units where they were needed but also serving in an anti-tank capacity in their own right.[65]

The Finnish mastery of terrain during the Winter War, both with their integration of natural terrain into their defenses, and their engagement techniques (for example, luring Russian tanks onto frozen lakes with fake roads before blasting holes in the ice) is a military concept to be emulated.[66] The Baltic states, however, would not have the same relative advantage in their hypothetical defense. Rather than the naturally canalizing Karelian Isthmus, the eastern areas of the Baltics favor the invader more than the defender. While there are still woodlands, the terrain is generally more open and has a significantly higher number of trafficable roads.[67] What they can do, however, is stress depth in their defensive plans. The construction of a series of heavily manned defensive lines would likely not be effective; without the natural terrain to tie into, any form of "Baltic Line" would likely lack the stopping power that the Mannerheim Line had. A series of separate positions, in depth, would better serve a delaying Baltic force. While some positions would have to be substantial in their own right, especially those astride major roadways or cities, depth would help the Baltic states attrit Russian forces as they drove westward.

Another lesson from the Winter War is the focused targeting of supply trains. While horses may no longer be employed

to move supplies, all modern militaries require a significant logistical "tail" to support their combat soldiers. While it is unlikely that the modern world will see ski-borne troops attacking road-bound columns again, *motti* tactics can still be adapted to fit a potential Russian incursion scenario. There are several modern military advances that could be factored into this process. A contemporary *motti* could feature retrograding, covering forces sowing improvised explosive devices (IEDs) along roads to either block key routes with disabled vehicles, or to detonate on key command and control vehicles. These same forces could mimic the physical isolation that the Finns imposed by launching electronic warfare (EW) attacks — by "jamming" voice and digital communications, the invaders would be isolated from their networks and their higher headquarters. Strikes on supplies being moved forward could be conducted remotely, by unmanned aerial vehicles (UAVs), with little risk to personnel. The spirit of Finnish *motti* tactics could live on if these tactics were implemented by the Baltic states.

It would be a significant investment for both the United States and NATO to position the troops necessary to deter Russian aggression in the Baltics. According to the RAND study, at least seven brigades (at least three of which being armored) would suffice as a deterrent.[68] Casting aside whether or not this estimate is accurate, no one can deny that the political process needed to approve and move such a large force is not a quick one. The best strategy for Baltic states is to immediately focus on expanding their capabilities while lobbying for an increased NATO presence. Both the Baltic and the Scandinavian states can draw inspiration for new strategies from the Finns performance during the 1939-40 Winter War. Mobile armored reserves, modern motti tactics, and a focus on depth could serve as short-term defensive solutions for the Baltic and Scandinavian forces in the face of increased Russian belligerency.

Notes

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[51] Sander, *The Hundred Day Winter War*, 79.
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[66] Clements, *Mannerheim*, 251.
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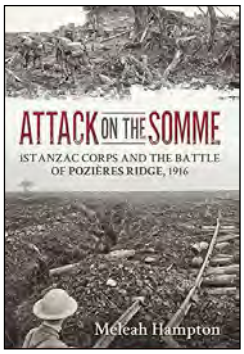
CPT Rick Chersicla is an active duty Infantry officer currently pursuing a master's degree in security studies at Georgetown University. As with all *Infantry* Magazine articles, the views expressed in this article are those of the author and do not reflect the official policy or position of the U.S. Army, Department of Defense, or the U.S. Government.

Book Reviews

Attack on the Somme: 1st Anzac Corps and the Battle of Pozieres Ridge, 1916

By Meleah Hampton
England: Helion & Company, Limited, 2016, 232 pages



Reviewed by Maj Timothy Heck, U.S. Marine Corps Reserve

In *Attack on the Somme*, Dr. Meleah Hampton, currently with the Military History Section of the Australian War Memorial (AWM), presents the Battle of the Somme for 1st Anzac Corps. Popular memory places Australia's primary contribution to the Great War at Gallipoli. Pozières Ridge, however, was even bloodier and their pointless sacrifices greater. Dr. Hampton analyzes the battles as both an individual campaign and as a learning experience for the Australians. Commanders and their actions, both Australian and British, are assessed using contemporary documents more than retrospective memoirs. These sources, often written on the line during the battle, allow Dr. Hampton to present the Australians' successes and failures at the brigade and division levels in near-real time. As a result, the reader gains an appreciation of the friction present during planning and execution for the 1st Anzac Corps.

On 23 July 1916, as part of the ongoing Somme Offensive, the 1st Australian Division launched an attack on the village of Pozières that differed from previous efforts to capture the town. The attack, while successful in capturing the town, was hampered from the beginning by a lack of coordination and planning at the army level. General Hubert Gough, commander of the newly-created Reserve Army, "called spur of the moment conferences without representation from [neighboring] Fourth Army to begin planning uncoordinated attacks within his sector." Gough's lack of coordination was emulated by his subordinates as the battle continued over the next six weeks. Furthermore, the capture of Pozières represented the high-water mark, but even its significance was limited by the failure to capture the German defensive lines to the east and northeast.

On 27 July 1916, the 2nd Australian Division replaced the 1st Australian Division in the trenches. The 2nd Australian Division's mission was to capture the German lines. Their approach to that task, however, was markedly different from that of their predecessor, especially with regards to training and fire support coordination. Dr. Hampton provides thoughtful analysis of the different planning styles. She dissects the application of artillery and its coordination with infantry objectives and finds it was uneven across commanders. Even the involvement of their higher headquarters' staff in the matter failed to rectify woefully inadequate fire support planning and execution. In the midst of this planning, German defensive fire severely limited Australian logistical preparations or reconnaissance opportunities. As a result, the hastily-planned and executed attack on 29 July was a failure.

Dr. Hampton places Australian failures within a wider context of British Expeditionary Force (BEF) operations. She ascribes some of the failures of August and September to the change in British campaign strategy. Previously, attacks in Reserve Army's area of operation were in support of attacks by Fourth Army. After the overall strategy changed on 30 July 1916, the attacks of Reserve Army were to be "an end in themselves." With this change in operational design, 1st Anzac Corps began planning and executing a series of actions that were largely in support of II Corps' 12th Division to their left instead of predominately supporting Fourth Army's main effort on the right. This change in role, while not tactically changing the nature of the battle, did change the campaign objective for 1st Anzac Corps and made its efforts increasingly in vain.

The bulk of Dr. Hampton's work focuses on the change of Anzac operations from one of disrupting attacks and economy-of-force operations to one of constant pressure. She relates division after division coming through the line launching nearly six weeks of operations that can best be summarized as displaying initiative but poor judgment. Reserve Army's desire to continuously attack the Germans led to ongoing attacks that were only loosely tied to Reserve Army's concept of operations and "attacks were being conducted on such a small-scale that had they not been so costly in lives they would be inconsequential." These uncoordinated attacks sapped Australian troop strength, supplies, and morale, all while being part of "the seduction of being able to report a 'success.'" The goal of being able to report any success led to the frittering away of combat power with limited correlation to larger army or even BEF goals. These piecemeal attacks frequently displayed a lack of coordination between infantry and artillery, inadequate coordination or liaison efforts between adjacent units, and progressively smaller objectives.

By late August, General William Birdwood, commander of 1st Anzac Corps, reduced assault objectives to a distance of 50-100 yards with, at best, limited artillery support on the objective itself. In 1916, "danger close"-type fire restrictions were 200 yards from friendly troops, resulting in Australian forces frequently having to abandon their frontline trenches during pre-assault bombardments. This, in turn, forced them to retake ground they previously held. Furthermore, even when they could stay in their trenches prior to an attack, Anzac troops frequently received short rounds from their own fire, with minimal ability to find protection or adjust those short fires onto the Germans. As a result of this constant grinding

loss for minimal ground gained, Dr. Hampton damningly states, "there had simply been no purpose in 1st Anzac Corps' operations. There had not been for several weeks."

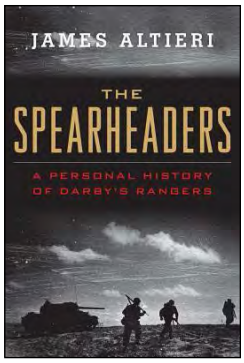
Dr. Hampton provides thoughtful analysis of the different planning and training methods used by the Australian division and brigade commanders. To modern American readers accustomed to a prescribed pre-deployment training cycle, the individualized approach available to Australian commanders nearly two years into the war is a fascinating revelation of how armies prepared or failed to prepare to fight. This uneven approach extended beyond the individual soldier to the staff level as well.

She also examines the learning process of commanders and staffs during the battle. While she finds numerous examples of lessons learned-type documents in the archives, unfortunately for the men of 1st Anzac Corps, the disseminated lessons learned failed to lead to "no practical examples which indicated that what was being written about was actually being absorbed and implemented." As a result, while the information and analysis might have been available to commanders, its incorporation into the planning cycle or in the attacks themselves was absent, a negligence at the command and staff level with costly results.

Attack on the Somme is an eminently readable counterpoint to parochial histories that place the Australian contribution to the BEF as a uniquely Australian venture divorced from a larger British, or even coalition, effort during the Somme Campaign. Dr. Hampton presents an important critical campaign analysis of one part of the larger Somme Offensive that sheds light on the months the Anzacs fought an increasingly futile sideshow.

The Spearheaders: A Personal History of Darby's Rangers

By James Altieri
Annapolis, MD: Naval Institute Press, 2014,
334 pages



Reviewed by LTC (Retired) Rick Baillergeon

For readers of military history, the reprinting of a book is almost always a good thing. It places a title back on the market which was normally last seen decades ago. In most cases, the reprint has been supplemented with some nice extras which distinguish it from the original. The best aspect of a reprint is that it exposes itself to a potentially new group of readers. One recent reprint which should unquestionably be experienced by a new readership is James Altieri's superb volume, *The Spearheaders: A Personal History of Darby's Rangers* (first published in 1960).

Before addressing the book itself, it is important to have a succinct background on the author's incredible World War II record. Altieri joined the Army in late 1941 and was subsequently sent to Northern Ireland where he served as an artillerymen with the 1st Armored Division. While stationed there, he was told that volunteers were wanted to form up a new unit structured much like the British Commandos. Altieri completed the demanding training program and became a Ranger in July 1942. For the next two years (plus), he served with the 1st and 4th Ranger Battalions in combat missions executed in the Mediterranean Theater of Operations. Along the way, he earned battlefield promotions to sergeant, first sergeant, and first lieutenant; he also was appointed company commander and received two Bronze Stars and Purple Hearts.

Spearheaders enables Altieri to achieve three things. First, the book provides him a forum to address events of World War II that clearly weighed on him through the rest of his life. He candidly and emotionally discusses these events. These include his first firefight, conducting hand-to-hand combat with his enemy, taking the life of another man, and seeing his fellow Rangers injured or killed on the battlefield. He shares the wide spectrum of emotions and feelings that combat brings to every Soldier.

Second, *Spearheaders* serves as an excellent concise history of the formation of the Rangers and their operations in the Mediterranean Theater. Particularly interesting for readers will be the author's reflection on the training regimen he and the others went through prior to their deployment in theater. This training was executed by the British Commandos and to say it was demanding is clearly an understatement. Altieri discusses this training as only a Soldier taking part in it can.

Finally, Altieri utilizes the book to pay tribute to a Ranger he greatly respected — his commander, William O. Darby. By the end of the book, readers will clearly understand why Darby was so admired and loved by his men and why they were called "Darby's Rangers." Throughout the book, Altieri places numerous vignettes and accounts of displays of Darby's leadership qualities and technical and tactical competence. The most poignant portion of Altieri's praise comes after he reflects on his feelings when he learns that Darby is killed in combat on 16 April 1945.

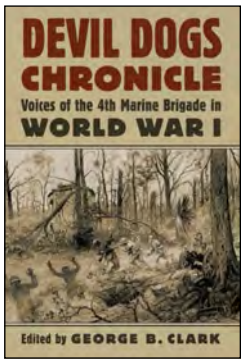
The clear strength of *Spearheaders* is Altieri's writing ability. He expresses himself in a conversational tone that makes the book an incredibly easy read. It is extremely difficult to put down once you begin. Consequently, you won't find any footnotes, endnotes, or long bibliography in his volume. From front to back these are Altieri's words and thoughts.

Spearheaders is every bit as valuable today as it was when it was first released more than 50 years ago. It is a volume which highlights the development and contributions of an elite fighting force. More importantly, it honors those Rangers who were part of that force which achieved so much in World War II. A new group of readers have the unique opportunity to read a book that is clearly a classic.

Devil Dogs Chronicle: Voices of the 4th Marine Brigade in World War I

Edited by George B. Clark
Lawrence, KS: University of Kansas Press, 2013, 424 pages

Reviewed by Maj Timothy Heck, U.S. Marine Corps Reserve



The transition of the Marine Corps from its 19th century role as a naval landing force and auxiliary ship crew to a viable second land army occurred in a few short months from 1917 to 1918. In the wheat fields surrounding Belleau Wood in northern France, that change occurred as the Marines of the 4th Marine Brigade, part of U.S. Army's 2nd Division, fought the entrenched German army. However, that battle, now part of Marine Corps lore, almost never occurred due to inter-service rivalry. "The U.S. Army initially saw neither reason nor need to include the Marines in the continental fighting," wrote George B. Clark. It was only after the Commandant of the Marine Corps persuaded the Secretary of War that the Marines could solve the manpower crisis brought about by the war that they were included. From there, the Marine Corps never looked back.

Clark has compiled and edited *Devil Dogs Chronicle* almost exclusively from primary source material written during or shortly after World War I. It is a thematically and chronologically organized work drawing that uses a significant number of unpublished or limited edition works by the Marines and Soldiers of the 4th Marine Expeditionary Brigade. These hard-to-find sources are often contemporary to the conflict, offering an immediacy to the account. Furthermore, Clark's selection of primary source material reduces the influence of hindsight on memory.

The book starts with initial recruitment, selection, and training of the Marines. While much has changed in the intervening century, modern-day Marines will find their experiences similar to that of their predecessors, including the emphasis on marksmanship. Today, as then, the pride in earning the Eagle, Globe, and Anchor remains a symbolic and emotion-laden event that marks the transition from civilian to Marine. Marines like Pvt Levi Hemrick and Lt James McBrayer Sellers express the deep pride they felt in the exhausting work of earning the title of Marine and preparing for combat in France.

Clark's chapter on combat at Belleau Wood, where the Marines assisted in halting the German Spring Offensive of 1918, is his strongest. Clark's sources describe hidden German machine-gun nests and snipers, and of capturing one position only to be attacked from an unseen position on their flank. In one day, more Marines fell at Belleau Wood than had died in the history of the Marine Corps to date. Further chapters on combat at St.-Mihiel, Soissons, Blanc Mont, and the Meuse-Argonne take Marines from the critical summer of 1918 to the Armistice. These later battles proved Belleau Wood was far from an isolated example of Marine bravery and skill.

Short chapters on occupation duty in Germany and the return home complete the book. Throughout, Clark allows his sources to express the chaos and savagery they experienced, as well as the lighter moments, in their own words. By weaving various authors throughout the text, he creates a holistic picture of the Marine experience in France from induction through demobilization.

Devil Dogs Chronicle puts the Marine transition from an auxiliary naval force to a second land army in the words of its participants. In doing so, Clark has given voice to the men who gave rise to the modern day Marine Corps. While the story is about the 4th Marine Brigade, the experiences of the participants in joint warfare (the brigade was commanded by an Army brigadier general and had platoons led by Army officers), frontline combat, the emotional burdens of command, the fog of war, and shell shock have applicability to the combat arms Soldier outside of the book's historical context. Clark provides a view of Americans in combat in World War I that buttresses official and macro-level histories with the contemporary impressions and reflections of its participants.

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