ARMOR

Operationalizing Cross-Domain Maneuver
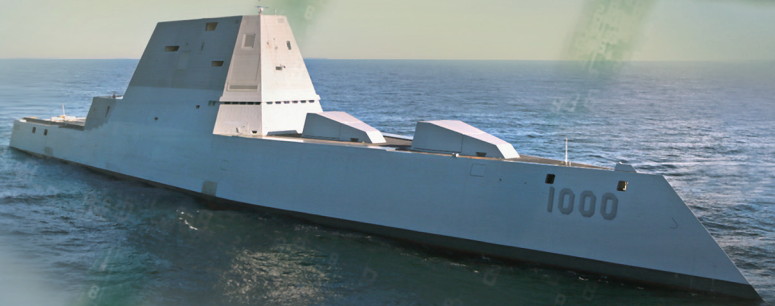
ARMOR

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Features

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CHIEF OF ARMOR'S HATCH

BG David Lesperance
Chief of Armor/Commandant
U.S. Army Armor School

Strengthening the Branch's Core

It's an honor to assume responsibilities as 51st Chief of Armor. I want to thank BG John Kolasheski for his leadership, drive and dedication to the Armor Branch and school for the past year.

Reconnaissance and security are at the very core of our branch, reaching back to our foundation as Cavalry. Armor and Cavalry leaders and Soldiers are renowned for their grasp of the combined-arms fight and are well trained to integrate all warfighting functions into sound execution of reconnaissance and security fundamentals, enabling combined-arms maneuver. Armored brigade combat teams (ABCTs) are the center of gravity for the Armor Branch. ABCTs are currently in high demand, with continuous deployments in support of regionally aligned force operations in Korea, Europe and the Middle East. Tankers and scouts are masters of the combined-arms fight across all BCT types – we remain the combat arm of decision!

The Armor School will continue to build and train lethal Soldiers and leaders as we prepare the growing Armor force for the rapidly changing operational environment. For the past 241 years, the basis of that profession has been the ability to decisively maneuver against and deliver precise lethal direct fires on the enemy. Well-trained combined-arms battalions and Cavalry squadrons deliver shock effect and lethality and are decisive.

We will continue to engage with the operating force through unit and combat-training center (CTC) visits, cavalry and armored warfighting forums, division-level cavalry symposiums, Gainey and Sullivan Cups, *ARMOR* magazine, *Thunderbolt Blast* and through our Facebook page. I want to highlight a key organization that manages outreach among the Maneuver Center of Excellence (MCoE), Armor School and operating force: the U.S. Army Training and Doctrine Command's capability manager for the ABCT (TCM-ABCT). The TCM-ABCT director, COL Andy Boston, and his team spend a considerable amount of time on the road at CTCs and division umbrella weeks to engage and interact with units to capture current observations.

The Armor School is leading an MCoE effort to analyze the current state of combat platform lethality in all three BCT types. This effort will look across the Army's doctrine, organization, training programs, materiel, leadership and education programs and policy spectrum to assess, then develop, a combat-platform lethality strategy enabling a more lethal maneuver force.

Within our leader development and functional training courses, the Armor School is ensuring that the leaders we send to the force are educated, trained and ready to lead on day one. This includes ensuring our lieutenants are trained to lead tank and scout platoons; our captains are able to command tank companies and cavalry troops, and lead battalion, squadron and BCT staffs; and noncommissioned officers are experts on their combat platforms and prepared to lead in Armor and Cavalry formations.

In support of MCoE's efforts to modernize the current force, the Armor School is working closely with MCoE's Capabilities Development and Integration Directorate to develop the doctrine and capabilities of the future maneuver force that enable our Armor and Cavalry formations to dominate and win across the range of military operations.

It's an exciting time to be a member of the Armor and Cavalry team, and I am humbled to serve as the 51st Chief of Armor. We look forward to your attendance at the Maneuver Warfighter Conference Sept. 12-15, 2017. Please keep in touch.

ACRONYM QUICK-SCAN

ABCT – armored brigade combat team
CTC – combat-training center
MCoE – Maneuver Center of Excellence
TCM-ABCT – (U.S. Army) Training and Doctrine Command capability manager for the armored brigade combat team

GUNNER'S SEAT

CSM Alan K. Hummel
Command Sergeant Major
U.S. Army Armor School

Shortages in the Branch

I would like to use this setting to bid farewell to promotable BG John Kolasheski and his family as they depart Fort Benning, GA. I would also like to thank them for their unwavering support and incredible contributions to the Armor family. BG Kolasheski's devotion and expertise allowed us as the Armor proponent to make changes and decisions that will influence the Armor Branch for the foreseeable future. We continue to wish success to the Kolasheskis as promotable BG Kolasheski progresses to his next assignment as the U.S. Army Forces Command's deputy chief of staff, G-3/5/7.

I would like to focus this edition of Gunner's Seat on the shortage of sergeants the Armor Branch is currently facing. As of July 17, the 19D military-occupation specialty is short by 115, and the 19K MOS is short 299 sergeants. While those numbers don't seem very dramatic, there is a major issue seen from them: while we are short sergeants, 884 19D and 340 19K specialists were eligible to attend the board in the primary zone. So the main issue becomes we are not getting Soldiers ready to attend the board.

As is always the case, there exists an ever-growing need to grow leaders and noncommissioned officers from within our own ranks; this is what we do for sergeants and staff sergeants. Several steps can be taken to ensure that our junior Soldiers are prepared to be sent to the board when the appropriate time comes, and all that these actions require is some careful thought and attention from you as their leader. These simple tasks include ensuring your Soldiers complete structured self-development on-line courses well before their board appearance and ensuring you are sending them to the Basic Leader Course as soon as they are eligible and able to attend. Finally, leaders should be training their Soldiers to excel at the promotion board by making them rehearse and by conducting mock boards to simulate the stressful environment they will be undergoing.

In closing, I would like to welcome the 51st Chief of Armor, BG David Lesperance, and his family. BG Lesperance joins us after departing Fort Bragg, NC, as the assistant commanding general (support) for 1st Special Forces Command. I look forward to working with BG Lesperance as we continue to guide and develop the future Soldiers and leaders of the Armor Branch.

The Lethality Imperative: Training Cavalry Squadrons to Fight for Information

by LTC Scott Pence

The voice came from the center speaker box in the tactical-operations center (TOC): "Contact, four enemy personnel, west, out."

My furthest scout element had made contact and compromised their position. I knew what would come next. The opposing force (opfor) at Joint Readiness Training Center (JRTC) is ruthless – they know every inch of the training area, and I knew we had been fortunate for too long.

After the joint forcible entry (JFE), the dismounted scout team had advanced off the roads and through swamps, succeeding in establishing an observation post (OP) overlooking a critical intersection. Up to this point, this scout team was the single most successful team in the brigade. Now, it seemed, the opfor had engaged them in a movement-to-contact.

My proactive command sergeant major leaned toward the flap of the TOC tent. In an instant, he would lead the recovery and casualty-evacuation effort with the medics outside.

I did not expect the next report: "Engaged and destroyed four military-aged males. Continuing mission."

Cavalry squadrons must be lethal. After many counterinsurgency deployments in which brigade combat teams (BCTs) employed cavalry squadrons as "smaller infantry battalions," today's cavalry squadrons are returning to their designated role as masters of reconnaissance and security (R&S). We see improvements in reconnaissance tactics at each combat-training center (CTC) rotation; after-action reports no longer bemoan the lack of scout field-craft and now focus on advanced collection management and priority information requirement (PIR) refinement.

An idyllic scout mission includes undetected movement to an OP, occupation, timely and accurate reports that satisfy the commander's PIR, and subsequent destruction of the enemy by indirect fire. The scouts, of course, inflict this humiliation on the enemy without ever being detected or using their individual weapons. This might be the case in some missions, especially at CTCs, but in our warfighting history we have often returned to the art of fighting for information.

COL Curtis Taylor, commander of 1st Stryker BCT, 4th Infantry Division, the R&S BCT, addressed this phenomenon in his seminal 2005 article, "Trading the Saber for Stealth."[1] He wrote that CTC trends often create a false security in the ability of stealthy light reconnaissance to slowly and deliberately achieve reconnaissance objectives. The 1987 and 1996 Goldsmith Studies from RAND Corporation concluded that the opfor at the National Training Center (NTC) were able to effectively use stealth to win the reconnaissance fight against rotational units. The opfor used light humvees to quietly and slowly occupy dismounted observation points, gain visual contact and harass the rotational unit with indirect fires.

Taylor contrasted this with historical examples from both 1943 North Africa and 2003 Iraq to prove that warfare requires high tempo and thus rarely lends the commander the luxury of time. He demonstrated that higher tempo brought light-reconnaissance forces into an unacceptable level of risk and made movement-to-contact the primary form of reconnaissance.

"The greatest lesson of the North Africa campaign was that direct combat was virtually unavoidable if a reconnaissance force was to be effective at all," Taylor wrote.

Taylor linked high tempo with a heightened need for rapid and forceful reconnaissance.

Multi-domain battle

The very nature of multi-domain operations implies that the tempo will be on overdrive. In the best conditions, national assets and unmanned aerial systems (UAS) provide copious data on the operational environment (OE) prior to a JFE (airborne operation). In theory, the operational commander should have full situational awareness of conditions on the ground before delivery of paratroopers. In the worst conditions, however, the enemy will deny the U.S. joint force's asymmetric advantages from overpowering his defenses through electronic and cyberattacks that jam, spoof or exploit mission-command systems.

The 2014 Army Operating Concept noted that "Army forces will have to support joint operations through reconnaissance, offensive operations or raids to destroy land-based enemy space and cyberspace capabilities."[2] It is in this challenging environment that the role of the cavalry squadron in an airborne infantry BCT (IBCT) thrives in support of the multi-domain concept.

In a reversal of the relationship we have operated under for years, U.S. Army Training and Doctrine Command's (TRADOC) recent whitepaper on multi-domain warfare suggests that U.S. Army forces must be prepared to conduct operations that set conditions for the employment of Air Force and/or naval operations.[3] Vertical-envelopment capacity by U.S. Army airborne IBCTs offer a method to defeat units that prevent joint forces (Integrated Air Defense System, anti-access and aerial denial, mission-command nodes) without exposing friendly lines of communication to the effects of the enemy's protected considerable artillery assets.

In a JFE, each element of the IBCT needs to be able to fight and win decisively without support from enablers. Fires from the field-artillery (FA) battalion are limited to only a few suppression missions due the limited amount of ammunition dropped; attack aviation and close air support are unlikely to be available due to the nature of JFEs; and, in many environments, we can expect our mission-command systems to be monitored, jammed or spoofed. Therefore, especially in those vulnerable first few hours after the airborne operation, the cavalry squadron must use its organic direct and indirect fires to overpower the select enemy forces it encounters. This requires careful intelligence preparation of the battlefield before the mission to mitigate the risk of encirclement and defeat in detail. And once

the mission begins, operations will resemble the battles of our forefathers more than those of the recent past.

For offensive reconnaissance operations, we have much to learn from our World War II veterans. At 82nd Airborne Division's All-American Week in May, retired LTC Bill Collier – a reconnaissance scout in World War II in 106th Cavalry Squadron – offered: "We were taught in the schoolhouse to sneak and
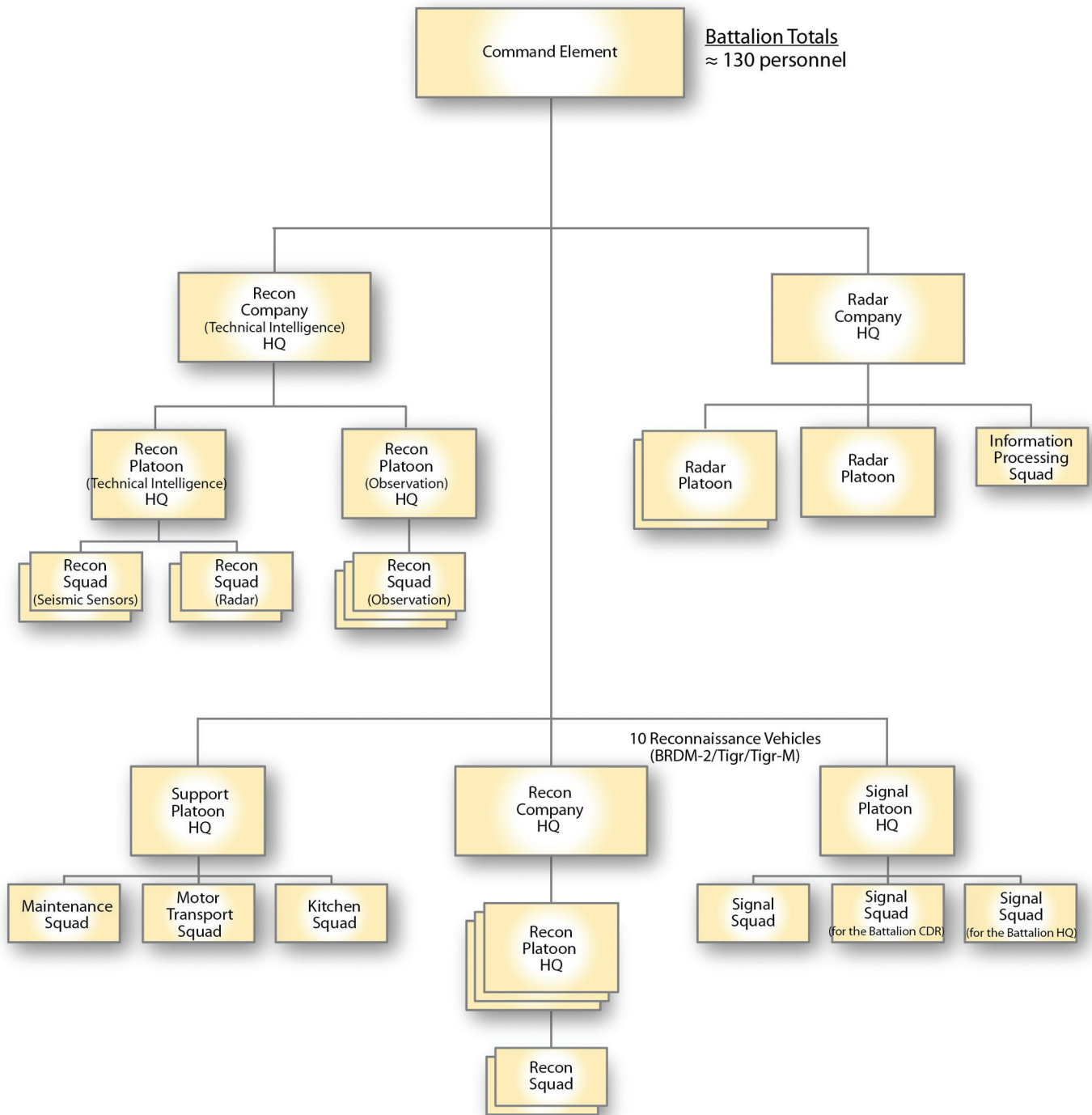

Figure 1. The Russian reconnaissance battalion. *(from **The Russian Way of War:** Force Structure, Tactics and Modernization of the **Russian Ground Forces** by Dr. Lester W. Grau and retired LTC Charles K. Bartles)*

peak, but in combat we were fighting for information."[4]

Collier executed in Normandy what would today be described as rapid and forceful reconnaissance to detect the enemy and enable destruction by heavier units behind him. "You get involved, and you soon learn how much they have. You learn how [much] they will fight for a roadblock," he said.[5]

When engaged against a determined near-peer adversary, scouts fight for information. If a reconnaissance objective is of value to us, it is of value to the enemy as well, and he will fight for it. These might be the enemy's reconnaissance units; however, they are more likely to be enemy infantry elements.

Earlier this year the author of *The Bear Went Over the Mountain*, Dr. Lester Grau, and retired LTC Charles Bartles published *The Russian Way of War* out of the Foreign Military Studies Office at Fort Leavenworth, KS. The authors make clear that, all other things being equal, a BCT cavalry squadron vs. a Russian squadron has three times the amount of trained reconnaissance professionals. Not every adversary will follow Russian doctrine, but this organization is instructive as a model.

Figure 1 shows that Russian reconnaissance battalions are comprised of just one company of ground-reconnaissance professionals; the other companies are radar and technical collection.[6]

Grau and Bartles note: "At the battalion level, most maneuver units do not have dedicated reconnaissance assets; regular units from the battalion are assigned for this purpose on an *ad hoc* basis."[7] Regular units, not scout units, are trained to engage and destroy the first enemy forces they encounter. Therefore each scout team should be prepared to react-to-contact and continue to reconnaissance objectives. This is a method with which Israeli scouts of the 1973 Arab-Israeli War (Yom Kippur War) would be familiar.

During the Yom Kippur War, Israeli reconnaissance forces detected a gap in the Egyptian defenses along the Sinai Peninsula.[8] On Dec. 9, 1973, the division commander, GEN Ariel Sharon, directed his 87th Reconnaissance Squadron to move forward and probe the edges of the Egyptian front. That night, the 87th found a sizable gap between the Egyptian 2nd and 3rd Armies; the Egyptians had left a mile-long stretch unprotected.[9] Sharon would use this gap days later to execute his division counterattack.

Sharon's fellow division commander to his north, GEN Avraham Adan, wrote in his memoirs, "No columns of dust were raised due to the sand dunes. Thus unnoticed by the enemy, the unit discovered the open 'seam' between the Egyptian Second and Third Armies."[10] However, Adan was wrong. He assumed the scouts advanced stealthily and undetected all the way to the Suez Canal. In actuality, they were in a running gunfight with Egyptian forces.

A firsthand account of the battle from the Israeli scouts recalled: "We moved toward the canal, keeping up a constant shooting match with the Egyptian positions to our north. This way we pinpointed their southernmost positions."[11]

The Israeli 87th Reconnaissance Battalion fought for information. The scouts succeeded in moving all the way to the Suez Canal and then returned and gave a full report. Later, the squadron led Sharon's division through the gap during his counterattack.

The addition of mobile protected firepower (MPF) to the IBCT enhances its ability to fight for information. The 5-73 Cavalry Squadron – which is currently responsible for developing tactics, techniques and procedures (TTP) for employing MPF organic to an IBCT – has one platoon of LAV-25s to employ in support of infantry units as well as to employ with reconnaissance units. Recent experience with the LAV-25 Excursion allows our squadron to test new techniques for employing heavier firepower with scouts to fight for information.

At Normandy, Collier's cavalry troops were organized with one jeep platoon, one anti-tank platoon and one tank platoon.[12] Our current organization is enough to execute aggressive reconnaissance missions against lightly armored enemy forces. The dismounted reconnaissance troop, in mutual supporting range of the mounted troops, can identify enemy forces and allow the mounted troops' uparmored humvees to destroy the lead elements with .50 Cal, MK19, Improved Target-Acquisition System or organic 120mm mortars. With MPF platforms, the IBCT's cavalry squadron can fight for information through detection and destruction of enemy forces in the OE.

Figure 2. 5-73 Cavalry LAV-25 platoon leader 1LT Christian McCollum engages targets at the March 2017 platoon LFX. 5-73 Cavalry supports the LAV-25 Excursion to test TTPs for MPF platforms in support of airborne IBCT operations. *(U.S. Army photo by SPC Zackary Nixon)*

Training scouts for lethality

"Conduct a guard" is a mission-essential task (MET) for the cavalry squadron. Field Manual (FM) 3-96 notes that "guard is a security task to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body."[13] To reach training proficiency in the guard task, a squadron must be able to engage and destroy targets that threaten the protected force.

FM 3-96 continues: "A guard force differs from a screen in that it routinely engages enemy forces with direct and indirect fires." In an airborne IBCT, JFE conditions allow limited indirect-fires capabilities in the hours following the airborne insertion. Only select gun tubes can be air-dropped, and there are limits on the amounts of ammunition. During this period of maximum vulnerability, the cavalry squadron is simultaneously without its most lethal partner, the IBCT FA battalion. This

reality is another reason why airborne cavalry squadrons must be trained and ready to engage threats with their organic weapons.

Until a higher headquarters designates an area of operations (AO), cavalry squadrons must train for all environments and specialize in those that are most dangerous. Figures 3-5 show concepts, mounted and dismounted, that one cavalry squadron executed to validate platoon leaders and troop commanders in their ability to manage lethality across a broad spectrum of conditions. These examples might be a good start point or provide an idea for integration into existing plans. As in all training, the concepts are not perfect but bring individuals, units and leaders closer to combat readiness.

The 5-73rd Cavalry Squadron executed an ambitious platoon live-fire (LFX) concept in March 2017 at Fort Bragg, NC. The situation took the platoon from a deliberate link-up with a BCT infantry battalion's lead elements to react to improvised explosive devices (IEDs), supported by BCT engineers.

The platoon reacted to contact with direct fire on enemy forces overwatching the IED site and then exfiltrated to a covered and concealed site to call their nine-line medical-evacuation (medevac) report and coordinate for evacuation.

Then the platoon received intelligence on an anti-tank team in a combat security outpost, which required scouts to dismount and call for fire (CFF) from the FA battery's M777s. Once destroyed, the platoon was hit by a non-persistent chemical attack with live CS gas and engaged several targets "under mask."

The platoon consolidated, reorganized and downgraded its mission-oriented protective posture level only to receive a report from higher headquarters about an enemy air-defense-artillery (ADA) site nearby. The platoon leader organized his sections to conduct an aggressive hasty mounted attack by bounds to destroy enemy ADA site and security.

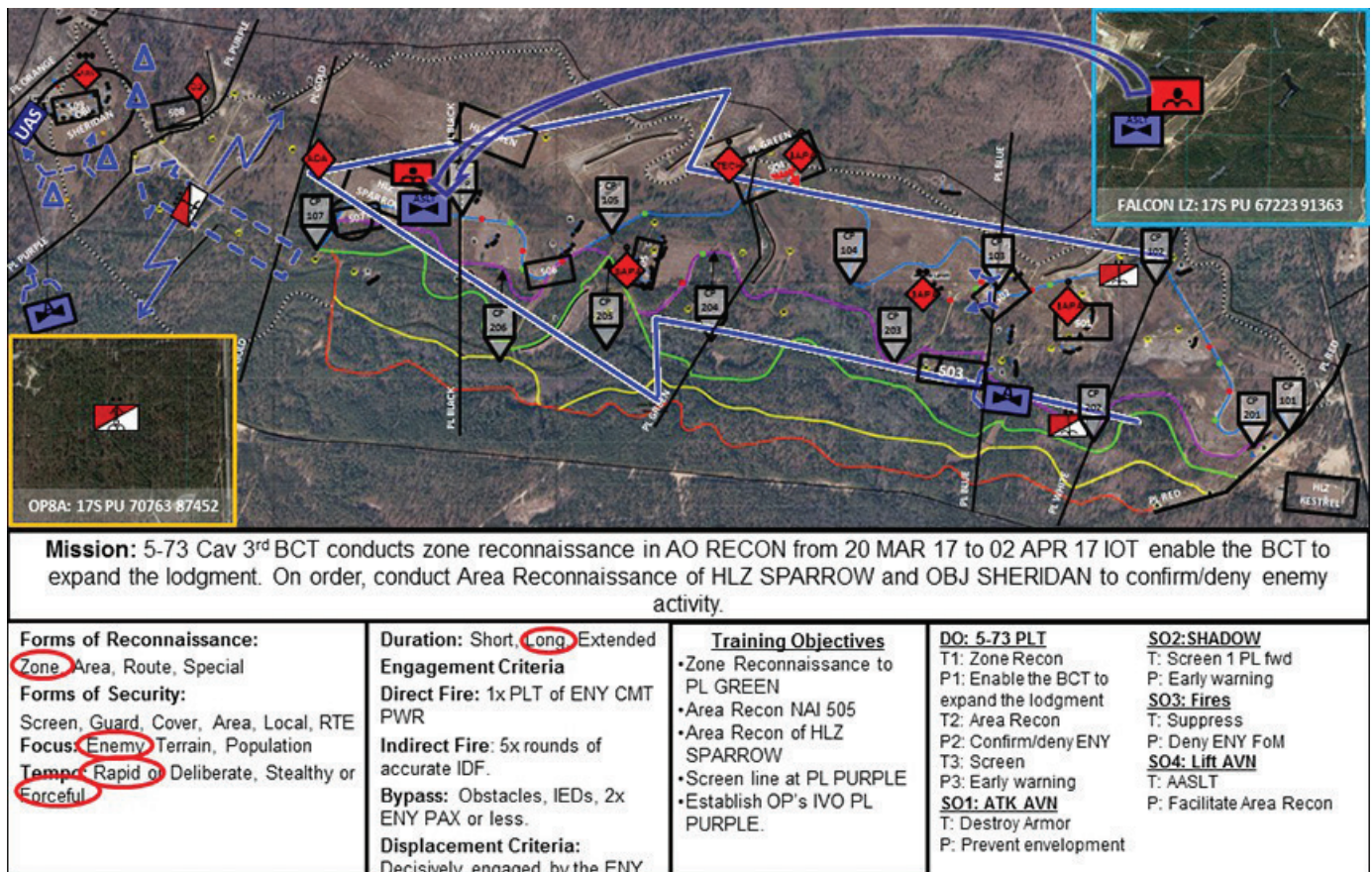Finally, the platoon established OPs and executed air-ground operations

Figure 3. 5-73 Cavalry's mounted-platoon LFX concept.

(AGO) with live Apache gunships. They called for fire with live troop mortars. Then multiple motorized targets appeared, which triggered displacement criteria. The dismounted OPs bounded back in coordination with mounted platforms that provided suppressive fires to support their displacement.

The 5-73 Cavalry's dismounted platoon LFX concept validated skills uniquely suited to the dismounted reconnaissance troop. The platoon entered the AO via air assault. After the platoon moved off the landing zone (LZ), they reacted to contact from a force that fell within its engagement criteria (a two-man team). The platoon maneuvered to destroy the enemy security outpost and then executed a nine-line medevac and secured the flight. From there, the dismounted platoon moved through concealed routes and reacted to a non-persistent chemical attack with live CS gas. The culminating event was three short-duration OPs oriented on a named area of interest (NAI). The scouts executed AGO with live Apache gunships, called for fire with the BCT's M777 FA battery and broke contact under fire once displacement criteria was met.

This concept, though physically and mentally grueling for the platoon leader, provided a crucible to evaluate the platoon and platoon leader as a fighting element. It also validated the platoon for operations in which they would be required to destroy air-defense radars to allow attack aviation to enter the area. Each platoon leader finished the exercise (after a few were given more opportunities) capable of employing our habitual enablers (engineers, low-level voice intercept (LLVI), electronic warfare, FA, mortars and attack aviation) as well as be able to destroy critical high-value targets with direct fires to enable joint fires and beyond.

Troop combined-arms maneuver LFX

To reach "trained" readiness status, the new Objective T standards require cavalry squadrons in all BCTs to complete squadron live fires. This mandate created an urgency to design and execute a troop combined-arms maneuver LFX (CAMLFX) at Fort Bragg prior to
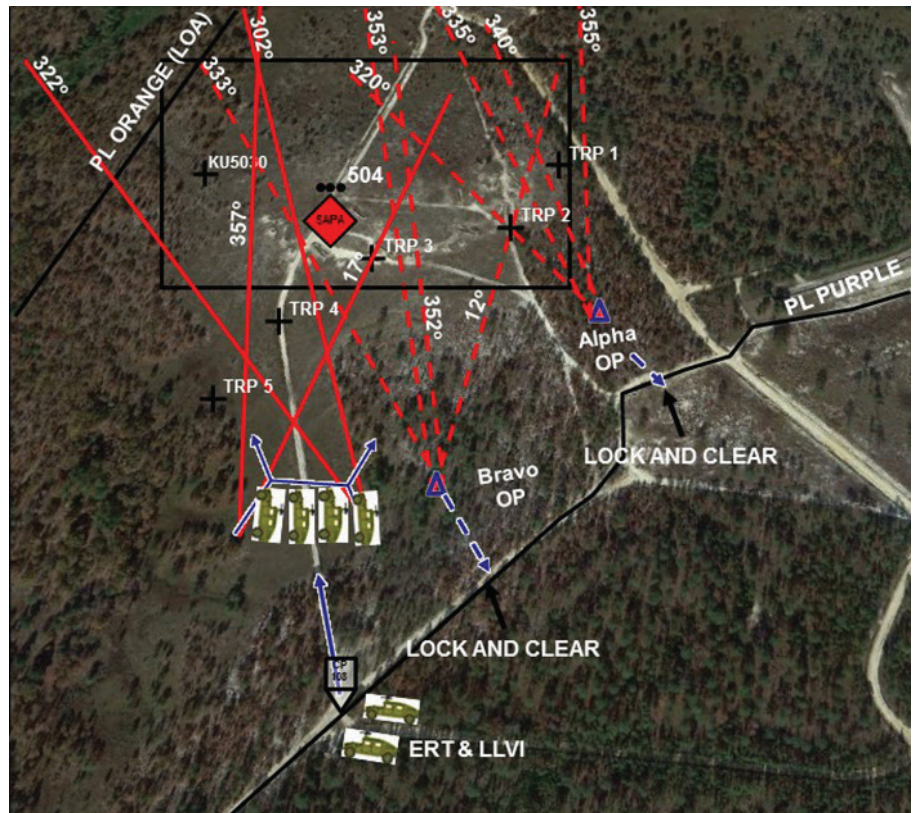
Figure 4. LFX break-contact concept. Scheme of maneuver: Once rounds begin landing in the impact area and vehicles are prepared to move, Bravo Section's OP shifts fire to only Target-Reference Point (TRP) 3 to open SDZs for the occupation. Alpha Section's OP will continue to engage. When the SBF initiates fire, Bravo OPs will cease fire, begin bounding back to Phase Line (PL) Purple and lock and clear (confirmed by an observer/coach/trainer (O/C/T)). Alpha's OP will engage from TRP 1 to TRP 2 until Bravo OP has called they are set at PL Purple. This will trigger Alpha's OP to cease fire, bound to PL Purple and lock and clear. Once both OPs are at PL Purple, the SBF will begin to retrograde. Risk mitigation: Vehicles will not be cleared to fire until they are established in their SBF locations. O/C/Ts traveling with the SBFs will confirm that the gunners have positively identified their TRPs before engagement. O/C/Ts with the dismounted elements will confirm they shift fire prior to the SBF occupying its position. When the dismounted OPs break contact, they will stay in their assigned lanes while retrograding to PL Purple.

squadron live fires at Fort Polk, LA.

In May 2017, 3rd BCT, 82nd Airborne, supported our troop CAMLFX at Fort Bragg. This exercise validated the cavalry squadron's ability to execute the "conduct a guard" MET. Multiple platoons led with their dismounted teams into concealed OPs. Lead elements detected enemy forces and suppressed with FA and 120mm mortar fires. Once motorized enemy forces arrived, the lead scouts cued the mounted reconnaissance vehicles to move into positions to destroy them with direct fires. Once OPs detected an armored force, the platoons each executed final protective fires, which suppressed the targets while sections bounded backward, broke contact with the force and

moved to ensure continuous reconnaissance.

Lessons learned

Individual:

- **Rusty direct-fire skills.** Training for lethal operations demonstrated shortcomings in individual movement techniques, controlling fires and timely and accurate reports.

- **Strong indirect-fire skills.** Individual scouts demonstrated high proficiency in live CFFs and AGO with attack aviation.

- **Urban TTPs.** Scouts learned how to occupy firing positions in buildings to engage targets while reducing their signature from outside (getting out
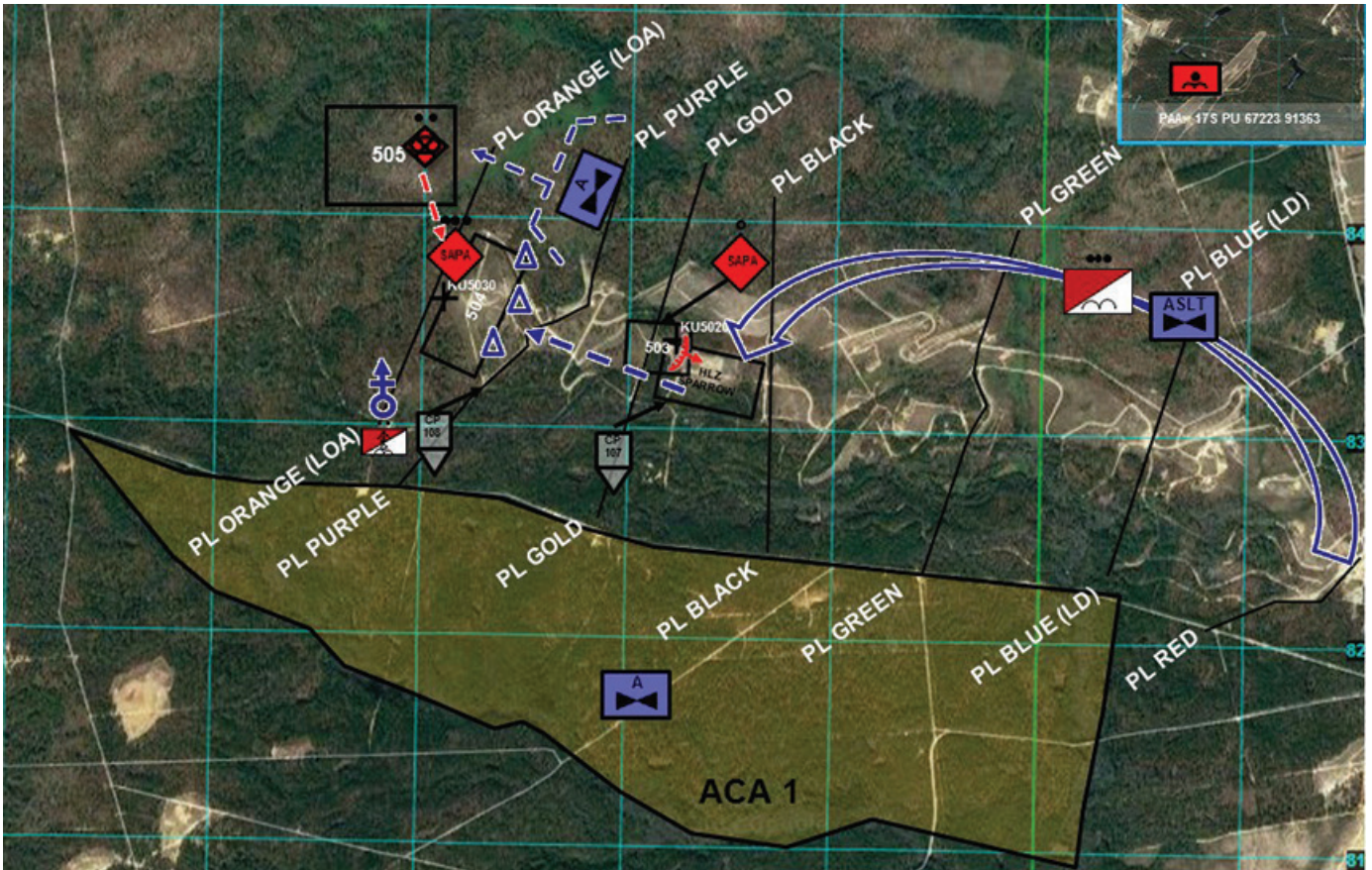
Figure 5. Dismounted platoon LFX concept.

Figure 6. A 5-73 Cavalry vehicle engages targets at the March 2017 platoon LFX. *(U.S. Army photo by SPC Zackary Nixon)*

of the window). Also, our scouts troubleshoot "sniper blinds" with black felt strips and tape, which concealed the firers in the structure.

Collective:

- **High learning curve.** We observed an initial lack of familiarity with signals and code words for lifting and shifting fires. Before long, platoon leaders effectively integrated flares, smoke and whistles, which enabled effective operations.

- **Berm drills.** Gunners and drivers practiced berm drills to minimize their exposure. Ideally, practice these in earlier training iterations to allow crews to arrive at the live fire ready to maneuver.

- **Using infantry's targetry.** Planners learned that most infantry collective-training concepts can be used for scouts – the planner just needs to reverse the order. For example, an infantry platoon routinely sits in a support-by-fire (SBF) position, then occupies an attack-by-fire position, then initiates fire and shifts and lifts the SBF's fire as the assault element closes on the objective. For scout training, the mission starts at the objective with scouts in an OP. Targets may be presented for indirect-fire missions until scouts demonstrate proficiency. Local, closer targets then are presented within the OP's engagement criteria (a four-man team and maybe one vehicle) as if an enemy force is attempting to seize their position. The scout team engages and destroys the enemy. Then, progressively more targets appear, which trigger displacement criteria. Mounted vehicles, if integrated, move into an SBF position to suppress targets while the scout team displaces by bounds. If vehicles are not integrated, nearby dismounted teams provide suppressive fire. Alternatively, platoons call for fire and obscuration to cover their moves. Once the dismounted teams are out of sector, the vehicle SBFs bound back to covered and concealed routes and recover the dismounted teams at pre-planned rally points.

- **Maximizing OP training through**

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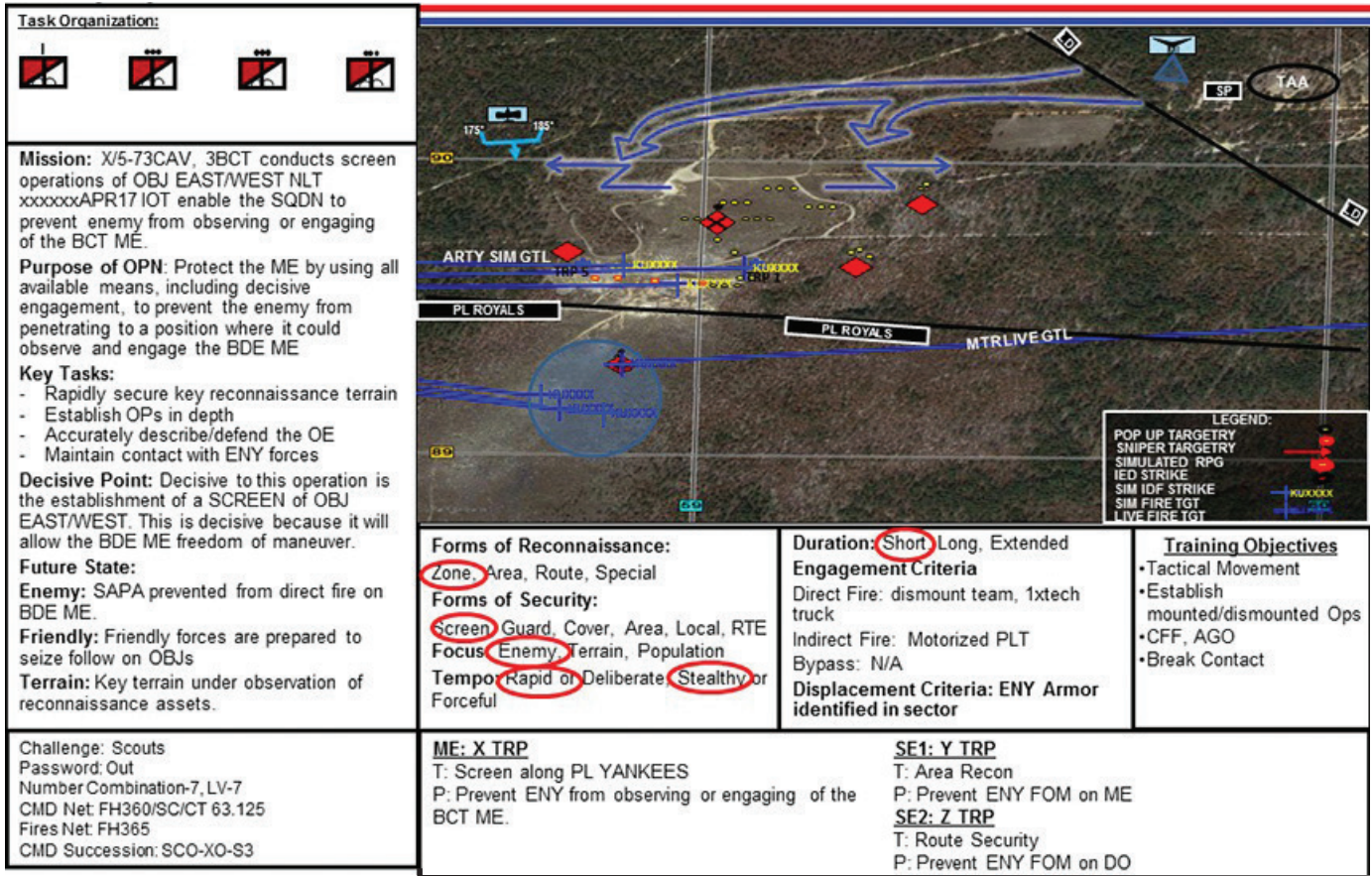
Figure 7. Mounted troop CAMLFX concept.
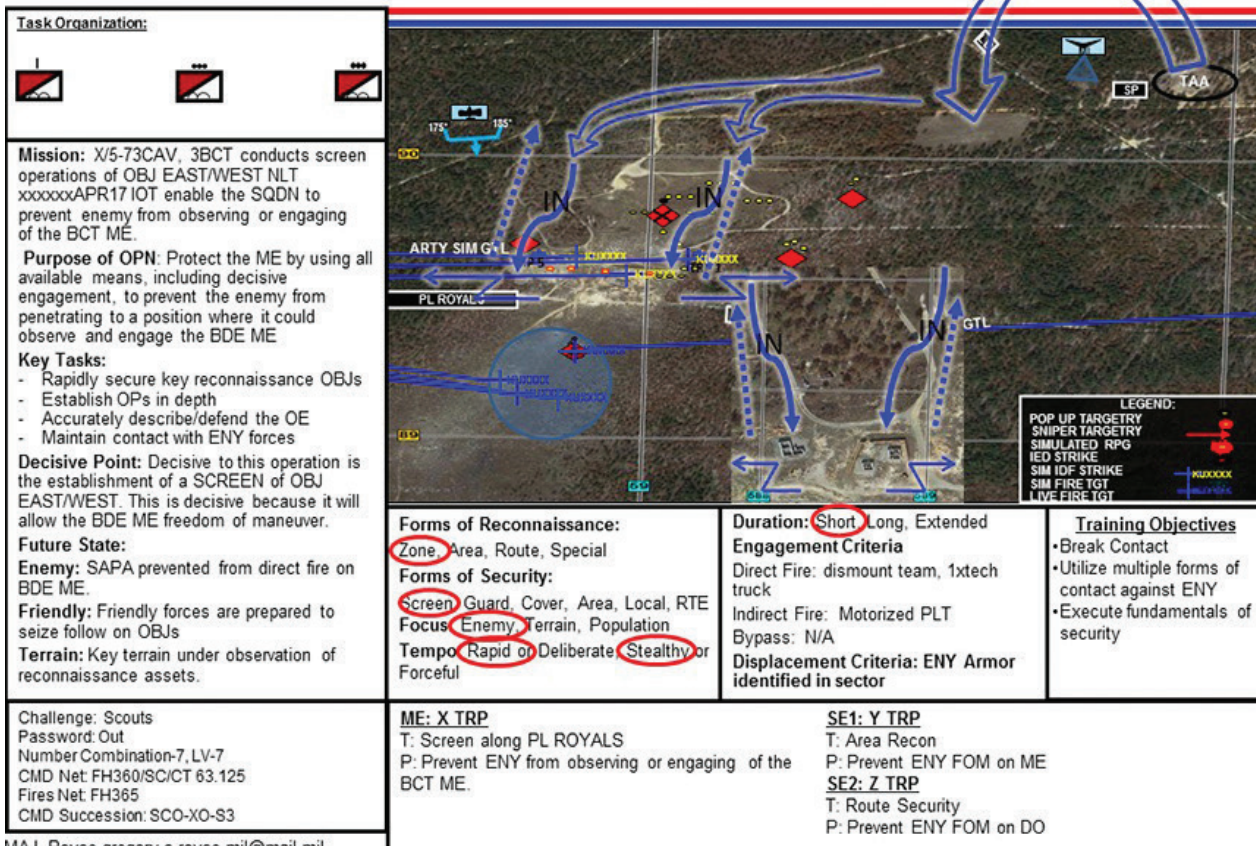
Figure 8. Dismounted reconnaissance troop CAMLFX concept.

MAJ Royse gregory s royse mil@mail mil

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placement. Selecting OP locations on the edge of impact areas allow live CFF training before executing live direct-fire training.

Leader:

- **Pre-global war on terrorism range concepts.** Our planners worked closely with Fort Bragg Range Operations to design scenarios with surface danger zones (SDZs) that supported the overall concept. Concepts from 2003 and earlier were optimal for our requirements, and the oldest Range Operations staff members were happy to recreate and certify them.

- **Tactical exercises without troops (TEWTs).** During TEWTs, scout-platoon leaders exhibited initial reluctance to engage targets with direct fires. We regularly use NTC's *Scouts in Contact* series of tactical exercises.[14] Each platoon leader completed a vignette with the squadron commander in the room and his/her troop commander outside demanding reports over the radio. As the squadron focused on lethality, I increased the TEWTs in which the situation called for the platoon to destroy enemy forces with their direct-fire weapons. Platoon leaders often delayed as they attempted to CFF or use attack aviation, even when immediate lethal action would have eliminated the threat.

Conclusion

All units must be proficient in their assigned weapons; this comes as no surprise. With renewed mandate for R&S operations, however, we must not overcorrect our training too far toward stealth at the expense of lethality. Of all the units on the battlefield, it is the scouts who most need to eliminate their adversaries the quickest.

The mission of cavalry squadrons requires scouts to gain and maintain contact with a cunning enemy, an inherently risky task. The scout team who instinctively eliminates the JRTC opfor threat with Multiple Integrated Laser Engagement System lasers must also do so with their 5.56 bullets. To mitigate the risk and allow scouts to provide continuous reconnaissance, their training must allow them to fight and

Figure 9. Squadron scouts arrive via CH-47 at the May 2017 troop CAMLFX. *(U.S. Army photo by SPC Zackary Nixon)*

Figure 10. Squadron scouts fire at dismounted targets at the May 2017 troop CAMLFX. *(U.S. Army photo by SPC Zackary Nixon)*

win upon chance contact. While stealth remains important, it is imperative for scouts to be experts in lethal direct-fire engagements. The return of R&S expertise does not replace lethal operations. Rather, the capability for lethality is imperative to complete reconnaissance missions against the modern threat.

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Vicenza; company commander, 75th Ranger Regiment, Fort Benning, GA; and tank-company commander, 1st Battalion, 72nd Armor, Republic of Korea. LTC Pence's military education includes the School of Advanced Military Studies, intermediate leader education, Scout Platoon Leader Course, Armor Basic Officer Course, Advanced Armor Officer Course and airborne and Ranger schools. He holds a master's of business administration degree from Webster University, a master's military art and science from the U.S. Army and a bachelor's of arts degree in organization psychology from the University of Michigan. LTC Pence was the first Armor officer to serve with 75th Ranger Regiment. His operational deployments include one in Iraq and three in Afghanistan.

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Increasing Reconnaissance and Security Proficiency through Leader Experience

by LTC Mark McClellan

Armored brigade combat teams (ABCTs) are balancing reconnaissance and security (R&S) education and training of personnel to ensure that key leaders in R&S positions have the skills and experience to be successful in these positions. A possible method for ABCTs to increase operational experience within their R&S units is to make R&S positions "second time" command or leadership opportunities within the ABCT.

As cavalry-squadron units conduct missions on shortened planning timelines and with greater operational depth, these missions require leaders and staffs who are able to execute troop-leading procedures (TLPs) and the military decision-making process (MDMP) quickly and with less guidance from higher levels. Assigning officers, whether in the Armor or Infantry Branches, who have already served a year in a position in a line unit and who have shown the potential for success in the Army could increase the cavalry squadron's mission performance.

Scout-platoon leaders

Cavalry-squadron scout platoons operate more independently and deeper in-depth than the combined-arms battalion (CAB) scout platoons. In the decisive-action fight at combat-training centers, squadron scout platoons are deploying 12-24 hours ahead of the brigade combat team (BCT) line battalions. Due to platoon density, though, the squadron scout platoons are the most operationally inexperienced scout-platoon leaders (PLs) in the BCT, as these positions are "first time" positions for the lieutenants. Generally, CABs choose their scout PLs from among nine line PLs. Thus, in an ABCT, three CAB scout PLs are chosen from 27 line PLs. For ABCT cavalry squadrons, cavalry squadrons traditionally choose their scout PLs as they are received from installation reception.

A possible method for ABCTs to increase the operational experience of their scout PLs would be to make scout platoons across the BCT a second PL position. Selection of these leaders would be managed at the BCT level. CABs and the squadron would
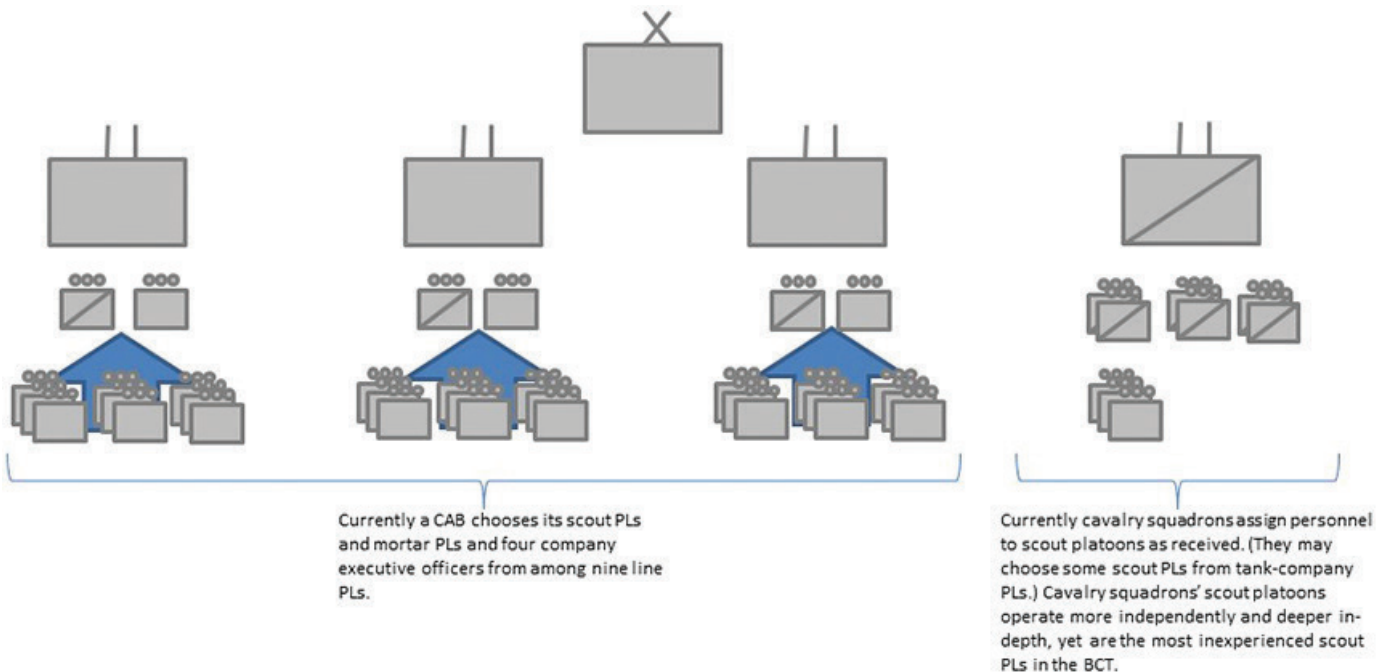
Currently a CAB chooses its scout PLs and mortar PLs and four company executive officers from among nine line PLs.

Currently cavalry squadrons assign personnel to scout platoons as received. (They may choose some scout PLs from tank-company PLs.) Cavalry squadrons' scout platoons operate more independently and deeper in-depth, yet are the most inexperienced scout PLs in the BCT.

If all scout platoons were made second-platoon positions, 36 line platoons would compete to fill nine scout platoons, three mortar platoons and 14 executive-officer positions.

Pros: Increased experience in cavalry-squadron scout platoons.

Cons: Reduced experience in line-company executive officers. Pushes senior-lieutenant management to BCT level.

Figure 1. Platoon positions within the BCT.

nominate top-performing maneuver PLs for the BCT scout platoons (the ABCT cavalry squadron has three tank platoons). To align incentives, CAB commanders could still assign their unit's "top two" lieutenants to their unit's scout platoon and mortar platoon while nominating their Nos. 3, 4 and 5 lieutenants for consideration for the squadron scout-PL position. The squadron would nominate the top tank-platoon leader within the cavalry squadron's tank company for the pool. This would create a pool of 10 people to compete for the six remaining squadron scout-PL positions. A method for choosing the next scout platoon's leaders in the squadron could be a BCT-led R&S field competition to select officers to be assigned to the squadron scout PL positions.

A benefit of this method is that it would ensure that the squadron and CAB scout PLs are some of the most operationally experienced PLs in the BCT. A possible negative is that this selection method would change the performance level of maneuver-company executive officers, as these officers are generally chosen from the same pool of officers considered for CAB scout-platoon positions. Also, the ABCT would need to ensure that one battalion wasn't the billpayer for most of the squadron scout platoons, as this would not align the incentives for the CAB with the ABCT.

Cavalry-troop commanders

For the cavalry troops, second-command troop commanders in the BCT could bring a great deal of operational experience to cavalry-squadron operations. Cavalry-troop commanders operate units more in depth and width across the battlefield with reduced planning time, compared with maneuver-company commanders; troop commanders with a year of maneuver company command would have more repetitions of TLPs under their belts and would be more experienced in company-level operations.

A possible method for ABCTs would be to pick their three cavalry-troop commanders from captains who are completing a year of line-company command time in an ABCT CAB. Again, to ensure incentives are aligned, BCTs

should ensure that CAB commanders still maintain input in the BCT commander's selection of their unit's headquarters and headquarters company commanders, as these positions require a great deal of operational experience and potential as well.

This selection process would equip troop commanders who have experience training and employing maneuver companies in attack and defense operations. From these experiences, these commanders would be better prepared to command troops answering the BCT commander's priority information requirements in decisive action.

Squadron executive officer and operations officer

The first year in a BCT for a field-grade officer is an eye-opening experience. New maneuver majors in BCTs spend the first year in a position learning how to be a field-grade officer and how to lead MDMP with inexperienced staffs – along with a number of other new tasks and requirements. Adding to those requirements, majors in a BCT cavalry squadron have to execute the MDMP process on a shortened timeline and possibly with a less-defined BCT plan, compared to maneuver majors in a CAB.

A selection method for ABCTs to increase the operational experience of cavalry-squadron executive officers and S-3s would be to assign these positions to some of the more successful majors in the ABCT. The BCT would still assign its "top two" majors to the BCT executive officer and S-3 positions; the No. 3 and No. 4 majors in the BCT would move over to positions in the cavalry squadron or remain if already assigned there.

This method would ensure that the ABCT cavalry squadron has two majors with at least a year of experience in the BCT. This method does have drawbacks, though. Currently, officers generally move between the S-3 and executive-officer position within the squadron or CAB, except for the two officers who move up to the BCT S-3 and executive-officer positions. This may cause a CAB to have two new field-grade officers after brigade transitions. The brigade commander would have to manage this to ensure that increasing

operational experience within the squadron is weighed against the possible excessively disruptive transitions within the CABs.

There is benefit from having a major who has been with the squadron for a least a year, as that officer knows the organization. The current 24-month limit for field-grade key and developmental (KD) service restricts the division's and brigade's commanders' ability to retain experienced majors within the BCTs. Thus, using this selection process may result in two experienced majors who are newly assigned to the squadron. Again, the BCT commander will have to balance requirements for experience vs. benefits from field-grade longevity in units. The Department of the Army should look at relaxing restrictions on major brigade KD service limits for BCT-level and cavalry-squadron majors to ensure that experience is retained within the BCT for those positions. With the 10-year pin-on point for majors, there is time available after KD service for officers to be assigned to broadening assignments, even if serving three years within a BCT.

Timeline and evaluation impacts

These selection methods have impacts for officer and unit timelines. A company- and field-grade officer KD timeline within a BCT is an important consideration for these selection methods. Generally, 12 to 18 months is the maximum amount of time an officer can spend in any one position type. These methods assume transitions at one year.

Human Resource Command manning guidance recommends that company-level commanders be in position for 12-18 months for one command and up to 24 months if given a second command. By increasing the number of second-time commands within an ABCT, units can maintain experienced and high-performing company-level commanders for up to six more months.

Also, very few units can sustain position transitions at a set time. Most unit transitions occur sporadically throughout a year based on the sustained readiness model, officers arriving and

leaving the units, and time-in-position milestones. ABCT, squadron and battalion staffs may have to align selection processes as positions open in the squadron and CABs.

Key to the success of this program is ensuring that officers have attended the appropriate R&S functional course for cavalry positions. For scout PLs, this functional course is the Army Reconnaissance Course (ARC). For cavalry troop commanders, this functional course is the Cavalry Leader's Course (CLC). For squadron field-grade officers, the education is received in Fort Leavenworth's Command and General Staff Officer's Course R&S elective, A331-reconnaissance and security. Majors who are attending sister-service, non-resident and fellowships for intermediate-level education requirements can attend CLC as well.

Another important consideration is the evaluation impacts for officers selected to serve in the ABCT squadron. A squadron made up primarily of PLs who perform in the top 50 percent of officers in the BCT could disadvantage these PLs, as they would be competing against a more competitive pool of officers. Some of these officers would not be "top blocked." Units would have to weigh the possible operational-effectiveness increase vs. with the possible negative impacts to an officer's evaluation.

Conclusion

Due to realities on the ground, it may not be possible to ensure that every scout platoon and cavalry troop in the cavalry squadron is manned with "second time" officers. Brigades can look to ensure at least one platoon per troop is led by a "second time" officer and at least one cavalry troop is a second command position. Also, BCTs should enforce attendance at ARC and CLC for leaders within their cavalry formations. Another option for BCTs to increase operational experience within cavalry units is to lengthen troop- and platoon-level KD time from 12-18 months to 18-24 months.

In addition to increasing performance within the squadron, ensuring that leaders within ABCTs have operational experience in maneuver line organizations before assuming positions within cavalry organizations will produce maneuver officers with a more diverse set of operational experiences. This will provide the maneuver force with a more broadened and experienced cadre of leaders for future assignments in both cavalry and maneuver formations. A maneuver major who has experience commanding both a maneuver company and a cavalry troop will be better prepared to serve as a field-grade officer within a BCT.

Experienced leaders are only a part of what makes a unit successful in its missions. Training and education in R&S are the other methods to improve cavalry-unit mission performance. As every leader has different capabilities, operational experience in a line battalion doesn't guarantee success in a cavalry organization. Still, for decades, maneuver battalions have been assigning top-performing maneuver PLs into scout-platoon positions based on their performance and potential after service as infantry or tank PLs because experience matters.

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- #3 and #4 experienced field grades in the BCT could bring a great deal of experience to squadron S-3 and executive officer positions.
- Mission requirements demand field grades familiar with the information-collection process and expedited MDMP requirements to execute off BCT warning orders 1 and 2.

- Second-command troop commanders in the BCT could bring a great deal of experience to cavalry-squadron operations.
- Cavalry troop commanders operate units more in-depth and more spread out with reduced planning time, compared with line-company commanders.

- If all scout platoons were made second-platoon positions, 36 line platoons would compete to fill nine scout platoons, three mortar platoons and 14 executive-officer positions.
- Currently a CAB chooses its scout PLs and mortar PLs from among nine line PLs. Currently cavalry squadrons assign personnel to scout platoons as received. (They may choose some scout PLs from tank-company PLs.) Cavalry squadrons' scout platoons operate more independently and deeper in-depth, yet are the most inexperienced scout PLs in the BCT.

Figure 2. Experience increases R&S proficiency.

Carson; combined-arms battalion executive officer, 1st Battalion, 8th Infantry Regiment, Fort Carson; commander, Company D, 4th Battalion, 64th Armor Regiment, Fort Stewart, GA; scout-platoon leader, 4th Battalion, 64th Armor Regiment, Fort Stewart. LTC McClellan's military schooling includes Command and General Staff College,

Infantry Captain's Career Course and Armor Basic Officer Course. He holds a bachelor's of science degree in history from the U.S. Military Academy and a master's of business administration degree in logistics, transportation and supply-chain management from the Naval Postgraduate School.

GEN David Perkins, commander of U.S. Army Training and Doctrine Command, speaks at the 2016 Maneuver Warfighter Conference.

2017 Maneuver Warfighter Conference

MG Eric J. Wesley, commander of the U.S. Army Maneuver Center of Excellence, will host the 2017 Maneuver Warfighter Conference at McGinnis-Wickam Hall on Fort Benning, GA, Sept. 12-15, 2017.

The purpose of the Maneuver Warfighter Conference is to provide a comprehensive forum to address current and future issues affecting the warfighting capability, training and lethality of the maneuver force.

Due to Department of Defense cap restrictions on temporary-duty conference attendance, the number of people authorized to attend the Maneuver Warfighter Conference in a TDY status is limited to 154 DoD personnel.

Therefore, TDY participation in this event is by invitation only.

For the latest information, including if the conference will live-stream (the information will at minimum be posted to a password-protected Website), visit http://www.benning.army.mil/mcoe/maneuverconference/.

The Return of Cavalry: A Multi-Domain Battle Study
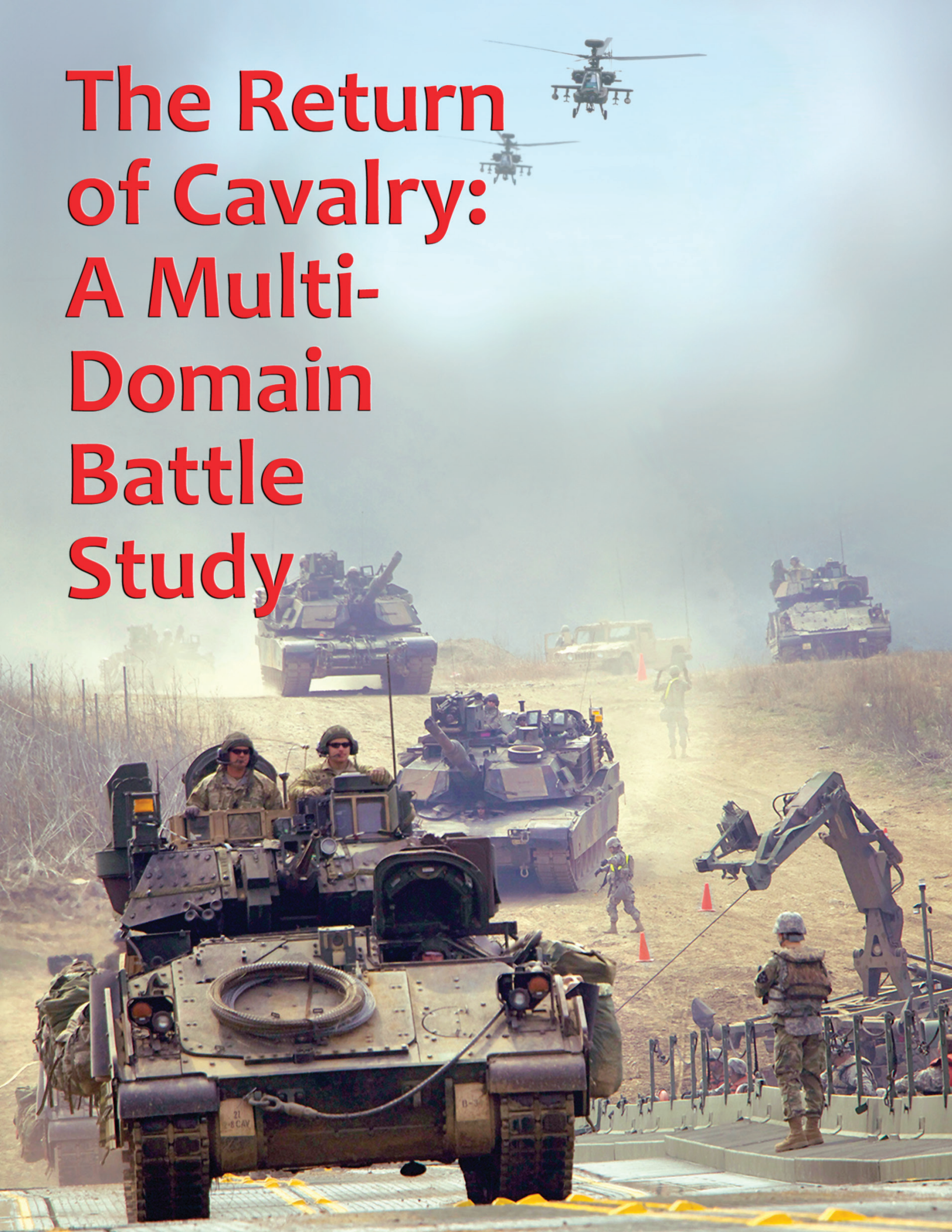
by MAJ Nathan A. Jennings, MAJ Amos C. Fox, MAJ Adam L. Taliaferro, MAJ David W. Griffith and MAJ Kyle T. Trottier

The U.S. Cavalry has enjoyed a long history as both an enabling and decisive tactical force during American land-power campaigns. From its earliest manifestations in 1775 to its incorporation into the modernized Armor Branch in 1950, the Army's primary mounted arm employed mobility, firepower and eventually protection to aggressively shape conditions across the battlefield's breadth and depth while providing distinct advantages to the larger combined-arms force.

This record of evolving contributions, which ranged from dedicated reconnaissance-and-security (R&S) efforts in World War II to more generalized roles during recent counterinsurgency (COIN) campaigns in Southwest and Central Asia, has once again found the "spurs and Stetsons" community at a doctrinal, material and organizational crossroads.[1]

The tradition's newest inflection point centers on the unique service that lethal, mobile and survivable cavalry forces can potentially contribute to the Army's emerging multi-domain battle concept. As argued by GEN David Perkins, 15th commander of U.S. Army Training and Doctrine Command (TRADOC), it requires "flexible and resilient ground formations that project combat power from land into other domains to enable joint-force freedom of action."[2] In contrast to recent conflicts where scouts and tankers typically fought as general-purpose Soldiers, this emerging paradigm – which leverages emergent technologies to shape "deep fights" with cross-domain effects – offers opportunity for fast-moving armored forces, and cavalry in particular, to assume critical roles in dislocating and disintegrating enemy networks. This advance holds potential to expand the purpose and identity of the Armor Branch.

Context and background

The Army's return to focusing on peer competition finds its mounted-maneuver proponent recovering from a diminishment of perceived value after years of optimization for stability operations in Iraq and Afghanistan. While the Armor Branch, and its cavalry subset, strained to reconcile urgent COIN demands and traditional doctrinal mandates, the broader institution seemed to place increasingly less import in formations designed to conduct forceful R&S. This perceived loss of stature was reflected in intellectual questioning of the need for cavalry, observations of diminished enthusiasm for joining the branch at West Point, degradation of skills and identity, and the simultaneous loss of corps- and division-level cavalries in favor of less-capable squadrons assigned to brigade combat teams (BCTs).[3]

The decision to create less-resourced humvee, Stryker and armored-cavalry squadrons with a relatively anemic allocation of mechanized platforms stemmed from the Army's embrace of BCT modularity. The transformation aimed to empower economized reconnaissance, surveillance and target acquisition with emerging technologies by shifting emphasis from aggressively fighting for information to attaining situational awareness through stealthy observation.[4] As assessed by a 2014 Maneuver Center of Excellence (MCoE) study, the resulting composition – bereft of the organic tanks and rotary wing of the legacy armored-cavalry regiments (ACR) and division-cavalry squadrons (DIVCAV) – "left the force structure without an organization that possessed the organic assets, doctrinal underpinning and specialized training to execute the broad range of traditional cavalry missions."[5]

This perceived relegation of cavalry functions, at least in terms of resources, inflicted subtle identity confusion on the "combat arm of decision" as a generation of leaders predominantly gained combat experience in stability operations. The ambiguity was further clouded as the Army eliminated tank-pure battalions, moved the Armor Center to the "home of the infantry" and reorganized its final deployable ACR as a Stryker BCT. Simultaneously, infantry leaders increasingly assumed command of cavalry squadrons and troops populated by 19-series Soldiers, while Armor officers at the U.S. Military Academy reported, albeit anecdotally, the dilution of the branch's "brand" when cadets struggled to understand its distinctive history, functions and purpose.[6]

A third area of institutional concern centered on the predictable diminishment of tactical and technical acumen among officers and noncommissioned officers (NCOs) in both combined-arms battalions and cavalry squadrons as they trained for COIN. As argued by then-BG Scott McKean, who served as Chief of Armor from 2014 to 2016, observed trends from combat training centers demonstrated "a significant degradation in our knowledge and abilities to conduct [R&S] operations."[7] This included a loss of stabilized gunnery expertise, degradation of maintenance competence, atrophy of information-collection skills and diminished familiarity with time-honored ceremonies and customs for many leaders.

Despite these setbacks, the American cavalry force has begun to regain its distinctive relevancy within the broader institution in recent years. In 2016, the armored squadrons replaced their humvees with more M3 Cavalry Fighting Vehicles (CFVs) and gained a tank company to allow increased lethality and survivability. Simultaneously, the squadrons of the Stryker BCTs assumed training responsibility for their brigade's anti-tank and Mobile Gun System (MGS) companies, thereby uniting heavier firepower and wheeled scouts. This focus on empowering R&S operations – often reflecting increased integration of cyber-electronic, unmanned surveillance and informational technologies – indicates a growing appreciation by senior Army leaders for the dynamic role cavalry will perform in future campaigns.[8]

The squadrons of the infantry BCTs, though optimized with motorized scouts and light infantry to facilitate tactical and strategic mobility, have continuing challenges resulting from modularity. As assessed by the 2014 MCoE study, they "lack the passenger-carrying capacity, protection and mobility required for [R&S] operations" while maneuvering with a dearth of "organic mobile, protected firepower."[9] Comprising most of the cavalry force at about 59 percent, the lighter squadrons' modest vehicle density and logistical requirements conflict with the

doctrines of select parent divisions that emphasize dynamic aerial movement across extended distances and restrictive terrain.[10]

Despite recent improvements, the Army's cavalry formations still lack the robust combined-arms capabilities once enjoyed by ACRs and DIVCAVs. The possession of organic scout or attack rotary wing, in particular, has historically delineated R&S capabilities at tactical and operational levels. Without the air-ground maneuver profile of their predecessors, the current squadrons, regardless of increased CFV, Abrams or MGS densities, remain limited in capacity to aggressively and independently fight for information. While the integration of emergent technologies is creating new possibilities, these issues will inform the current cavalry force's ability to support multi-domain operations with enhanced speed and lethality across expanded frontages and distances.[11]

Multi-domain battle

The Army's renewed focus on defeating peer-adversary complex defenses, even as it innovates to expand the aging 2nd Offset into 21st Century warfare, emphasizes land corps and division "deep fights" designed to create advantageous conditions. By incorporating simultaneity, depth, synchronization and flexibility, as argued by Army Doctrine Publication (ADP) 3-0, **Operations**, "commanders seek to seize, retain and exploit the initiative while synchronizing their actions to achieve the best effects possible."[12] Since the institution now possesses a historically low quantity of maneuver brigades to attain offensive mass or endure unanticipated attrition, it has become increasingly vital for advance ground elements to integrate indirect, aerial, cyber, electromagnetic and informational fires to dynamically shape battlefield outcomes.

While all Army tactical forces boast degrees of operational reach and tactical agility, cavalry formations – both wheeled and mechanized – are ideal elements to host, integrate and synchronize joint fires while sustaining high-tempo movement. Even as airborne, air-assault and attack-aviation entry becomes problematic due to improving enemy area-denial (AD) capabilities, ground penetration by fast-moving, lethal and survivable formations holds potential to exploit kinetic and electromagnetic joint capabilities to dislocate enemy defenses. While cavalry will always conduct traditional R&S missions, the emerging paradigm offers opportunities to lead integration of multi-faceted fires and deep-strike actions.

This revitalized approach, which incorporates insights from past campaigns of scale and depth, requires the Army to examine its current brigade-centric cavalry structure. As argued by LTG H.R. McMaster, who commanded 3rd ACR in Iraq in 2005, "trends in armed conflict that include all domains contested, increased lethality and range of weapons, complex and urban terrain, and degraded operations all argue for increasing importance of [R&S] capabilities at all echelons."[13] In the context of multi-domain battle, this means that current divisions and corps lacks optimal elements to enable and exploit diverse joint fires during forceful and wide-ranging "recon-strike" – sensor-to-shooter tactics that synchronize collection and fires networks – throughout contested domains and spaces.[14]

The Army has a variety of options to create specialized means and doctrine to defeat complex defenses. While combined-arms battalions and cavalry squadrons in BCTs remain indispensable for enabling success in "close fights," the emerging R&S brigade excursion – where select BCTs temporarily train to conduct historical ACR missions – provides an immediate, if inefficient, option for enabling corps-level forced entry. Alternatively, divisions could create large air-ground task forces with the ability to execute dispersed maneuver from across subordinate brigades. A more optimal solution would be, as proposed by the Commission on the Future of the Army, to form R&S strike groups (RSSGs), specifically designed with enhanced ground, aerial and intelligence capabilities to enable echeloned joint efforts.[15]

The establishment of larger and more effective cavalry formations to execute
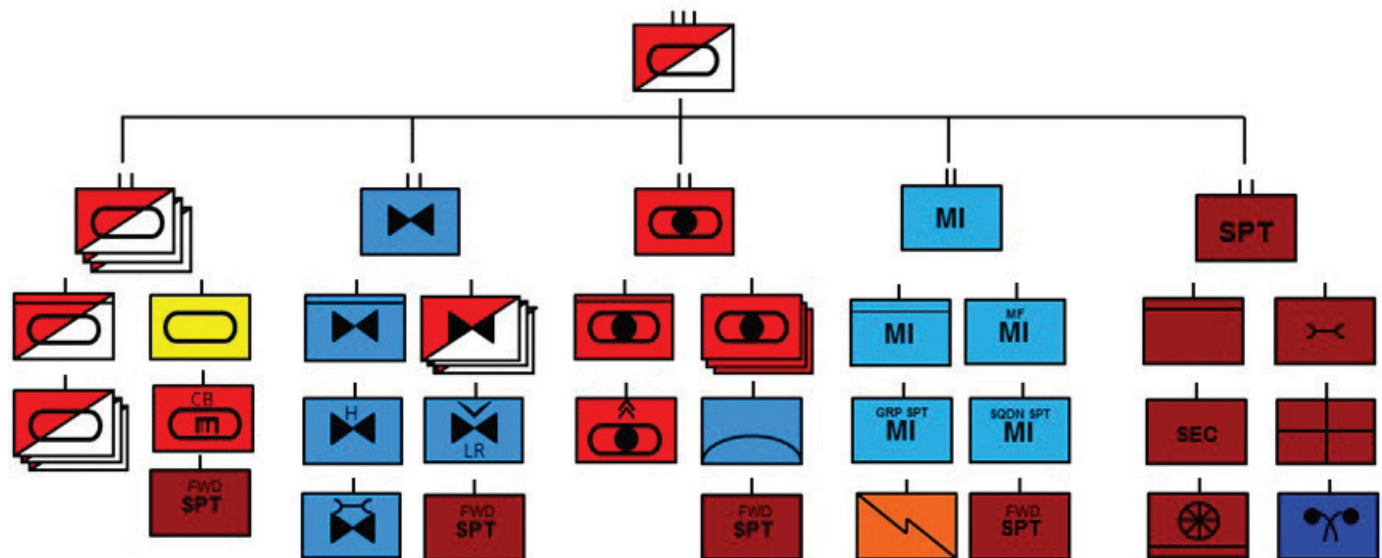
Figure 1. Example R&S force.

ARMOR ⚔ Summer 2017
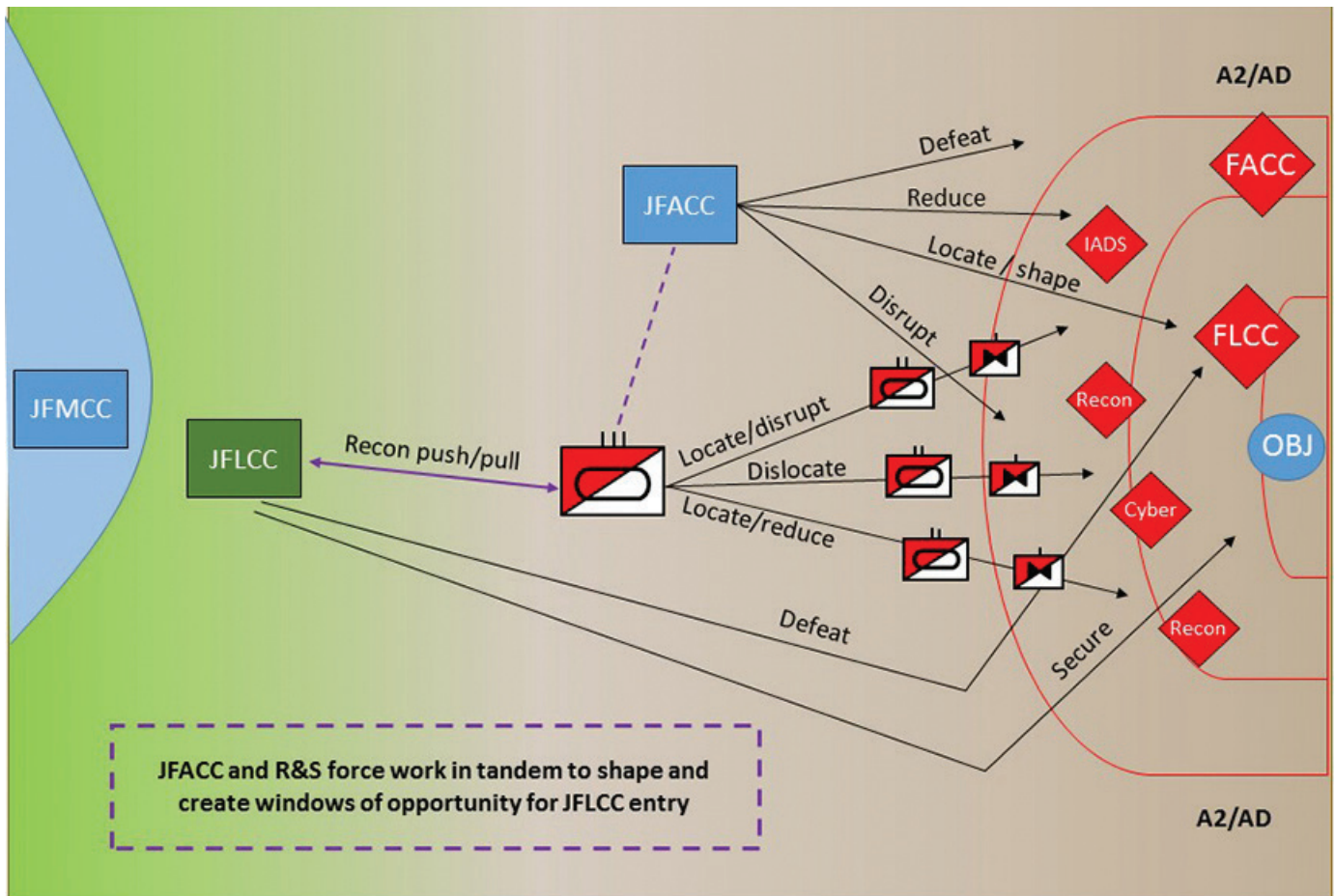
Figure 2. R&S support to joint-force entry.

reconnaissance, security and strike options for corps and theater armies would allow the Army to better contribute to joint campaigns. As suggested by retired LTG David Barno in his 2015 report, "The Future of the Army," reimagining the capabilities of legacy ACRs, even if only through doctrinal solutions, "would give division and corps commanders a scalable formation" with the necessary mobility, protection and firepower to conduct "screening and guard missions, as well as a myriad of long-range independent operations in support of other maneuver units."[16] This capability would ultimately allow rapid bridging of air and land component efforts as cavalry teams maximize cross-domain fires.

The adoption of a focused recon-security-strike doctrine and philosophy in a joint context would also offer broader benefits across the full range of military operations. Units with enhanced mobility, lethality, protection and tailored technological packages have historically provided valuable

economy-of-force options to corps and theater commands in diverse settings. While 11th ACR proved its value during distributed-security operations in Vietnam when they employed superior operational reach and firepower to overmatch Viet Cong opponents, the American constabulary regiments that patrolled West Germany following World War II demonstrated similar benefit when their mechanized presence ensured relative peace during a period of precarious political transition.[17]

A final benefit of modernizing cavalry contributions would include allowing the Army to better contribute to national strategic deterrence. By providing regional combatant commands with forces optimized to reconnoiter over distance while leading the tactical synchronization of cross-domain fires — similar to Operation Atlantic Resolve but with teams specifically designed to collect information and strike AD networks – the institution would fulfil its doctrinal imperative to "prevent conflict and shape security

environments."[18] Reminiscent of the services performed by ACRs along the Iron Curtain during the Cold War, forward-positioned R&S brigades, RSSGs or comparable task forces in places like Eastern Europe would reassure allies and deter adversaries by amplifying operational simultaneity, depth, synchronization and flexibility in unified land operations (ULO).

Branch identity

The Army's embrace of multi-domain battle offers further opportunity for Armor Branch, and its cavalry subset, to modernize the internal perceptions, external expectations and joint implications of its organizational identity. The U.S. military's shift in emphasis toward achieving more rapid and decisive "windows" of advantage across enemy disruption and security zones, while providing early access for key enablers, creates the need for agile and survivable ground partners. Armor and Cavalry leaders, with organizational culture and material expertise suited for dispersed maneuver, serve as ideal

hosts to maximize cross-domain efforts during joint operations.[19]

Since, as argued by LTG McMaster, the Army's "competitive advantage doesn't come from a single branch or single technological capability" but instead emanates from the "ability to employ a broad range of technologies and capabilities in combination with each other."[20] Therefore, the Armor community should continue to lead integration of both traditional and emerging cross-domain fire and maneuver; this demands capitalizing on emergent requirements for ground elements able to combine reconnaissance, security and strike capability across expanded theater depth in the face of complex AD networks. The "rebranding" would subtly shift the traditional "jack of all trades" mentality of scouts to "cross-domain leaders" as cavalry forces position to allow joint forces to dislocate and degrade adversary capabilities.

While the Armor Branch will always retain its singular status as the Army's proponent for mounted maneuver,

expansion of its identity within a multi-domain context can broaden its "combat arm of decision" moniker to include a greater range of decisive impacts. This would imply that scouts and tankers bring not only unmatched direct-fire lethality but also the destruction of diverse joint fires – kinetic, cyber, electronic, informational – as only mounted forces capable of high-tempo warfare can reliably enable. While all Army communities contribute distinctive capabilities, Armor, with responsibility to dominate R&S, owns the imperative to shape "deep fights" for joint force commands.

This broadening of organizational emphasis holds implications for how the mounted-maneuver community, and the Army writ large, should perceive Armor and Cavalry leaders at various stages of development. Beginning with company-grades, the traditional mandate, as described by LTG Sean MacFarland, that armored forces be "led by officers and NCOs who are properly trained and qualitied to operate at high speeds across large distances"

could be joined with unique expertise to coordinate and apply cross-domain fires from a panoply of 21st Century enablers.[21] While all tactical leaders must attain combined-arms proficiency, 19-series officers and NCOs who operate early, independently and forward in cavalry troops and tank companies are natural candidates to integrate the joint armament.

Commanders and staffs, according to Army reconnaissance doctrine, "manage assets by cueing, mixing and redundant employment" of systems to "collect the most critical information with multiple perspectives."[22] Armor-Branch field-grade officers and senior NCOs in mechanized and motorized squadrons, as well as echeloned headquarters, must accordingly exercise superior competency in planning and leading the tactical application of cross-domain fires. As premier managers of diverse enablers during ULO, 19-series majors, lieutenant colonels and sergeants major offer the depth and breadth of expertise for empowering maneuver with both traditional and

Company-grade officers and NCOs
Expertise in coordination and application of cross-domain fires in tactical operations from diverse enablers.
(Electronic warfare, intelligence, cyber, SOF, joint)

Field-grade commanders and staffs
Expertise in planning and leading the tactical integration of cross-domain fires and maneuver. The premier synchronizers of diverse enablers during joint/combined operations.

Senior Armor and Cavalry leaders
Expert managers of cross-domain fires in ULO. Leaders with depth and breadth expertise for empowering maneuver with both traditional and newer technologies.

Institutional requirement:
Focused training in the professional military education of all Armor and Cavalry leaders to integrate combined-arms maneuver and R&S operations with cross-domain fires from a diverse set of enablers (electronic warfare, intel, cyber, SOF and joint).
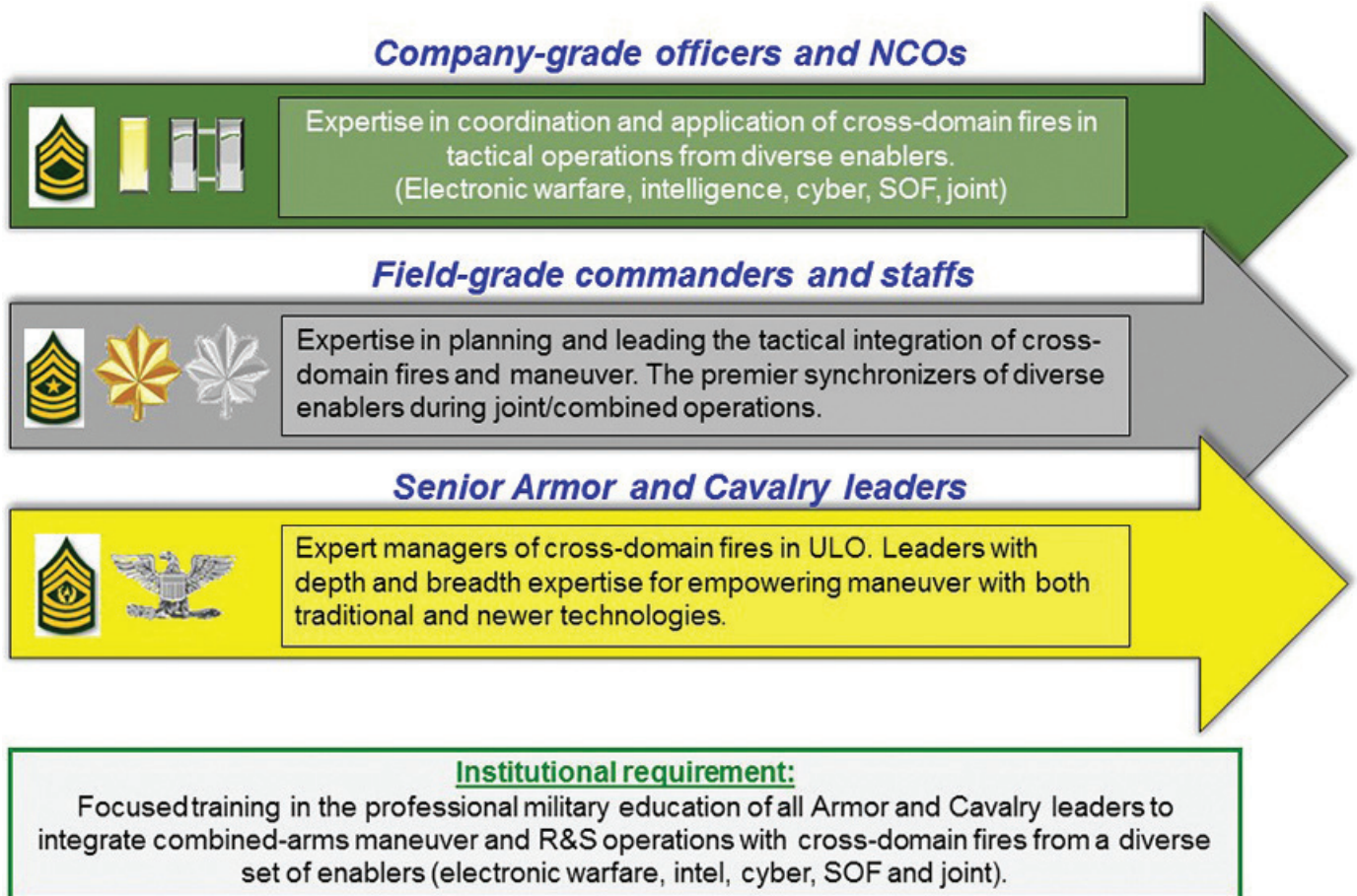
Figure 3. A continuum of expertise.

newer technologies. This tactical acumen makes them indispensable contributors to any command.

If Armor and Cavalry Soldiers are masters of integrating cross-domain efforts, those who rise to colonel and command sergeant major have internalized the ability to negotiate the broader complexities of multi-domain battle. The mounted-maneuver community's focus on planning, facilitating and leading diverse teams with tailored task-organization creates team-builders with aptitude for complex problem-solving and strategic decision-making. Following the examples of iconic leaders like GEN George Patton and GEN Creighton Abrams, senior Armor leaders, after decades of attaining comfort leading dispersed and mobile formations across distance, provide the joint force with adaptive and agile practitioners.[23]

Maximizing this branch-wide "brand" of cross and multi-domain expertise requires focused training in the professional military education of all tankers and scouts. As argued by BG John Kolasheski, 50th Chief of Armor, the Armor School has long served as the "institution of choice for developing agile and adaptive leaders" that can "operate in any environment" and "are capable of integrating combined arms."[24] As the U.S. military anticipates engagement in increasingly complex settings, the continuous integration of newer technologies to complement traditional enablers in decisive-action training programs will ensure that 19-series Soldiers, from private to colonel, are prepared to maximize the potential of maneuver and fires to shape future operating environments.

Emerging horizons

GEN Mark Milley, 39th Chief of Staff of the Army, recently warned that "land-based forces now are going to have to penetrate denied areas for the rest of the joint force" while having the capability to "operate in all domains simultaneously."[25] Armored forces, when maneuvering as combined-arms teams, have the potential to adopt more decisive roles in multi-domain battle efforts as they enable rapid forced-entry across contested battlefields. While all Army branches and warfighting functions contribute critical capabilities, task-organized cavalry formations offer a unique combination of mobility, protection and firepower to dislocate and disintegrate sophisticated enemy defenses through reconnaissance and strike actions.

Continuing advancements in emerging technologies will only increase the intensity of 21st Century conflict as the United States designs new doctrines and structures to combat emergent threats. The Armor Branch, and its cavalry subset, will assume increasingly prominent roles in facilitating offensive campaigns of scale by dispersed joint task forces. Eventually, this may include increased incorporation of ground and aerial drones, robotic armored proxies, emergent swarm tactics and unprecedented cyber-electronic devastation as scouts and tankers unleash cross-domain fires.[26] If the COIN wars in Iraq and Afghanistan seemed to marginalize the cavalry tradition, the complexity, tempo and depth of the multi-domain battlefield may demand its return to prominence.

(Editor's note: Questions about this article may be sent to MAJ Nathan Jennings, lead writer and point of contact, at nathan.a.jennings2.mil@mail.mil.)

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ACRONYM QUICK-SCAN

A2/AD – anti-access/area denial
ABCT – armored brigade combat team
ACR – armored-cavalry regiment
ADP – Army doctrinal publication
AOBC – Armor Officer Basic Course
BCT – brigade combat team
CFV – Cavalry Fighting Vehicle
CGSC – Command and General Staff College
CLC – Cavalry Leader's Course
COIN – counterinsurgency
DIVCAV – division cavalry
IADS – Integrated Air Defense System
JFACC – Joint Forces Air Component Command
JFLCC – Joint Forces Land Component Command
JFMCC – Joint Forces Maritime Component Command
MCCC – Maneuver Captain's Career Course
MCoE – Maneuver Center of Excellence
MGS – Mobile Gun System
MI – military intelligence
NCO – noncommissioned officer
OBJ – objective
RSSG – reconnaissance and security strike group
R&S – reconnaissance and security
SAMS – School of Advanced Military Studies
SOF – Special Operations Forces
SPT – support
TRADOC – U.S. Army Training and Doctrine Command
ULO – unified land operations

Leveraging Space: an Examination of the Ultimate High Ground at Echelons Brigade and Below

by LTC Coley D. Tyler

Describing the space domain as "the ultimate high ground" may seem cliché, but there are some underlying truths in the statement that the U.S. Army has taken for granted since the advent of the space-enabled force in the late 1980s.

Imagine a day without:

- Space assets providing intelligence, surveillance and reconnaissance (ISR) of denied areas;
- The Global Positioning System (GPS) providing position, navigation and timing (PNT) for joint friendly-force tracking;
- Precision-guided munitions;
- Satellite communications (SATCOM); or
- Missile warning (MW) or environmental monitoring (EM) providing terrestrial weather, enabling land operations …

… and you quickly recognize the Army's reliance on the capabilities afforded by the ultimate high ground of space.

Over the course of the previous three decades, the Army has shifted from being space-enabled to space-dependent, a condition our potential adversaries understand and intend to exploit in future conflict.

Space provides multiple capabilities that enable movement and maneuver, but our adversaries will increasingly put these at at risk to neutralize our long-held technological advantage and challenge conventional assumptions of domain superiority. Therefore units must be adept at operating in a denied, degraded or disrupted space operating environment (D3SOE).

This article addresses how formations can best prepare for this reality to ensure mission accomplishment regardless of the level of space-domain degradation. Commanders must be aware of the threat, understand the role of space capabilities within the Army and exercise future space support within the emerging conceptual frameworks of multi-domain battle (MDB) and the Army Functional Concept for Movement and Maneuver (AFC-MM).

Threat

Any adversary can be space-capable with access to many of the same capabilities the U.S. Army enjoys if it can afford the commerical rate for provided services.[1] Space-faring nations – nations that possess their own space capabilities – have a wider range of options. Some possess the ability to develop their own space systems and function in the space domain as near-peer competitors with the United States. These capabilities generally provide ISR, PNT, SATCOM, MW and EM for their forces. Some of these near-peer competitors have also developed counter-space abilities or the ability to threaten others' space assets and means.[2] Some nations employ a mix of national and commercial capabilities, while others depend on commercial only.

Considering that a typical U.S. Army brigade combat team (BCT) has more than 2,500 pieces of PNT-enabled equipment and 250 pieces of SATCOM-enabled equipment, assured access to space is tremendously important.[3] The recent conflict in Ukraine highlighted issues the U.S. Army could face in the future. Russian separatists were highly successful executing electronic attacks, GPS jamming/spoofing and signals interceptions and targeting.[4]

Carl von Clausewitz opines that "[h]istorical examples clarify everything and also provide the best kind of proof" if properly used through explanation, application, supporting facts and deduction of doctrine.[5]

Sun Tzu also counseled that one who knows the enemy and knows himself will not be endangered in a hundred engagements. One who does not know the enemy but knows himself will be sometimes victorious and sometimes will meet with defeat. One who knows
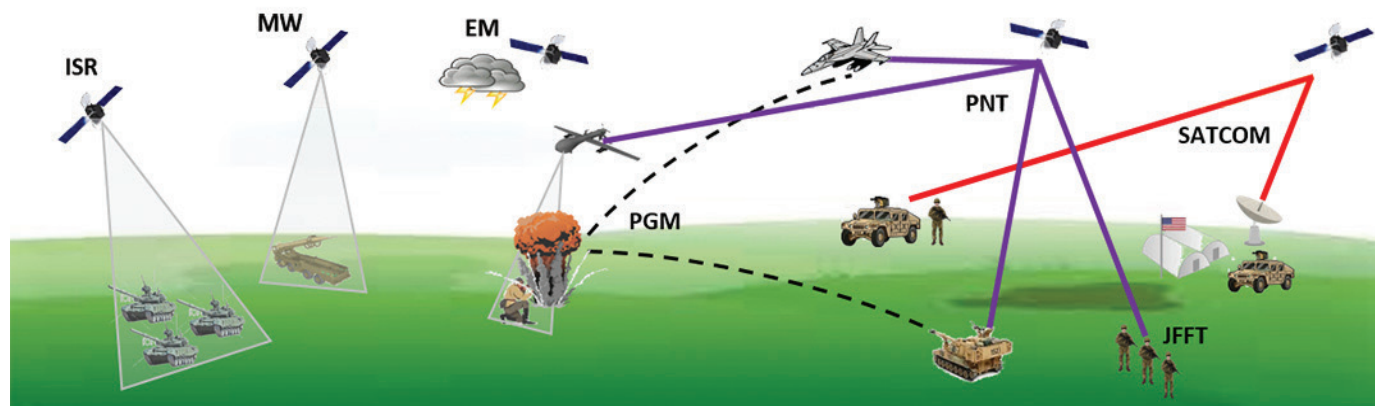

Figure 1. Illustration of space support to operations. *(Graphic by LTC Coley D. Tyler)*

neither the enemy nor himself will invariably be defeated in every engagement.[6]

If we heed their advice, then understanding how the space domain can affect the U.S. Army (in light of potential threats) and how it is structured to leverage the ultimate high ground is very instructive for a "space saavy" future force.

Space's role

Recent observations, trends and insights reveal that most units are ill-prepared for a D3SOE and there is much room for improvement. For example, in the 2015 Gypsy Kilo exercise – a Joint Navigation Warfare Center (JNWC)-faciliated contested PNT and navigation-warfare (navwar) event – JNWC simulated D3SOE conditions for company-sized elements and concluded that units experienced significant issues navigating and maintaining situational awareness of force orientation in degraded environments.[7]

National Training Center rotation after-action reviews routinely reveal:

- Underuse of GPS encryption;
- Deficiencies in spectrum-management operations/Joint Restricted Frequency List;
- Poor SATCOM terminal operations;
- Insufficient contested-space techniques (for example, primary-alternate-contingency-emergency plans, tactical standard operating procedures and battle drills); and
- Inadequate unmanned aerial systems (UAS)/counter-UAS operations.[8]

U.S. Army senior leaders believe the old adage, "The more you sweat in peace, the less you bleed in war." In December 2015, the Chief of Staff of the Army (CSA) challenged the combat-training centers (CTCs) for "increased exposure to electronic warfare … as close to combat as you can get without actual death. Rachet up the intensity … to make the experience a leader and Soldier crucible."[9]

The Combined Arms Center (CAC)'s commanding general published a directive mandating the inclusion of D3SOE training into all professional-military-education (PME) courses. The commander's intent is "[t]o ensure the Army Space Training Strategy is fully implemented within [PME] to improve the Army's understanding and [use] of space capabilities, improve operations in contested operational environments and create a continuum of career-long space education throughout the professional-development system."[10]

The U.S. Army Space and Missile Defense Command (SMDC) is working hard to reverse these trends by fully implementing the Army Space Training Strategy (ASTS) that the Army G-3 directed in preparation for the future and by providing D3SOE home-station training to better prepare units for training rotations.

SMDC supports U.S. Army space training and professional development and education through three lines of effort (LoEs): institutional, operational and space cadre:

The **institutional LoE** aims to increase knowledge and awareness of space capabilities through education and training at Training and Doctrine Command (TRADOC) centers of excellence and schools. Currently at the Maneuver Center of Excellence (MCoE) on Fort Benning, GA, SMDC teaches blocks of space instruction to the Maneuver Pre-Command Course and Infantry/Armor Basic Officer Leader Courses. SMDC is also making progress toward implementing instruction for the Maneuver Captain's Career Course.

Through the **operational LoE**, SMDC trains units at home-station and the CTCs to better leverage space capabilities and better prepare them to fight in a D3SOE. Units can coordinate with the Army Space Training Integration (ASTI) Branch directly to integrate space training into the unit training cycle.

Lastly, the U.S. Army has a core of **space cadre** to offer subject-matter expertise within the operating force. Army space-support elements (SSE) are small cells of space cadre trained and experienced in space operations organic to army, corps, division and Special Forces Group staffs. SSE understand planning and operational considerations of employed space capabilities and have a firm knowledge of the threats to those systems by an adversary.

An Army space-support team (ARSST) can augment an SSE for product development and employment of unique capabilities during deployments, exercises or increased-operational-tempo situations. An ARSST is also tailorable in size and expertise (rank and/or military-occupation specialty) based on
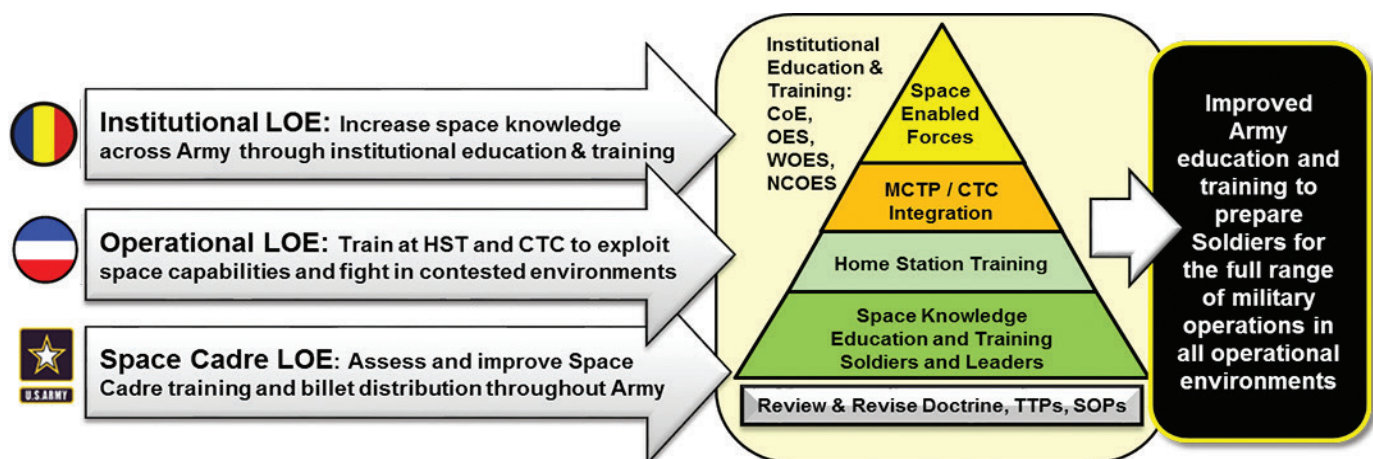

Figure 2. ASTS. (Graphic source: **Space Update**, MCoE Pre-Command Course brief)

the supported organization's needs.

Armed with knowledge of the threat and self-awareness of space-domain operations (function and structure), the U.S. Army can better prepare the force for future conflicts. Space-cadre members resident within the force structure offer units a myriad of support. Examples include reverse intelligence preparation of the battlefield/ Red space; electromagnetic-interference resolution; navwar and special technical operations support; MW system status; additional imagery/overhead persistant infrared requests; space-systems-constellation health status; and GPS accuracy reports.

Future space support

Just as the Second Offset strategy of the 1980s connected the U.S. Army to space-based capabilities, the Third Offset strategy must maintain the U.S. military's advantage over its adversaries in space. The CSA and commandant of the Marine Corps recently signed off on an MDB whitepaper that will serve to inform the U.S. Army on how current and future forces will operate and protect capabilities within the space domain in light of the emerging near-peer threat. The U.S. Army cannot allow current and planned space dependencies to hinder operations in future conflicts.

Concept-to-capability activities orchestrated by TRADOC aim to address these dependencies and better protect and employ current and future technologies to retain a continuing advantage. How the U.S. Army plans to leverage space in the future to execute MDB and the AFC-MM is a considerable question to be addressed in the Force 2025 Maneuver Campaign of Learning. There is no doubt that space capabilities are integral to the Defense Department's MDB concept or that the Defense Department will enable the four components of the AFC-MM solution: cross-domain maneuver, semi-independent operations, integrated reconnaissance and security and realized mission command.[11] Future threats, coupled with newfound self-awareness, require the U.S. Army to make changes.

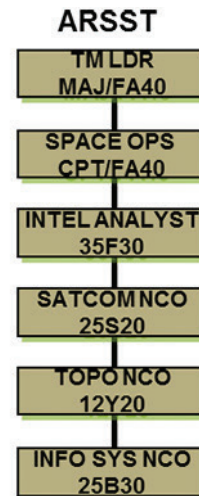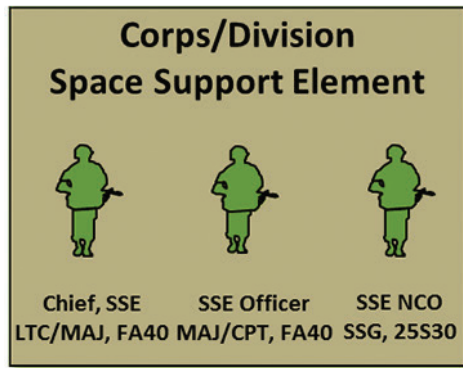The ASTS guides these efforts through training, and SMDC is also actively

Figure 3. Army space cadre at echelons above brigade. The ARSST structure is diagrammed as an example only, as it is tailorable to fit mission requirements. *(Graphic by LTC Coley D. Tyler)*

engaged in concept-to-capability development of potential capabilities across doctrine, organization, training, materiel, leadership, personnel, facilities and policy for the force as well.

In the past, the Army was primarily a receiver of space capabilities owned and operated by other services. Emerging doctrine in MDB is an opportunity for the U.S. Army to become more of a provider of effects. Imagine a BCT commander being able to plan, coordinate and employ space effects from a space battalion in the same fashion as he/she would employ a fires battalion in direct support with priority of fires. This formation hypothetically could have high-altitude airships with interchangeable ISR, SATCOM, PNT, MW or fires payloads capable of providing real-time responsive effects for the maneuver commander. Or perhaps this unit is equipped with retrievable-payload-carrying balloons or small satellites to provide diverse capabilities dedicated to tactical formations without reliance on national assets.

The possibilities are extensive, and options exist even in a fiscally constrained environment. Maneuver leaders owe it to their profession and their Soldiers to create the demand signal for the space community on how best to support. Leveraging space at brigade-and-below echelons is in a crucial stage of development. MCoE's Capability Development Division is pushing the envelope on space integration with the multi-domain task force to execute

cross-domain maneuver and employ cross-domain fires, as well as to fill gaps in obscuration across the entire electromagnetic spectrum with the U.S. Army cross-domain obscuration strategy.

The nature of warfare is changing, and the question is: "Does the U.S. Army take the initiative and shape the change, or just hold on for the ride?"

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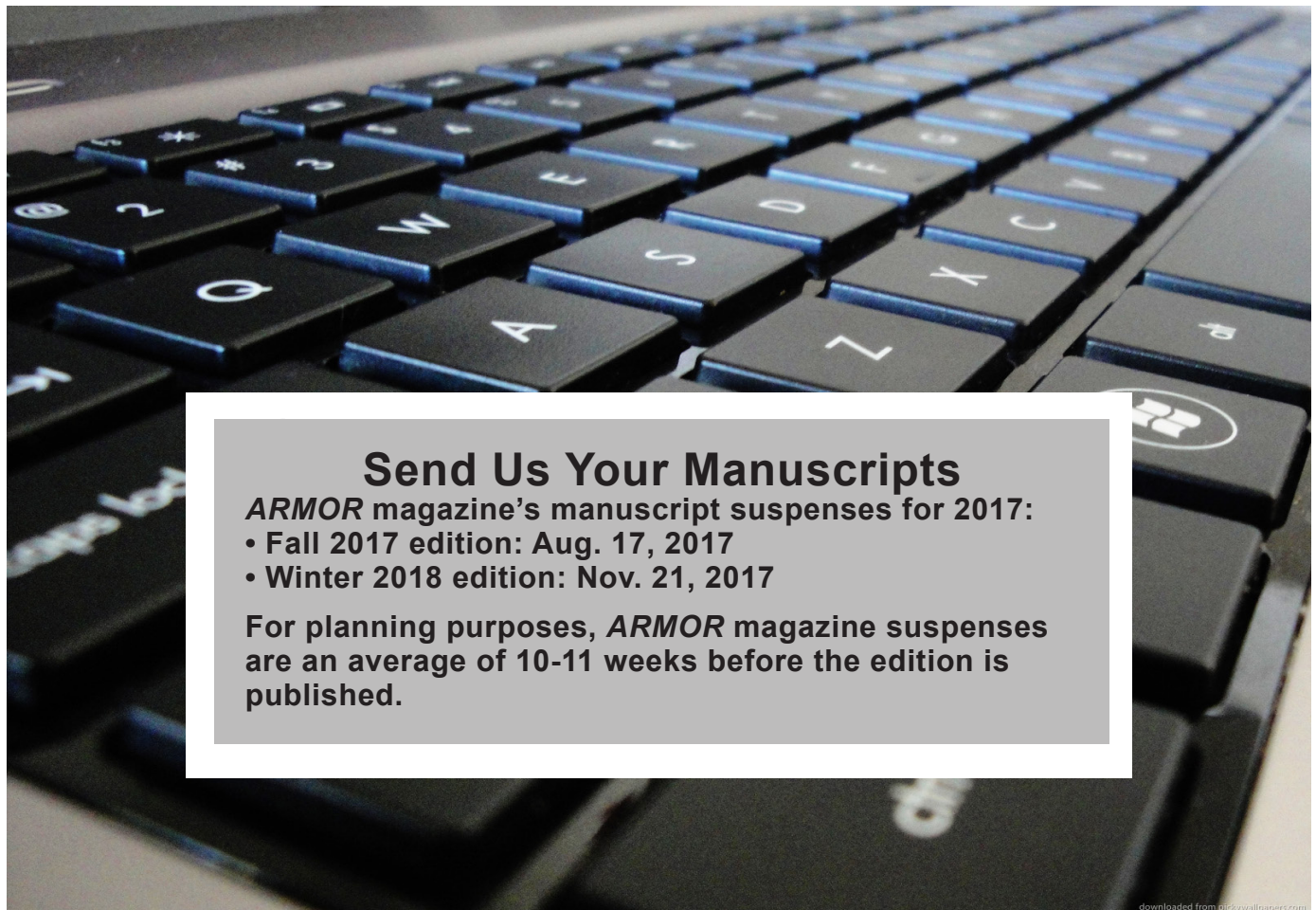[0] CAC, D3SOE task order, 2017.

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Missed Opportunities: How Stryker Brigade Combat Teams are Misusing Organic Signals Intelligence, Electronic-Warfare Capabilities

by CPT Elena Cherepanova

The *Universal Brigade Combat Team (BCT) Cavalry Squadron Organizational and Operational Concept* defines the cavalry squadron as "a combined-arms formation which employs movement, direct and indirect fires, information-collection capabilities [and] joint enablers, and reports using mission-command systems to develop the situation."[1] But do BCTs employ all their organic capabilities to their maximum potential and enable squadrons to do all the preceding?

Squadrons must continuously develop situational understanding for the entire Stryker brigade combat team (SBCT) while protecting the main body to prevent it from fighting at a disadvantage and, overall, to facilitate winning the war. The BCT has an incredible set of capabilities – electronic attack (EA), electronic support (ES) and direction-finding – to help the mission. Moreover, better integration of electronic warfare (EW) and signals intelligence (SIGINT) capabilities into the squadron will enhance the cavalry's ability to develop situational understanding for the brigade commander.

This article identifies the problem with current integration of organic SIGINT and EW assets, proposes a solution for the squadron to better develop situational understanding and recommends tactics, techniques and procedures (TTP) for optimal employment.

Problem
SBCTs misuse and underuse EW personnel and assets. Currently, the SBCT controls the EW plan and execution at the operational level, so electronic-warfare officers (EWOs) at lower echelons become message carriers rather than implementers and advisers to their commanders. In many cases, they are viewed only as another person to carry out unrelated details such as ammunition pick-up, radio-transmission operation, entry-control-point duties, etc. Unfortunately, battalion and squadron EWOs do not possess the equipment to train on or enough personnel to push down to platoon and squad levels; squadrons possess only one staff sergeant (E-6) and one sergeant (E-5) to plan and implement all EW operations.

When it comes to SIGINT, most company and troop commanders do not understand how to use low-level voice intercept (LLVI) teams effectively, or they neglect them entirely. With a high operational tempo, administrative tasks, planning operations and time constraints, it is difficult for the commander to include additional assets. In the same way, squadron staffs fail to properly integrate SIGINT capabilities into maneuver plans. Planners do not understand the capabilities and restrictions and, as a result, fail to implement this significant asset. After all, it is human nature to ignore things we do not understand.

Furthermore, commanders are task-organizing teams to infantry battalions even though there is no immediate need for EWOs or LLVI teams in their mission set. The infantry's primary job is to close with and engage the enemy; their movement has to be rapid and forceful. Unfortunately, LLVI and EW equipment is limited when it comes to freedom of maneuver because Soldiers can't effectively collect and engage with it on the move. By the time they are able to engage, it is too late. For this reason, cavalry squadrons must be the primary implementers of LLVI and EW systems.

Solution
The cavalry squadron's focus is to gain and maintain contact with the enemy; they are the eyes and ears of the battlefield. Scouts are trusted not only to find the enemy but also with the employment of direct fires at the squad and platoon levels. The BCT commander relies on scouts to shape a tactical and operational response so he can optimally deploy the infantry. EW and LLVI technology add to the reconnaissance fundamental to maintain contact before, during and after operations, facilitating the targeting process.

The inherent limitation of EW and LLVI capabilities (limited operational range and terrain restrictions) fits ideally with squadron missions. The squadron is the first to deploy and the last to leave. Scouts naturally find the terrain that is the most advantageous, which is the perfect placement for the EW and LLVI teams. All systems are able to collect on the move and will not interfere with squadron operations. Teams can be embedded with the mounted and dismounted elements, and they can operate out of Strykers. Electronic reconnaissance will enable the troops on the ground and the squadron commander to maximize their collection efforts while maintaining freedom of maneuver.

To win the war, we must maximize assets rather than rely on higher-echelon assets that will be task-organized only for limited periods. To do so, leaders must pull all EWOs out of the battalions and create tactical EW teams in the same manner as LLVI teams. LLVI teams are comprised of two- to three-Soldier sections that can be task-organized when the mission requires it. These teams belong to the military-intelligence company (MICO). The MICO's mission-essential task list (METL) includes performing intelligence, surveillance and reconnaissance, and providing intelligence support to targeting. In the same way, EW teams have to belong to the MICO to fulfill the same METL requirements and to maximize their capabilities. Teams will be under a noncommissioned officer in charge (NCOIC), who will be positioned at the squadron and act as the link between the teams and the brigade EWO. Separated from the battalion, the teams and NCOIC can focus on continuous training to maintain their skills. Furthermore, LLVI and EW teams can train together to conduct offensive,
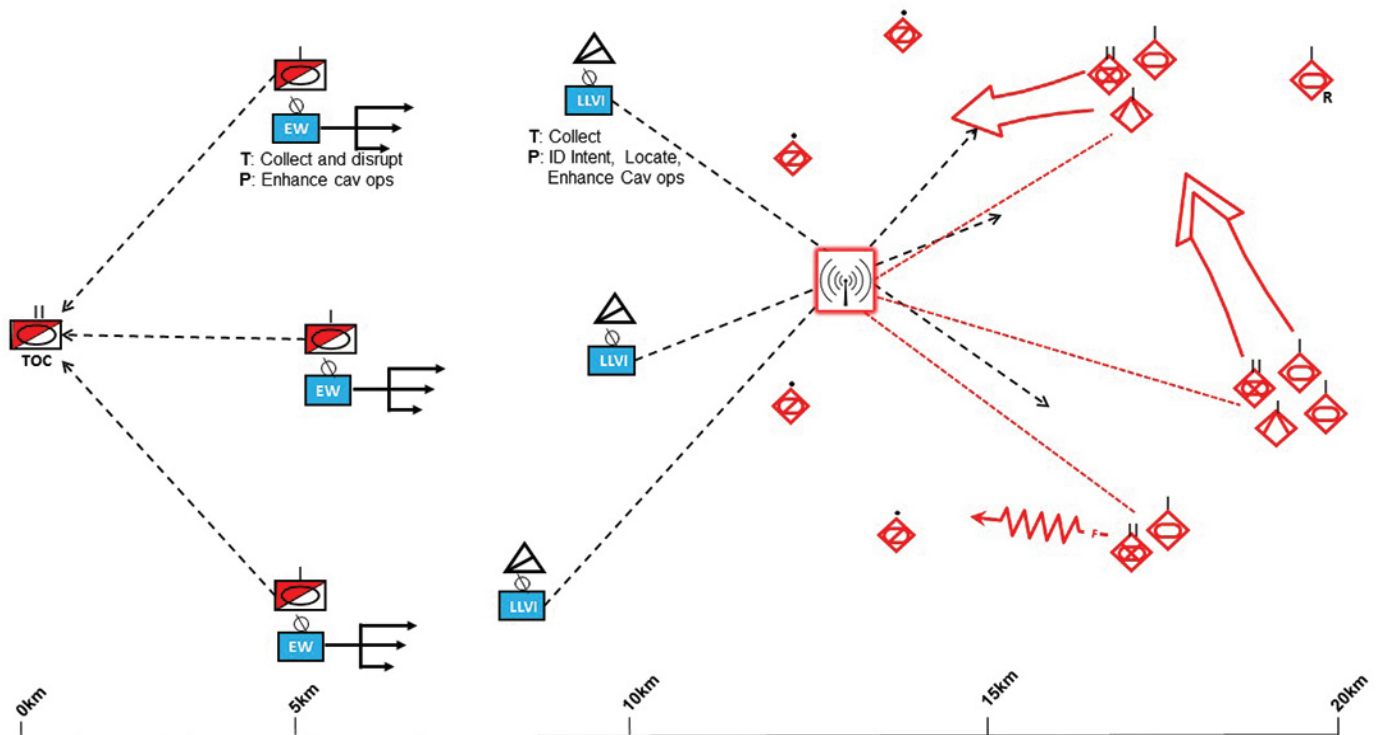
Figure 1. LLVI and EW doctrinal template.

defensive and collection tasks.

Finally, squadron S-2s should attend a school to certify as military-occupation specialty 35G, a SIGINT/EWO. Most S-2s are young, with limited intelligence experience and understanding; some of them are branch-detailed. Squadron S-2s must be the subject-matter expert (SME) during the planning and execution process to deploy assets and continuously educate commanders on the capabilities of EW and LLVI.

Recommended TTPs

To optimally integrate LLVI and EW capabilities within the SBCT at squadron level, commanders must embed teams with the S-2 during the military decision-making process (MDMP), deploy LLVIs with scout observation posts (OPs), integrate EW with dismounted or mounted teams and invest in new technology (Figure 1).

During the planning process, squadrons must imbed EW and LLVI teams with the S-2 section. This maximizes the output of Step 3 of MDMP, where the S-2 and S-3 join forces in course-of-action (CoA) development. What is better than the SMEs having a voice in the mission plan? Also, those EW and LLVI teams gain full awareness of what

the elements on their right and left are doing, not to mention putting faces to the people on the ground to build trust within a team.

LLVI systems are sensitive in nature and have to be imbedded with dismounts at OPs. LLVI provides commanders with force protection, early warning and target acquisition. During mission analysis, the S-2 team conducts a detailed terrain analysis by surveying for ideal OPs. They also provide line-of-sight products that identify the equipment capabilities and limitations of the squadron and LLVIs. To provide detailed and accurate collection, LLVI teams require less than 10 minutes to set up. With the set OP, they observe enemy locations, intercept communications, analyze traffic and disseminate intelligence.

One of the most exclusive tasks LLVI teams provide is communications intelligence (COMINT). COMINT gathers any communication from enemy emits to identify and further define the enemy's intent. The teams set up in the same manner as OPs and can sustain and secure themselves.

To maximize their effectiveness, squadrons must imbed EW teams with mounted or dismounted elements.

These teams do not require a specific setup. Mounted EW teams place their antenna on a Stryker and conduct operations, while dismounted EW teams conduct missions independently without need for additional platforms. Tactical EW provides EA and ES to include early warning, collection and direction-finding.

Successful employment of EA allows the squadron to separate enemy formations and command-and-control elements through jamming, thus forcing the enemy to switch to targetable frequencies, deploy forces early, delay their movement or change its CoA. "Encouraging" the enemy on what frequencies to use reduces its ability to effectively use the electromagnetic spectrum (EMS) and focuses LLVI to determine the enemy commander's intent while continuously painting the enemy's common operating picture for commanders throughout the SBCT. Through EMS usage, the S-2 is able to cross-reference frequencies of interest to confirm/deny and identify the type of equipment the enemy is using. Moreover, the S-2 will be able to determine which elements are in the disruption, battle and support zones, and which CoA the enemy is employing.

ES operations identify the enemy's EM

	Low-level voice intercept	Electronic warfare
Primary use	Collection asset	Weapon asset
Mission	Find and intercept enemy communications and determine enemy's intent	Identify and locate emitters to support communications jamming
Output	Collects all communications data to provide analysis	Collects data to determine enemy's equipment to conduct jamming
Capabilities	Early warning	Electronic attack
	Force protection	Electronic support
	Communications interception	Frequencies interception
Target acquisition		

Table 1. LLVI vs. EW.

equipment's and systems' vulnerabilities. A single EW or LLVI team can provide a line of bearing, indicating the direction of the signal and emitters. Adding two more teams provides the accurate geolocation of the enemy and allows for the scouts to get "eyes on" the enemy to ultimately identify high-value target lists/high-payoff target lists and answer the commander's priority intelligence requirements. ES allows the squadron to detect frequencies at greater ranges, provide real time early warning of the enemy deployment status and increase our reaction time while augmenting the squadron's security tasks.

The SBCT must invest in new EW and SIGINT technologies. Paul McLeary, a foreign-policy senior reporter covering the U.S. Department of Defense's and national security issues, once said, "American military officials are being forced to admit they're scrambling to catch up to [EW] capabilities that Russia possesses."[2] He is not wrong. Currently, we have people, but where is the equipment? No one knows. The equipment that exists for the U.S. Army is extremely outdated and is sitting somewhere on shelves, just like the skills of our EWOs. Meanwhile, Russia has deployed powerful and sophisticated EW equipment into the countries of Georgia, Ukraine and Syria to disrupt those governments' means of communication and coalition operations.

Will it turn into another fight in which the U.S. Army is reactive and scrounges to find countermeasures? Or do we need to maximize our efforts to conduct active electronic collection and plan and train for electronic offensive operations?

The Army must invest in new technology. In Fiscal Year 2016, only $12.69 million of the U.S. Army's budget of $127 billion was requested to fund EW development.[3] "If you go to a unit today in the Army and you say, let me see your '[EW] equipment,' and you go to the EWO and he opens up his wall locker, it's empty,"[4] said COL Jeffrey Church, the Army's senior EW officer in 2015. If the Army wants to conduct offensive EW operations, it relies on borrowed assets from the Navy. An offensive jamming capability is not slated to enter the U.S. Army until 2023.[5]

Conclusion
In the end, EW and LLVI complement each other. Either one can find a frequency and pass it to the other while actively collecting intelligence. This facilitates the squadron's understanding of the operational environment during final planning and allows the employment of electronic fires to shape conditions for a successful fight. To facilitate EW and LLVI operations, BCT commanders must imbed teams at the squadron and troop level. The collection and scout teams must train together to synchronize and complement each other's operations and ultimately help the squadron's mission accomplishment. Without using our organic assets to their full capacity and training Soldiers in the proposed formation, it can negatively impact mission execution.

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Notes
[1] *Universal BCT Cavalry Squadron Organizational and Operational Concept*, Feb. 29, 2016.

[2] Paul McLeary, "Russia's Winning the Electronic War," *Foreign Policy*, Oct. 21, 2015; accessed April 1, 2017 at http://foreignpolicy.com/2015/10/21/russia-winning-the-electronic-war/.

[3] Exhibit R-2, RDT&E Budget: Electronic Warfare Development, *Global Security*, February 2015; accessed April 01, 2017 at www.globa.security.org/military/library/budget/fy2016/army-peds/0304270a_5_pb_2016.pdf.

[4] Sydney J. Freedberg, "Army's Electronic Warfare Cupboard is Bare: No Jammer until 2023,"*Breaking Defense*, July 20, 2015; accessed April 1, 2017 at www.breakingdefense.com/2015/07/armys-electronic-warfare-cupboard-is-bare-no-jammer-until-2023/.

[5] Ibid.

Profession of arms

• Don Higginbotham, *George Washington and the American Military Tradition* [commercial publication].

• Suzanne C. Nielsen and Don M. Snider, *American Civil-Military Relations: The Soldiers and the State in the New Era* [commercial publication].
American Civil-Military Relations offers the first comprehensive assessment of the subject since the publication of Samuel P. Huntington's field-defining book, *The Soldier and the State*.

Institutional development

• Bruce Godmundsson, *On Armor* [commercial publication].
Overview of evolution of combined arms organizations from World War I through Cold War; analyzes combined arms teams from a multi-national perspective, including the United States.

• George Hofmann and Donn Starry (eds), *Camp Colt to Desert Storm* [commercial publication].
Anthology that includes set of articles devoted to principal eras in Armor Branch history; includes chapter on U.S. Marine Corps armor development.

• Robert S. Cameron, *To Fight or Not to Fight?* [CSI publication].
Overview of doctrinal and organizational trends related to reconnaissance organizations and related issues; provides context for understanding current state of cavalry/recon.

• John J. McGrath, *Scouts Out!* [CSI publication].
Overview of reconnaissance organizations in modern armies; multinational

Recommended Reading for Professional Development

Listed by general subject rather than command echelon

perspective.

• Robert S. Cameron, *Mobility,* **Shock, and Firepower** [CMH publication].
Provides context for understanding the early development of the Armor Branch and its evolution from a platform-centric orientation into a set of unique capabilities amid the constraints of organizational precedents, budgetary limitations and uncertainty RE the capabilities of new technology.

• Martin L. Van Creveld, *Supplying War: Logistics from Wallenstein to Patton*; 2nd Edition [commercial publication].
A second edition of this classic work, commenting on the role of logistics in warfare.

• John Stone, *The Tank Debate: Armour and the Anglo-American Military Tradition* [commercial publication].
Analysis of tank development from World War II to 2000 with focus upon shaping factors and technology limitations; multinational perspective.

• National Training Center Operations Group, *Training for Decisive Action: Stories of Mission Command* [CSI publication].

• Scott C. Farquhar (ed), *Back to*

Basics: A Study of the Second Lebanon War and Operation Cast Lead [CSI publication].
Chronicles the Israeli Defense Force's efforts to identify and apply lessons learned from 2006 to operations in Gaza; and transition from counterinsurgency-centric orientation toward a more traditional combined-arms approach, not unlike current shifts in U.S. Army in the last few years.

Platform development

• David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917-1945* [commercial publication].
Johnson examines the U.S. Army's innovations for both armor and aviation between the world wars, arguing that the tank became a captive of the conservative Infantry and Cavalry Branches, while the airplane's development was channeled by airpower insurgents bent on creating an independent air force.

• Orr Kelley, *King of the Killing Zone* [commercial publication].
Highly readable overview of the development and fielding of the Abrams tank.

• Blair W. Haworth, *The Bradley and How it Got That Way* [commercial publication].
Overview of the Bradley Fighting Vehicle and the factors influencing its development; also provides contextual understanding of mechanized infantry evolution.

• Mark J. Reardon and Jeffery A. Charlston, *From Transformation to Combat: The First Stryker Brigade at War* [CMH publication].

Scouts Fashion Victory in Gainey Cup Competition

by CPT Patrick M. Zang and CPT John L. Albert

"Effective reconnaissance and security [R&S] tasks confirm or deny the commander's and staff's initial understanding and visualization of the tactical and operational situation and further develop the intelligence picture for the [brigade combat team (BCT)] to allow the commander to describe, direct, lead and assess military operations as well as make effective decisions." – *Field Manual (FM) 3-98, **Reconnaissance and Security Operations**, July 2015*

Competition overview

The third biennial Gainey Cup Best Scout Squad Competition, named in honor of retired CSM William "Joe" Gainey, the first senior-enlisted adviser to the Chairman of the Joint Chiefs, took place at Fort Benning, GA, May 1-4. The competition featured 24 six-man scout squads from our allies and across the U.S. Army. Three Army National Guard (Illinois, West Virginia and Nevada) and four allied partners (two teams from Canada, one from the Netherlands and one from the United Kingdom) competed alongside 17 teams representing active Army divisions and separate brigades.

Within the context of the competition, a scout squad was defined as a squad leader in the ranks of staff sergeant to first lieutenant, a team leader in the ranks of sergeant or staff sergeant and four scouts in the ranks of private to sergeant. This rank structure and organization aligns with Special Manual (SM) 3-20.96, ***Cavalry Squadron Universal Operational and Organizational Concept Volume III, The Standard Scout Platoon (6x36)**,* February 2017. Paragraph 3-38 of SM 3-20.96 states that "the scout squad consists of six personnel and one reconnaissance vehicle."

The competition design focused on reconnaissance and Soldier skills that atrophied in the midst of the global war on terror. With a reinvigorated approach to R&S operations, the Gainey Cup stresses the importance of area reconnaissance, route reconnaissance and the establishment of an observation post focused on answering the commander's priority intelligence requirements within the constraints of "latest time information is of value." The competition further challenged scouts through the evaluation of common tasks such as land navigation, call for fire, medical skills and chemical, biological, radiological and nuclear (CBRN) events. To add physical stress to the mental aspect of the competition, a 22-station obstacle course as well as two running events bookending the competition stressed competitors.

The competition scoring used a weighted-scale concept, prioritizing critical R&S tasks over sheer physical fitness. The most heavily weighted event in the competition was the area-reconnaissance lane. The weighted grading concept was a takeaway from the inaugural Gainey Cup in 2013. Weighting competition events ensures that a well-rounded scout squad wins the competition.

The competition was close throughout, with four teams consistently in the running for the Best Scout Squad: 1-1 Cavalry Squadron from Fort Bliss, TX; 6-8 Cavalry Squadron from Fort Stewart, GA; 2-106 Cavalry Squadron from the Illinois Army National Guard; and 104th Reconnaissance Squadron from the Netherlands. However, on Day 4 with just the "final charge" remaining, only 1-1 Cavalry and 6-8 Cavalry were mathematically in contention for the Gainey Cup championship. Ultimately, 1-1 Cavalry consisting of SSG Eric Atkinson, SGT Zachary Diglio, SGT Joseph Main, PFC Timothy Wood, PFC Ryan French and PV2 Jeremy Blevins won the competition.

After-action review

The 2017 Gainey Cup Best Scout Squad competition provided a useful metric to evaluate the state of R&S training at the level of tactical execution – the scout squad – throughout the force. The 24 teams who competed in the event represented Active, Army National Guard and allied formations. (The Active Component represented each force structure: armored BCT, Stryker BCT and infantry BCT.) While the competition did not control for all variables, each team did participate in the same events that paired fitness with -10 level tasks. They also competed under the same terrain, weather and light conditions with the same equipment, evaluated against the same standardized training and evaluation outlines.

The 2017 Gainey Cup differed slightly from the 2015 version. A squad stress shoot was added, while hasty demolitions and "establish a helicopter landing zone" were removed. Moving forward to the 2019 competition, a wholesale overhaul of the concept of operations isn't expected. The 2017 competition, like the 2013 and 2015 versions before it, captured lessons-learned, particularly those identified by the competitors themselves.

The following will serve as an event breakdown in those areas deemed to contain capability gaps not only in the competing squads but in identified shortfalls in the larger Army as a whole.

Land navigation. Competitors performed unevenly conducting unaided land navigation across broken terrain. Only three of 24 teams successfully located all three points over a six-hour period of darkness on the land-navigation lane. Six teams were unable to locate any points. Some teams struggled with unaided navigation of less than one kilometer in a variety of environments. It became readily apparent that certain teams consisted of individuals lacking the personal experience of a non-self-correcting land-navigation

course. For others, land navigation had not been practiced since basic training. Skills such as G-M angle conversion, intersection, resection and terrain association – the core of land navigation – did not appear to be internalized and "trained" by most of the competitors.

This is disconcerting, as the Gainey Cup reflected the probable battlefield occurrence of a cyber-electromagnetic-activity denied environment. Satellite-enabled position tracking may be contested, spoofed or denied by a modern threat actor. The competition reflected the likely loss of technical assistance, requiring teams to navigate without Global Positioning System (GPS) or electronic aids. Instead, teams were forced to employ the basic land-navigation tools of map, compass and protractor throughout all lanes during the competition. To build this capability, home-station training should be designed to and deliberately use electronic-warfare assets against the respective unit's ability to use GPS devices (either Army-issued or personal).

Unit training should address requirements for conducting land navigation across varying conditions in a tactical environment. A first step is to get the land-navigation manual off the computer and into scouts' hands. Training Circular (TC) 3-25.26, *Map Reading and Land Navigation* (November 2013), represents a repository of best practices for the science of land navigation. It includes sections on individual and unit training plans. Not infrequently, an Army Reconnaissance Course (ARC) or Reconnaissance and Surveillance Leader's Course (RSLC) student will ask an instructor where he learned a particularly successful navigation technique, only to find the instructor opening to a page in TC 3-25.26. Doctrinal techniques work!

Also, training should routinely occur on land the scout has not operated on previously. The disorientation that naturally occurs to an individual in terrain never before experienced needs to be replicated in training. Orienteering in state parks or other accessible unfamiliar terrain could be an option for incorporation into training plans. Together these techniques can assist scouts in becoming more confident navigating without technical aids.

Vehicle identification. Competitors struggled to correctly identify military vehicles. Overall, competitors correctly identified only 18 percent of vehicles presented. The modern battlefield will likely include multinational forces operating with an array of military vehicles. Military ground and air vehicles from Israel, Germany, China, Japan, Korea, India, France, South Africa, the United Kingdom and Brazil, among others, will join common American and Russian vehicles on the battlefield. Scouts may have seconds to identify and react. The proliferation of friendly and threat unmanned aerial systems further exacerbates this difficulty.

This year's vehicle-identification lane took on a different-than-usual approach to the Army's traditional computer-based methodology in teaching and evaluating vehicle identification. An observation post (OP) was built with 12 vehicles placarded to wooden stakes at distances of 15 to 25 meters from the OP. Competing teams had standard M22 binoculars and a spotting scope to choose from to aid them in the task's completion. This easy-to-replicate environment can be more value-added to today's scouts. While computer-based training such as Recognition of Combat Vehicles (ROC-V) is a phenomenal foundational approach, moving training beyond "what we've always done" and thinking outside the box in exciting and challenging ways is the best way to engage a Soldier in the 21st Century. One of the underlying principles in lane creation at the 2017 Gainey Cup was the ability for the competitors, coaches and respective command-team representatives to easily, and in a resource-constrained environment, take the competition events back to home station.

Training should also address the growing diversity of battlefield equipment if scouts are to be successful in rapidly and accurately providing battlefield information to the commander. This can be a daunting task. Initial training in this area should start with the development of methods for identifying vehicles. For example, a common method in identifying vehicles is use of the acronym HATS (hull, armament, turret, suspension). Training scouts to methodically evaluate vehicles and

equipment enables them to adapt as equipment changes over time. It also applies systematic analysis to what otherwise becomes a very haphazard "guessing game."

Also, there are some tools available to the unit to assist with vehicle-identification training. The Army maintains the ROC-V Website at https://rocv. army.mil. The Website takes individuals through the basics of thermal optics and using visual cues, and introduces a large number of friendly and threat ground and air vehicles. A similar tool can be accessed from the Joint Battle Command Platform console in Army vehicles that have received that platform.

Finally, many units commit the "sin" of minimizing the vehicle-identification component of gunnery training. TC 3-20.21-1, *Individual and Crew Live-Fire Prerequisite Testing*, requires crew members to correctly identify 18 of 20 vehicles and all U.S. vehicles, with at least four of the vehicles being identified using only thermal signatures. Occasionally, this becomes a slideshow drill where the master gunner familiarizes the crews with the slides and the test follows rapidly thereafter. While this may meet prerequisites, it does not assist our scout crews or dismounts in the incredibly complicated task of combat-vehicle identification. Options to improve gunnery vehicle identification include permitting more vehicle types in the conduct-of-fire trainers, building mock-ups or using different slide decks between practice and testing.

Call for fire. It is a matter of faith that the scout's best weapon is his radio. In reality, it is the lethality provided through fires at the observer's command that gives the scout the ability to have a disproportionate lethal impact on the battlefield. However, competitors performed unevenly in completing an accurate and timely call for fire. As with land navigation, competitors were forced to employ the basic tools of map, binoculars, compass and protractor. These basic tools proved uncomfortable for competitors.

Scouts have been empowered with position navigation-enhanced laser range-finders and digital integration. From the Long-Range Advanced Scout

System to the Lightweight Laser Designator Range-finder and M2/M3 Bradley call-for-fire quick message, scouts have been enabled to initiate and receive precise, accurate and timely fires. We're not saying scouts shouldn't use these tools; the efficiency and precision created should continue to be maximized when possible. However, since the likelihood of a threat actor spoofing or denying these systems is high, expertise in the high-end capability cannot come at the expense of the scout's basic ability to employ fires.

Target-location error (TLE) greater than 250 meters accounted for more than half of competition deductions. Army Technical Publication (ATP) 3-09.30, **Techniques for Observed Fire** (August 2013), notes that while 250-meter TLE is the mean for observers employing map, binoculars and compass, it is unacceptable for first-round fire-for-effect mission or target suppression. Several competitors misestimated the range to the target in excess of two kilometers. Upon debriefing, many proved unfamiliar with the mil-relation formula (commonly called the WORM formula), which enables an observer to determine range if known-size equipment is present. While we note that a live event vice a virtual event is more substantive training, on the whole, competitors did not blame the simulator or their unfamiliarity with the system for their shortcomings.

A second large source of competition deductions was the inability to initiate the call-for-fire within three minutes after being given a five-minute block of time to conduct familiarization with the map and simulator screen.

Unit training can start with getting ATP 3-09.30 into scouts' hands. In particular, Chapters 3, 4 and 5 provide in-depth discussion of locating, initiating and adjusting timely and accurate fires. Beyond this initial step, an easy point of departure may be borrowing training plans from the annual brigade forward observer (FO) certification. It may not be possible to replicate the depth of full FO training; however, scouts must approach the same level of observed-fires capability. Copying those who hang their hat on providing timely and accurate observed fires seems a good idea.

Actions on contact. Scout success and survivability is tied indelibly to minimizing and managing signatures. Employment of stealth as a necessary tool of the trade does not mean that scouts do not or cannot develop the situation through contact with enemy forces. In fact, many situations will require developing across the forms of contact to gain more and better information. As sensors proliferate on the battlefield, the need for scouts to fight for information grows, not declines. During the Gainey Cup, competitors struggled to execute meaningful actions on contact. When chance or deliberate enemy contact occurred during reconnaissance or live-fire events, some squads appeared uncertain how to develop the situation. In particular, competitors failed to apply engagement and disengagement criteria. Though lane fragmentary orders included commander's reconnaissance and/or security guidance, many competitors confessed to not understanding, never having heard of or never been taught its use. To execute the mission, scouts need clearly defined and understood guidance.

The Army employs scouts to turn ambiguity into definitive information. However, scouts should initiate and react to contact intuitively. Unit training should include the requirement for scouts to develop contact through all training events. The best weapon may be the radio, but the M240L is on hand for a reason. Training actions on contact may take the form of opposing OP occupation during a situational-training exercise. Likewise, ambiguity should be brought into live-fire training events. While safety will remain important, forcing crews, squads and platoons to think through the enemy presentation to properly employ engagement criteria will pay off in improved decision-making and confidence later. It further translates to the scout's ability to generate options and make recommendations.

The ability to generate options only remains if you survive first contact with the enemy, retain freedom of maneuver and develop the situation. All these benefits accrue from scouts empowered and understanding solid commander's R&S guidance.

Way forward

It is evident that a knowledge gap exists in the Army today, so scouts should read the Center for Army Lessons Learned (CALL) Handbook 17-01, **Scouts in Contact: Tactical Vignettes for Cavalry Leaders** (December 2016), and CALL Handbook 17-12, **Reconnaissance and Security Commander's Handbook** (April 2017). These two publications, focused on leaders at the section through brigade level, provide useful quick-reference pocket guides to train and educate leaders. Whereas the **Scouts in Contact** manual provides many tactical-decision exercises requiring nothing more than a sandtable and/or whiteboard, the **Reconnaissance and Security Commander's Handbook** is a synthesis of useful doctrine (FM 3-98, **Reconnaissance and Security Operations**; FM 3-55, **Information Collection**; ATP 3-20.96, **Cavalry Squadron**; FM 3-20-2, **Reconnaissance and Security and Tactical Enabling Tasks Volume 2**, among others).

The two CALL handbooks are a starting point for increased proficiency in cavalry operations. Leaders should regularly reach out to the combat-training centers (CTCs), to the schoolhouse (RSLC, ARC and the Cavalry Leader's Course (CLC)) and to the Army Publishing Directorate (apd.army.mil), to ensure that the latest doctrine and tactics, techniques and procedures (TTPs) are available to our respective formations.

Learning is a lifelong event. According to U.S. Army Training and Doctrine Command (TRADOC) Pamphlet 525-8-2, **The U.S. Army Learning Concept for Training and Education 2020-2040** (April 2017), "The objective of Army learning is to provide forces as part of joint, interorganizational and multinational efforts that are trained and ready to accomplish campaign objectives and protect U.S. national interests. To achieve this objective, the Army will create and maintain a learning environment that develops agile, adaptive and innovative Soldiers and Army civilians, [building] cohesive teams that conduct training and education under tough and realistic conditions. This environment is centered on the learner (learner-centric), who learns through a combination of

training, education and experience through the three training domains of Army learning: operational, institutional and self-development." This model is based on a series of assumptions, but arguably none are more important than "The learner-centric, career-long learning model will produce the training and education outcomes to sustain Army effectiveness and ethical application of the Army profession."

As we mentioned previously, the Gainey Cup was built off doctrine as the means to evaluate and grade competitors. Doctrine is the baseline for the U.S. Army. Doctrine is the language by which the U.S. Army communicates. Words mean things, and as one of the authors' former squadron commanders stressed while he served as an assistant S-3 and troop commander, we must use "precise terms used precisely" so as to avoid confusion, particularly in stressful environments. One must first understand the baseline (doctrine) before he attempts the hip-pocket approach (TTPs). Too many times it is heard around Fort Benning, the home of maneuver doctrine and foundational training, "that is how I did it in my unit." Point blank, that is an unacceptable answer. Avoiding shortcuts, reading doctrine and committing to the elusive self-development domain of the Army learning methodology is a relatively easy starting point for increased understanding and subsequent capacity to execute successful R&S operations.

Conclusion
The reader should not walk away from this article with the belief that the tactical and technical expertise of the 24 competing teams was below average or that the Gainey Cup has identified gaps requiring wholesale re-evaluation moving forward. The competitors demonstrated proficiency in their ability to establish OPs and conduct evaluation and evacuation of casualties. Competitors in the 2017 Gainey Cup improved vastly on their peers in the 2015 competition in their understanding and execution of route-classification tasks and of CBRN decontamination and reporting procedures.

The 2017 Gainey Cup acted as a signpost on the road to recovering scout ability; as such, clear improvement was seen but much work lies ahead. The competitors demonstrated a lack of proficiency in some of the core reconnaissance tasks (land navigation, calling for indirect fire and vehicle identification). A cavalry scout who cannot navigate, cannot call for fire and cannot correctly identify a vehicle on the battlefield is nearly useless to commanders. The authors also can attest to similar gaps from their time in command of cavalry troops.

Many of the capability gaps identified in this article can be addressed through Sergeant's Time Training. Training in these fundamental skills costs few resources and little additional time if incorporated into a regular training program that focuses on building and sustaining skills. Sergeant's Time is just such a recurring event.

In conclusion, the Gainey Cup will continue to move forward, capturing lessons-learned and best practices from this year's competition and striving to make the 2019 competition better than the 2017 competition. However, it is more imperative that the operational Army captures these lessons-learned and reaches out to the institutional Army and the CTCs for ways to execute innovative and effective training. The proof will be in the pudding: are we as an Army comfortable with merely coming together every two years, trying to prove our worth in the Gainey Cup, or will leaders at the highest echelons place emphasis on R&S operations? Will lessons highlighted by the Gainey Cup be taken back and improved on by junior leaders at installations across the U.S. Army and by our allied partners?

The 144 competitors in the 2017 Gainey Cup represented the very best of the Army and its future. Are your scouts up to the test? What will they be working on in the meantime?

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Figure 1. A team member from Team 5, 1-1 Cavalry, 1ˢᵗ Armored Division, assembles/disassembles a machinegun during the competition's "final charge" event. Team 5 was named the Army's newest Best Scout Squad on the final day of the 2017 Gainey Cup competition May 1-4. *(Photo by Markeith Horace, Maneuver Center of Excellence Public Affairs Office photographer)*

Figure 2. A team member from second-place finisher 6-8 Cavalry, 3ʳᵈ Infantry Division, checks a radio during the Gainey Cup's "final charge" event. Scout squads competed on a soggy, rainy day in the "final charge," a "gut check" that tested the squad's ability to complete a 2.78-mile run, followed by seven tasks executed on Brave Rifles Field, Fort Benning, GA. Twenty-four scout squads competed. The Gainey Cup is named in honor of retired Army CSM William J. (Joe) Gainey. *(Photo by Markeith Horace, Maneuver Center of Excellence Public Affairs Office photographer)*

Figure 3. Scout squads compete in an obstacle course, squad live-fire and stress shoot in the Harmony Church area of Fort Benning during the biennial Gainey Cup competition, which is designed to identify the most competent and versatile scout squad in the U.S. armed forces and partnering allies through an extremely challenging contest centered on essential R&S tasks and skills. *(Photo by Patrick A. Albright, Maneuver Center of Excellence photographer)*

Figure 4, right. A scout from 4-3 Cav, 3ʳᵈ Cavalry Regiment, observes "enemy" movement during the Gainey Cup competition. Competitors were challenged with physically and mentally challenging events centered on essential R&S tactics, techniques and procedures. *(Photo by Markeith Horace, Maneuver Center of Excellence Public Affairs Office photographer)*

Figure 5. A competitor from the United Kingdom's Queen's Dragoon Guards low-crawls during the Gainey Cup competition's obstacle course. *(Photo by Markeith Horace, Maneuver Center of Excellence Public Affairs Office photographer)*

Enabling Mission Command through Cavalry Squadron Operations

by MAJ R. Perry White

Cavalry squadrons shape the brigade combat team (BCT) fight. They conduct reconnaissance and security (R&S) to enable adjacent units to seize, retain and exploit the initiative. Effective employment of cavalry squadrons, however, is a highly complex endeavor. To overcome this, commanders must leverage mission command and facilitate shared understanding that enables rapid initiative through clear intent and orders.

GEN David G. Perkins, former commander of U.S. Army Combined Arms Center and now commander of U.S. Army Training and Doctrine Command, addressed the students of the Maneuver Captain's Career Course in April 2014 to discuss mission command and leader development. In his opening comments, GEN Perkins said, "When you are in charge of an organization, it is not about what you do but what you are for."[1] In the Army, we conduct unified land operations (ULO), which describes how we seize, retain and exploit the initiative to gain and maintain a position of relative advantage through simultaneous offensive, defensive and stability operations to prevent or deter conflict, prevail in war and create the conditions for favorable conflict resolution (from Army Doctrinal Publication (ADP) 3-0).

As we discuss mission command and how it pertains to cavalry squadrons, it is important to understand "what we are for."

What are we for?

Summarized from Field Manual 3-98, R&S operations are essential to effectively execute ULO. BCTs conduct R&S operations to develop the situation and to identify, create and preserve options to seize and exploit the initiative. R&S tasks allow BCTs to achieve positions of relative advantage by confirming or denying initial assumptions of the tactical and operational situation. They reduce uncertainty by allowing the commander to describe, direct, lead and assess operations to make decisions. Cavalry squadrons, along with other brigade information-collection (IC) assets, provide a continuous flow of information that make contact (visual; obstacles; direct; indirect; aircraft; chemical, biological, radiological and nuclear; non-hostile and electronic warfare) with enemy elements under favorable conditions. They identify opportunities, prevent surprises and enable brigades to make timely decisions while providing reaction time and maneuver space to set conditions for future operations.

Further, employment of reconnaissance assets reduces uncertainty, especially when used for reconnaissance push and pulls. A reconnaissance push occurs when commanders have a relatively thorough understanding of the operational environment. In these cases, commanders "push" reconnaissance assets into specific portions of their areas of operation to confirm, deny and validate planning assumptions. A reconnaissance pull occurs when commanders are uncertain of the composition and disposition of enemy forces in their areas of operation, information about terrain is vague and time is limited. In these cases, reconnaissance assets work over a broad area to develop the enemy situation. As they gain an understanding of enemy weaknesses, they then "pull" the main body to positions of tactical advantage.

What is mission command?

It is the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent, empowering leaders in conducting ULO.

Mission command guides commanders. To do this, they must leverage its six principles:

- **Build cohesive teams through trust**. *Mutual trust* is shared confidence among commanders, subordinates and partners. Effective commanders build cohesive teams in an environment of mutual trust. Trust flows both ways: leaders to subordinates and subordinates to

Figure 1. A scout competing in the May 2017 Gainey Cup "Best Scout Squad" competition low-crawls through undergrowth at Fort Benning, GA. The biennial Gainey Cup's competitors are challenged with events centered on essential R&S tactics, techniques and procedures. The Gainey Cup is a good test of reconnaissance "push" and "pull" tasks. *(Photo by Markeith Horace, Maneuver Center of Excellence Public Affairs Office photographer)*

Figure 2. Then-SPC Ty Carter conducts reconnaissance from the highest point of Outpost Fritsche in Afghanistan, where he was assigned in late Spring/early Summer 2009 with Blue Platoon, Bravo "Black Knight" Troop, 3rd Squadron, 61st Cavalry Regiment, 4th BCT, 4th Infantry Division. Cavalry units assess progress through continuous reconnaissance to help modify existing and/or developing plans to allocate BCT assets based on changing tactical situations. Unfortunately, risks in cavalry employment's basic principles were underestimated when Carter and his fellow Soldiers rotated in Summer 2009 to Combat Outpost Keating, which sat on low ground in the valley below and was nearly overrun Oct. 3, 2009. (Carter's actions during that battle resulted in his being awarded the Medal of Honor.) *(Photo courtesy of retired 1SG Jonathan Hill)*

commanders.

- **Create shared understanding.** *Shared understanding* and purpose form the basis for unity of effort and trust (trust implies expectations that are shared). Commanders and staffs actively build and maintain shared understanding within the force and with unified-action partners by continual collaboration throughout the operations process.

- **Provide clear commander's intent.** The *commander's intent* is a clear and concise expression of the purpose of the operation and the desired military endstate that supports mission command, provides focus to the staff and helps subordinate and supporting

commanders act to achieve the commander's desired results without further orders, even when the operation does not unfold as planned (Joint Publication 3-0).

- **Exercise disciplined initiative.** *Disciplined initiative* is action when these conditions apply: 1) absence of orders; 2) existing orders no longer fit the situation; or 3) unforeseen opportunities or threats arise.

- **Use mission orders.** Mission orders are used to assign tasks, allocate resources and issue broad guidance.

- **Accept prudent risks.** Commanders accept *prudent risk* when making decisions because uncertainty exists in all military operations. Prudent risk

is a deliberate exposure to potential injury or loss when the commander judges the outcome in terms of mission accomplishment as worth the cost (ADP 6-0). Opportunities come with risks. The willingness to accept prudent risk is often the key to exposing enemy weaknesses.

Supporting brigade commander

How does the cavalry squadron support the brigade commander in mission command? The cavalry squadron is the brigade commander's primary asset to develop the situation and provide timely information that will refine subsequent courses of action (CoAs) for the brigade's decisive operation.

The cavalry squadron improves situational understanding for the commander by providing a better understand of the tactical, human and political dynamics within an area of operation.

Cavalry squadrons help visualize operations in the context of mission variables to facilitate decisive operations in time and space with a greater degree of detail, accuracy and fidelity. Cavalry squadrons direct the execution of decisive operations with additional flexibility, adaptability, synchronization and integration that moves the BCT to concentrate strengths against enemy weakness.

Finally, cavalry squadrons assess progress through continuous reconnaissance to help modify existing and/or developing plans to allocate BCT assets based on changing tactical situations.

Mission command in R&S tasks

How does the brigade and cavalry squadron use mission command in conducting R&S tasks? Mission command enables commanders and staffs to counter the inherent uncertainty of military operations. Squadron commanders conduct R&S to protect the force and to seize, retain and exploit the initiative.

The commander sets reconnaissance priorities early since squadrons will precede main-body movement and operate with less time available for troop-leading procedures (TLP). After a brigade receives its initial warning order (warnord) from higher headquarters and publishes Warnord 1, the cavalry squadron has already begun its TLPs. Unlike most battalions, however, the cavalry squadron is operating on a highly accelerated timeline and initiates movement prior to other battalions. Therefore, brigade and squadron staffs must work closely during mission analysis to conduct parallel planning.

More importantly, the relationship and direct dialogue between the brigade and squadron commander is paramount for successful CoA development and to allocate IC assets and other enablers (artillery, aviation) appropriately. Collaboration and dialogue between brigade and squadron is essential in

developing shared understanding. After brigade commanders have an understanding of the problem, they can visualize an endstate for the cavalry squadron; describe time, space, resources (initial), purpose and action; and direct the squadron through use of mission orders (Warnord 2, Annex L).

Cavalry squadrons are unique in conducting R&S. They conduct parallel planning with the brigade, operating within broad guidance to conduct missions in front of, on the rear of and on the BCT's flanks.

Commander's intent

How does the commander's intent facilitate mission command? The commander's intent articulates the reason for an operation. It explains the expanded – or, in other words, broader – purpose of an operation and allows subordinates to understand what is expected of them to accomplish a mission. The commander's intent becomes the basis on which staffs and subordinate leaders develop plans and transform them into action.

During the planning process, squadron commanders issue planning guidance before, during and after dialogue with the brigade commander's staff. This is usually in the form of a directed CoA with planning guidance for each warfighting function. Commanders are able to direct a CoA because of their ability to understand the problem, visualize the endstate and describe it to their staff and subordinate commanders. Though staffs may understand the final array of forces on the battlefield, they must refine the CoA, conduct CoA analysis and synchronize assets.

Guidance important

Why is R&S guidance important? Squadron commanders issue R&S guidance to allow subordinate commanders to operate with disciplined initiative. R&S guidance provides focus, operational details and guidelines for engagement, disengagement and displacement of the organization. The commander develops this guidance based on the brigade's mission, timeline and intent. Together, R&S guidance, along with the commander's intent, work to satisfy information requirements and identify opportunities

to seize, retain and exploit the initiative.

Though similar, reconnaissance guidance is different from security guidance. Generally speaking, reconnaissance guidance is geared toward offensive operations, while security guidance is used during defensive operations. R&S guidance both help develop the situation to ensure an organization can accomplish its objective. Security guidance requires more details to adequately perform the cavalry squadron's security mission.

What are cavalry squadrons for? Why are they important to the BCT? They conduct R&S to enable brigades to defeat and destroy the enemy. Their operations help commanders seize, retain and exploit the initiative. Central to this is the effective execution of mission command. Collaborative, parallel planning facilitates shared understanding to enable disciplined initiative that culminates in battlefield success for the BCT.

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Notes

[1] Address April 14, 2014; retrieved March 14, 2017, from https://vimeo.com/91292851.

New Gunnery App

A new mobile application, **Gunnery-Timer and Calculator**, is now available to aid gunnery. The app times task engagements and calculates engagement and base scores during crew gunnery on stabilized and unstabilized platforms.

The Gunnery-Timer and Calculator app features three functional tools: timer, point calculator and engagement-modifier calculator.

The gunnery timer allows you to time engagements during crew gunnery for DA Form 8265.

The point calculator allows you to calculate points acquired from up to four targets during crew-gunnery engagements and verify the total points and the engagement score on DA Form 8265.

The engagement-modifier calculator allows you to calculate and update engagement and modifier points for the modifier fields on DA Form 8265.

The app was created in partnership between U.S. Army Research Institute's Fort Hood Research Unit and the Training and Doctrine Command Capability Manager Mobile-Learning, Fort Eustis,

VA, with support from the Maneuver Center of Excellence and U.S. Army Armor School, and significant input from noncommissioned officers and officers at Fort Hood.

The Gunnery-Timer and Calculator app for Android is available at https://play.google.com/store/apps/details?id=mil.army.gtac.

The Gunnery-Timer and Calculator app for iOS is available at https://itunes.apple.com/us/app/gunnery-timer-and-calculator/id1213841158?ls=1&mt=8.

What Do We Mean When We Say 'Fight For Information'?

by LTC Nathan Palisca

The term *fighting for information* is used widely across our Army to describe the employment of cavalry squadrons in both reconnaissance and security operations. Unfortunately the meaning of that term is often just as widely misunderstood. Ask a group of maneuver professionals what it means to fight for information and you're likely to receive a wide variety of answers.

This article will attempt to codify what fighting for information can and should mean for our cavalry formations and, by extension, for the maneuver force writ large.

As a phrase, *fighting for information* is common in both our professional conversations and in our doctrine. A word search of the four cavalry doctrinal manuals – Field Manual (FM) 3-98, *Reconnaissance and Security Operations*; Army Technical Publication (ATP) 3-20.96, *Cavalry Squadron*; ATP 3-20.97, *Cavalry Troop*; and ATP 3-20.98, *Reconnaissance Platoon*, plus FM 3-55, *Information Collection* – returns 45 hits for the term *fight* (or *fighting*) *for information*. Regrettably, all five of these manuals fail to define the phrase. The closest reference to a definition can be found in FM 3-98 that contains a vague description of cavalry units fighting to overcome enemy efforts to protect vital information. This lack of specificity leads to *fighting for information* being misused in many conversations as an umbrella term to generically mean "cavalry stuff."

Defining 'fight for information'

So what do we mean when we say *fight for information*? What should we mean? The short answer is that it depends both on the tactical circumstances and the mission (i.e., reconnaissance or security). There are three broad definitions for *fighting for information* we should consider and integrate into our professional vocabularies. These meanings depend on context, are not mutually exclusive and, in many cases, can overlap during the course of a single mission.

Context-specific definitions of *fighting for information* should include:

- Fighting with the intent to cause an enemy reaction that can be observed and reported by either a cavalry unit or another sensor (unmanned aerial system (UAS), signals intelligence (SIGINT), rotary-wing aircraft, counterbattery radar, etc.). This is often an objective of a forceful, enemy-oriented zone reconnaissance, and it is the primary purpose of a reconnaissance-in-force.
- Destroying enemy reconnaissance assets to access and expose secondary threat echelons to friendly collection assets and potentially alter the enemy's decision cycle. A cavalry squadron or troop conducting a screen that destroys threat reconnaissance elements and forces the enemy commander to deploy his/her main body earlier than intended provides valuable information about the threat's disposition to the brigade combat team (BCT).
- Fighting to reach a position from which to conduct collection. An example of this would be a cavalry squadron fighting through an enemy disruption zone to establish contact with the enemy main body.

Regardless of the definition or context used, fighting for information entails the use of contact with an enemy force to generate information that will inform the higher headquarters' common operational picture (COP) or otherwise further the information-collection (IC) effort.

Tenets of fighting for information

It is important to note that in many cases fighting for information can, and should be, a synergistic effort. While a cavalry organization will collect and report information resulting from its reconnaissance or security operations, observation of secondary echelons or enemy reactions by other sensors (rotary wing, UAS, SIGINT, etc.) helps harness the breadth of information the cavalry squadron generates. Synchronizing all the BCT's IC assets in time, space and purpose; using the management methods of cueing, mixing and redundancy; plus integrating the following tenets, are critical to achieving the necessary effects of fighting for information.

The six core tenets of fighting for information should include:

- **Winning first contact.** *Fighting for information* does not imply only direct-fire contact. Cavalry formations can collect information and potentially influence enemy forces through any of the eight forms of contact. Regardless of the form, establishing contact on the commander's terms and maintaining or seizing the initiative is critical to shaping the engagement. It sets the conditions to fight for information.

- **Focused and limited offensive or defensive action.** Whether engaged in reconnaissance or security operations, fighting for information ideally begins with U.S. forces initiating offensive or defensive action across the appropriate forms of contact. It is critical to keep the scope of this action focused on collection requirements and limited to prevent decisive engagement when possible. Circumstances under which to engage, with which form of contact and how much combat power to employ should be clearly outlined in the commander's reconnaissance or security guidance.

- **Retaining freedom of maneuver.** Throughout the course of the engagement, cavalry units must retain the freedom to maneuver. This allows them to reposition and expose more of the threat's order of battle or to conduct a battle handover with maneuver companies and/or

battalions if necessary. It is important to keep the idea of retaining freedom of maneuver in perspective by echelon. A troop or squadron can retain freedom of maneuver even if one of their subordinate elements is decisively engaged.

- **Causing an enemy reaction that can be observed.** This is one of the most critical aspects of fighting for information. As cavalry units fight through and identify multiple threat echelons, the enemy will react. Potentially, the enemy's reaction will be in several ways simultaneously. Each of these threat reactions offers information on the enemy's strength, disposition and intentions. BCTs should synchronize and orient all the IC assets at their disposal (cavalry squadron, UAS, rotary-wing aviation, SIGINT, etc.) to derive maximum value from the cavalry's actions.

- **Rapidly developing the situation.** Once the threat has reacted to the initial engagement, it has changed the tactical situation in some way and potentially in several ways. Cavalry units must evaluate and report these enemy reactions, then act swiftly to either seize opportunities or reposition to identify a different enemy vulnerability. It is critical that cavalry commanders are empowered and trusted to act within the BCT commander's intent and in accordance with the principles of mission command.

- **Identification of enemy vulnerabilities to exploit.** Enemy units will generally reveal more of their strength and intentions throughout the course of an engagement. It is incumbent on the cavalry squadron to work in conjunction with the BCT staff to fuse information, identify enemy vulnerabilities and recommend ways to apply the BCT's combat power from a position of advantage. The cavalry-squadron S-2 (intelligence officer) and S-3 (operations officer) must maintain a continual dialogue with the BCT S-2 and S-3 to assess both the friendly and enemy situations, and to formulate recommendations for the BCT commander.

One of the most critical aspects of

setting the conditions to successfully fight for information is the development and issuance of thorough commander's reconnaissance or security guidance. Descriptive and well-articulated guidance (focus, tempo, engagement/disengagement criteria and displacement criteria) clarifies the conditions under which subordinate elements are expected to fight (or not). Fully developed commander's reconnaissance guidance outlines how the reconnaissance is to be conducted; specifies what information must be collected and reported; and preserves the squadron's combat power by avoiding unnecessary engagements. The key to producing sound commander's reconnaissance guidance is balancing between being descriptive enough to provide focus but not prescriptive to a point that it limits subordinate leaders' flexibility of action.

It is important to keep the term *fighting for information* in perspective by formation type. All cavalry squadrons (armored BCT (ABCT), Stryker BCT and infantry BCT) possess the ability to fight for information, but each formation type is best used against specific types of threats. Understanding the capabilities and limitations of a specific formation type and assessing available combat power relative to the enemy is critical to understanding the conditions under which a cavalry squadron can fight for information successfully.

While keeping formation type in mind is important to understanding a unit's ability to fight for information, it is equally important to focus on what it means to fight for information at echelon. While all cavalry organizations
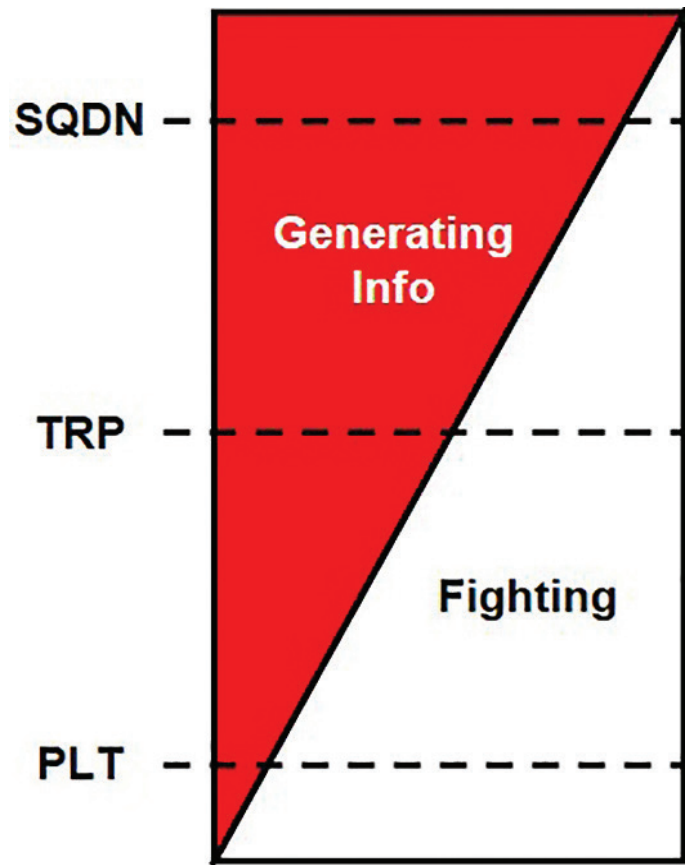
Figure 1. Inverse proportion of fighting and analysis at echelon.

have a requirement to identify, understand and report what they are observing or are in contact with, the responsibility to analyze and distill meaning from those reports increases at higher echelons. (See Figure 1.) Specifically, squadron staffs should correlate reports and place them into context with respect to the entire BCT area of operations. They should continuously communicate and work with the BCT staff, adding to the overall COP. Critical to this process is the staff's understanding of the linkage between BCT-level decision points, the priority intelligence requirements (PIR) that inform those decisions and the named areas of interest (NAIs) where answers to the PIR can potentially be found.

Although the squadron S-2 and S-3 are likely not fighting directly, this analysis at the squadron level generates the information that is the second half of the *fighting for information* equation. Fighting is the first half; capturing and making sense of reported information that informs the BCT commander's decisions is the other half.

This is not to imply that cavalry troops and scout platoons don't have a responsibility to understand and refine the information they report. On the contrary, this is where the refinement of collected information should begin. The proportional shift in responsibility to generate information is simply a function of increased analytical capability at higher echelons.

Fighting for information vs. developing the situation

Some in the maneuver community would submit that *fighting for information* is simply *developing the situation* by another name. Those in this camp would point out that reporting is key to both terms, and that *developing the situation* is one of the fundamentals of reconnaissance. In both cases, they would be correct. However, although the two phrases are unquestionably close cousins, they are nonetheless discernibly different.

Take the case of a maneuver battalion conducting a movement-to-contact. At the point when contact is made with the enemy, the battalion's formation is relatively massed (i.e., companies are likely within mutual supporting distance of each other). Upon making contact, the battalion commander assesses the situation within the battalion's area of operation, identifies positions of advantage and maneuvers to destroy the enemy. In this situation, the battalion's goal is the destruction or defeat of the enemy. Reporting the combat information occurs as a matter of course during the engagement.

A scenario where a cavalry squadron conducts a force-oriented zone reconnaissance shares many similarities with the movement-to-contact example, but it also has some critical differences. When enemy contact is made, the squadron is almost certainly not massed. Instead, it's likely dispersed across the entirety, or at least the bulk, of the BCT's frontage. Upon contact, the squadron commander assesses the situation, decides to fight or displace based on engagement/disengagement/displacement criteria, avoids decisive engagement if possible and, above all, strives to maintain situational awareness and continued reporting across the entirety of the BCT's front or flank.

In this scenario, the squadron's goal is the collection and reporting of information to inform the BCT's COP to enable decision-making. Destruction or defeat of the enemy is only useful to the cavalry squadron as it relates to furthering the IC effort. Developing the situation occurs in due course of the engagement rather than being the immediate imperative it is for the maneuver battalion.

The following vignette seeks to illustrate some of the key concepts of fighting for information. Note that all the units in this vignette are fictitious. They are not meant to depict the actions of an actual unit either during an operational deployment or at a combat-training center (CTC).

Vignette: zone reconnaissance

The 2nd Squadron, 23rd Cavalry Regiment, supporting effort (SE) No. 1 for the BCT, is assigned to conduct an enemy-oriented, rapid and forceful zone reconnaissance in support of a deliberate attack by 2/88 ABCT against a defending reinforced enemy
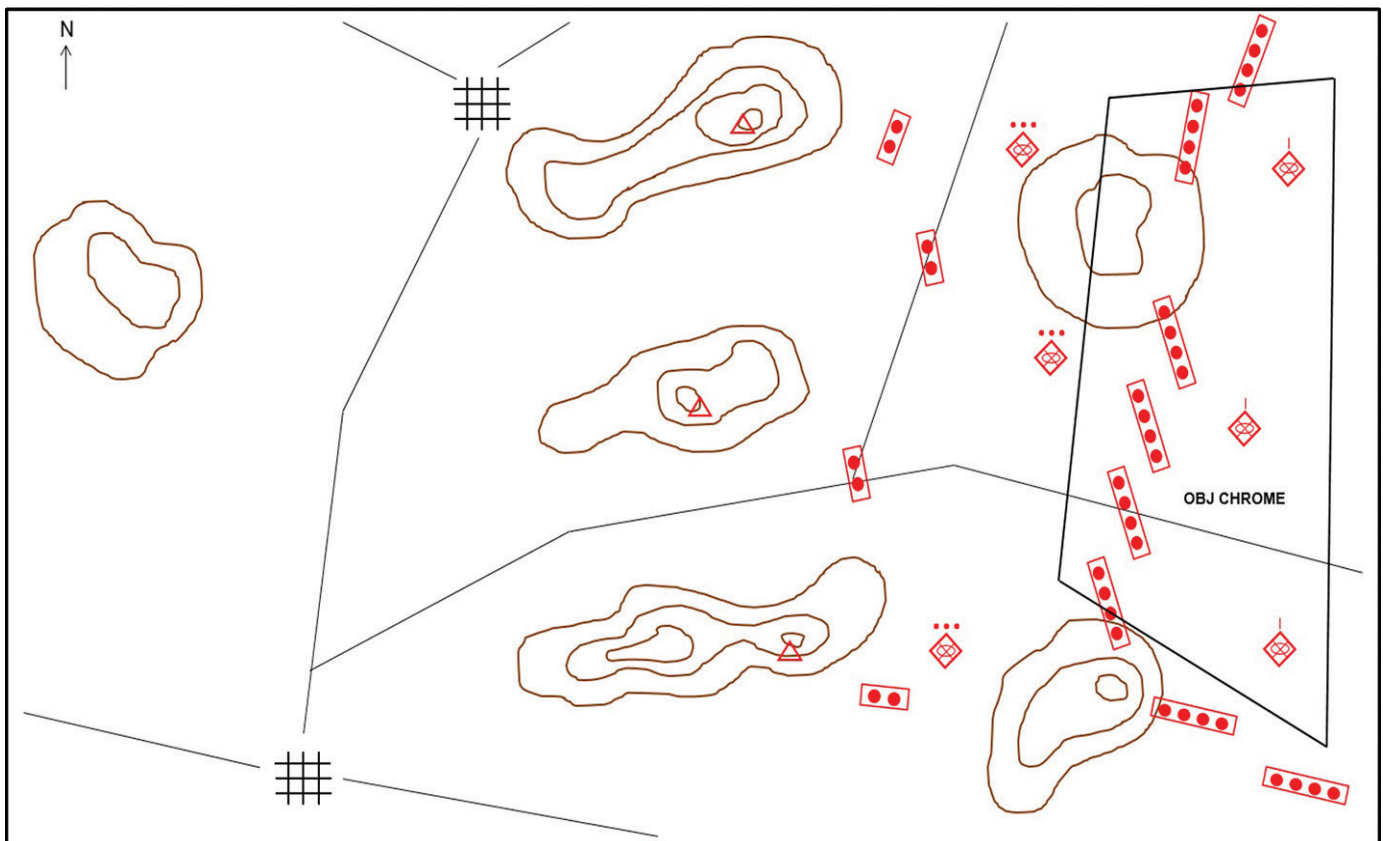
Figure 2. 2/88 ABCT sittemp.

mechanized-infantry battalion. The BCT situation template (sittemp) is depicted in Figure 2.

2-23 Cav mission: *2-23 Cav conducts an enemy-oriented zone reconnaissance from Phase Line (PL) Dallas to PL Denver not later than 290500OCT20XX (military time = 5 a.m. Oct. 29, 20XX) to cause the collapse of the enemy disruption zone and identify the main defensive belt to enable the BCT's seizure of Objective Chrome.*

2-23 Cav commander's reconnaissance guidance:

Focus*: Our primary focus during this reconnaissance is to identify enemy defensive positions; our secondary focus is to identify terrain that supports the BCT scheme of maneuver. Reconnaissance objectives include: 1) the enemy disruption zone; 2) the enemy main defensive belt (including obstacle locations); 3) bypasses for any manmade or natural obstacles; and 4) terrain that supports assault positions, attack-by-fire (ABF) positions or support-by-fire (SBF) positions for the maneuver battalions.*

Tempo*: Rapid and forceful. Stealth is* not critical, and time is of the essence. We must quickly collapse the disruption zone by either destroying or forcing the displacement of the enemy's counter-reconnaissance forces. Locate bypasses around any disrupting obstacles to allow us to maintain momentum and quickly identify the enemy's main defensive positions.

Engagement/disengagement criteria:

Cavalry troops*: Immediately engage enemy BRDMs* [Boyevaya Razvedyvatelnaya Dozornaya Mashina – a Russian scout vehicle] *or BMPs* [Boyeva Mashina Pekhoty – a Russian fighting vehicle] *of platoon size or smaller. The preferred method is to engage with indirect fire and transition to direct fire when enemy vehicles begin to displace. Do not engage enemy tanks without support from D/2-23 Cav (the tank company) except in self-defense. You are free to engage anything on the high-payoff target list with indirect fire or attack aviation. Request authorization to engage these targets with direct fire. Be prepared to transition to a screen or a hasty defense once the enemy main defensive belt is identified.*

Tank company*: Your primary focus is destroying enemy tanks. Allow the cavalry troops to develop the situation before committing our armor. Tank platoons will engage individual enemy tanks and sections; the tank company will engage enemy tank platoons.*

Displacement criteria*: Enemy armored vehicles greater than platoon size and closer than 1,500 meters are criteria for displacement. Assess the situation, report if displacement criteria has been met, recommend a course of action and request authorization to displace. We must maintain contact even if we are forced to displace.*

With this guidance, 2-23 Cav arrays one cavalry troop against each avenue of approach (AoA): Troop B in the north, Troop C in the center and Troop A in the south. The squadron has task-organized a tank platoon to Troop C and directs Company D (-) (tank company) to follow and support Troop B in the north. The 2-23 Cav crosses PL Dallas line-of-departure (LD) at 9:30 p.m. Oct. 28, 20XX.

At 1 a.m. Oct. 29, 20XX, 2-23 Cav identifies and destroys two enemy

Figure 3. 2-23 Cav identifies the enemy's disruption zone at 1 a.m.
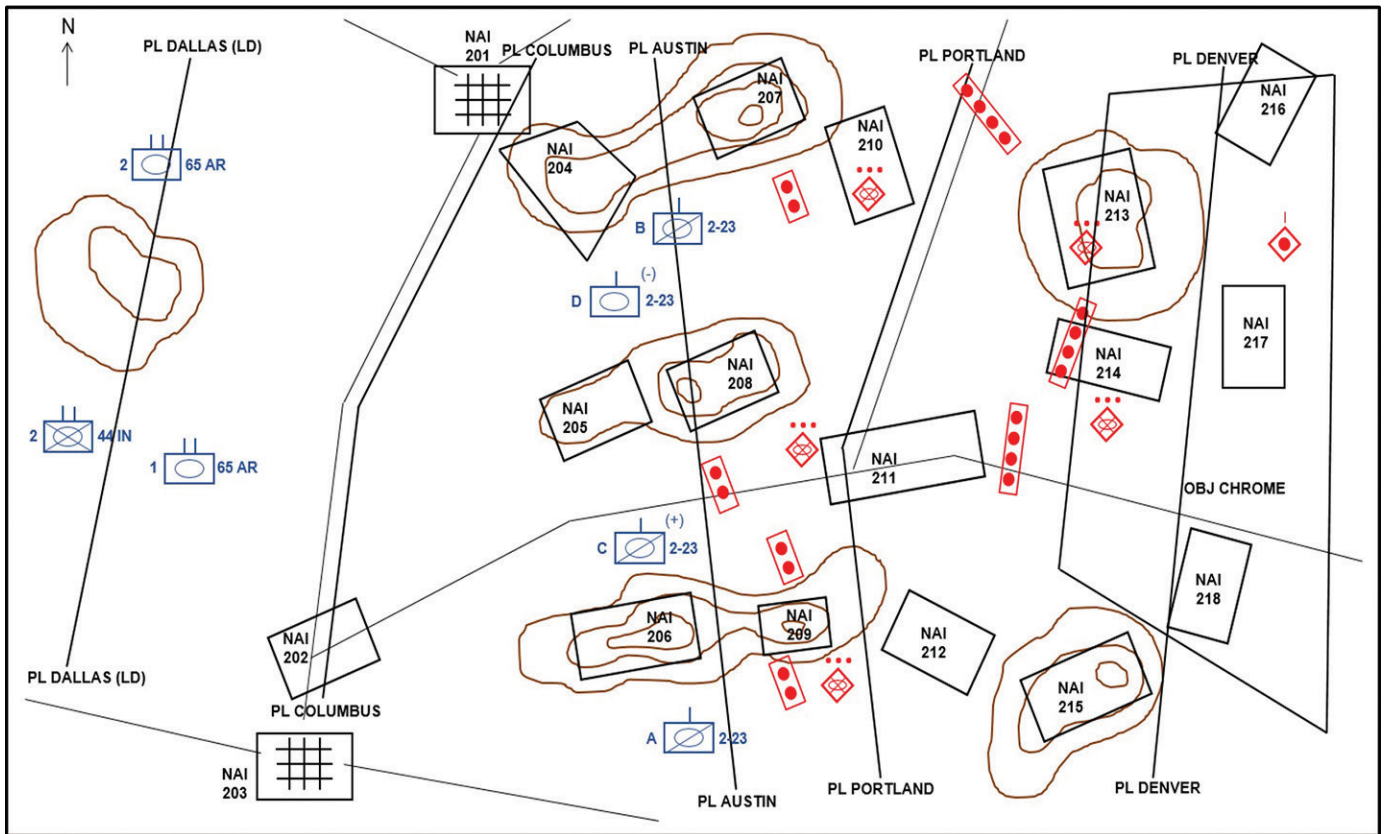
Figure 4. 2-23 Cav identifies obstacles and the enemy main defensive belt by 2 a.m.
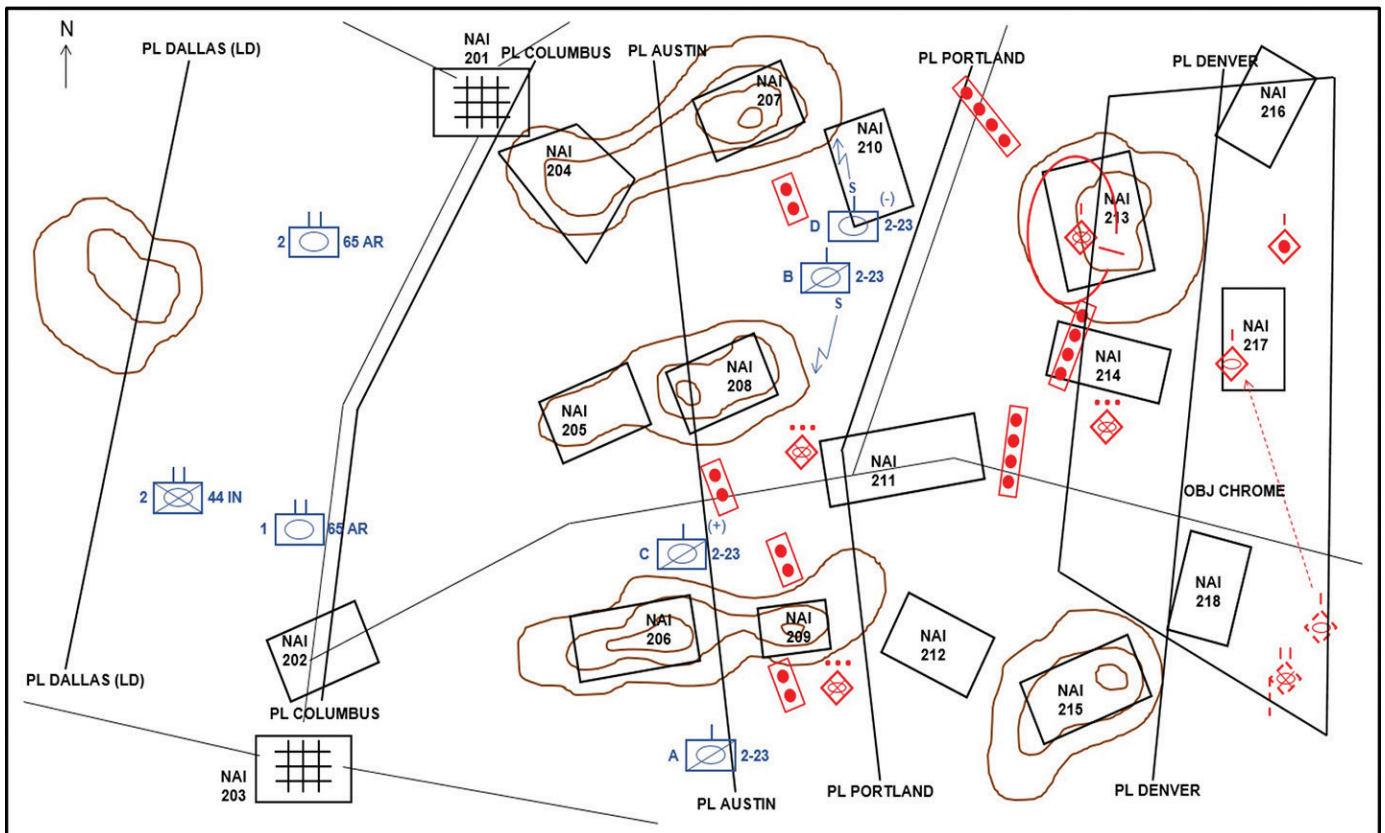
Figure 5. 2-23 Cav identifies enemy reserve and establishes guides at the northern bypass at 3:17 a.m.

observation posts in NAIs 204 and 206, and observes a third displacing to the east from NAI 205 (Figure 3). This

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indicates that the enemy's disruption zone is farther west than was originally depicted in the BCT SitTemp. An attack-weapons team (AWT) in direct support of 2-23 Cav identifies 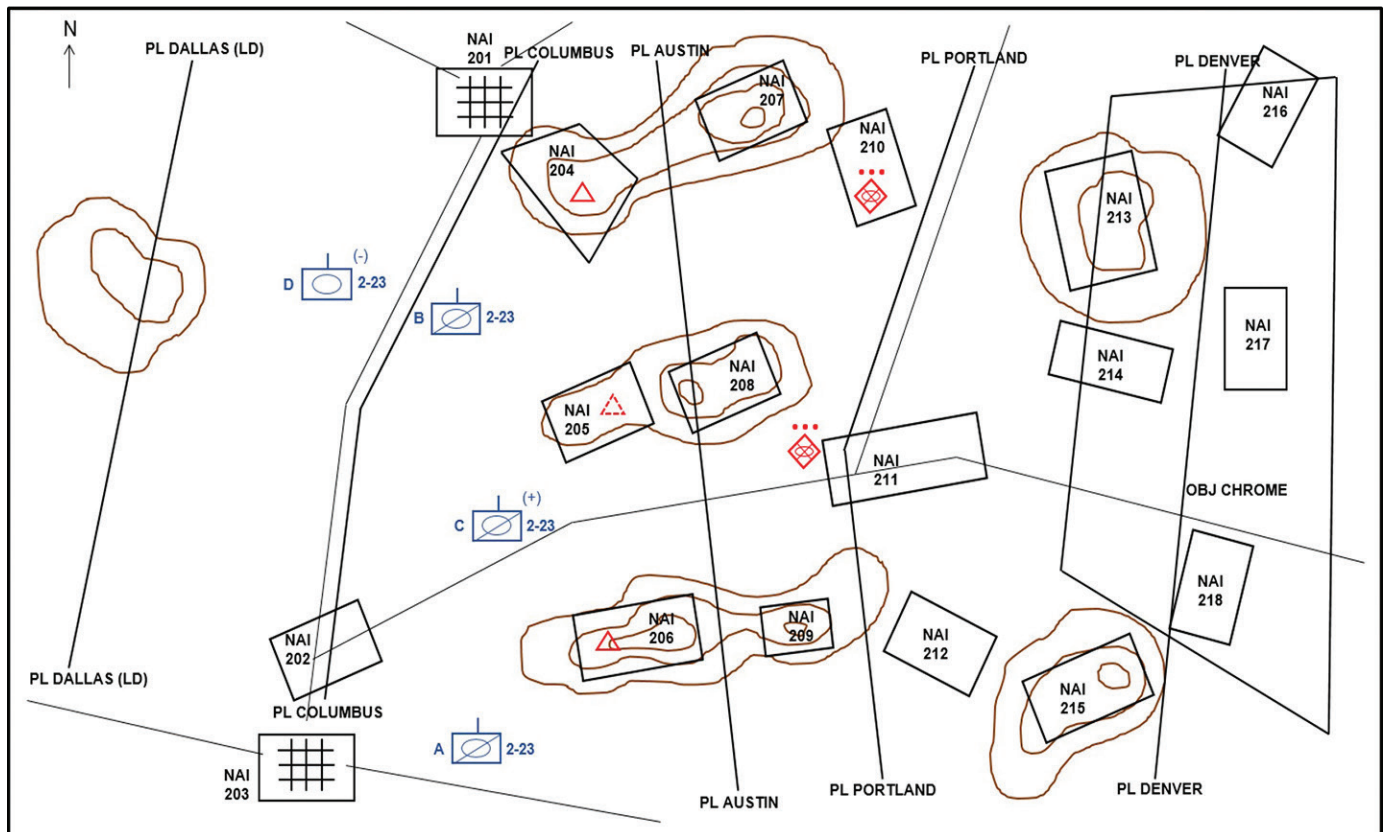two enemy BMPs in NAI 210 and three BMPs west of NAI 211. The 2-23 Cav commander recognizes that these BMPs indicate the location of the enemy's disruption zone and reports to 2/88 ABCT.

By 2 a.m., 2-23 Cav has made contact with disrupting obstacles (mine-wire) overwatched by BMP platoons on all three AoAs and has confirmed the enemy's disruption zone. The 2/88 ABCT counterbattery radar has identified the location of several pieces of enemy artillery north of NAI 217. The 2/88 ABCT's UAS identifies two platoons of BMPs moving into prepared defensive positions supported by obstacles in NAI 213 and south of NAI 214 (Figure 4), indicating the location of the enemy's main defensive belt.

The 2/88 ABCT crosses PL Dallas (the LD) with 1-65 Armor (main effort) oriented on the central AoA and 2-65 Armor (SE 2) oriented on the northern AoA. The 2-44 Infantry (SE 3) is directed to follow and support 1-65 Armor.

At 3:10 a.m., Troop B and Company D (-) have forced the displacement of three BMPs from NAI 210 and identified a bypass around the northern disrupting obstacle. As they move east of the obstacle, they come into contact with an enemy mechanized-infantry company in defensive positions and cannot advance more. Troop B positions guides at the bypass around the obstacle and establishes a screen in conjunction with Company D (-) to maintain contact with the enemy (Figure 5). Troop B also initiates reconnaissance of terrain that will support assault positions and ABF positions for the maneuver battalions.

At 3:17 a.m., an AWT identifies six to eight enemy tanks moving north to NAI 217 and reports this action to the 2-23 Cav command post. The squadron commander determines that the enemy is repositioning its reserve and reports to 2/88 ABCT. BCT SIGINT assets detect increased communication signatures and tentatively identify the enemy battalion command post (CP) southeast of NAI 218.

By 3:25 a.m., Troop A has destroyed or forced displacement of three BMPs,

identified a sizeable bypass around the southern obstacle and has established a screen to maintain contact with at least two platoons of enemy BMPs defending in the vicinity of NAI 215 (Figure 6). Troop A has established guides identifying the bypass around the obstacle and begins reconnaissance of terrain that will support assault or ABF positions for the maneuver battalions.

Troop C (+) has forced the displacement of a platoon of BMPs in the vicinity of NAI 211 but has been unable to identify a suitable bypass around the disrupting obstacles in the central AoA.

The 2/88 ABCT commander recognizes that the enemy disruption zone has collapsed, the central AoA is impassable and that the enemy's reserve has repositioned to the north. The BCT commander redirects 1-65 Armor (main effort) and 2-44 Infantry (SE 3) to conduct battle handover with Troop A in the south, and to attack to destroy the enemy company in the vicinity of NAI 215 and the enemy battalion CP southeast of NAI 218. The 2-65 Armor (SE 2) is directed to fix enemy forces in the vicinity of NAIs 213 and 214 to prevent them from influencing the BCT's

Figure 6. 2-23 Cav establishes a bypass in the south at 3:25 a.m. 2/88 ABCT commits to the main effort.

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main effort in the south.

Not always appropriate

Fighting for information is certainly not appropriate in every tactical situation. There are a host of scenarios that require stealth, patience and a deliberate approach to collecting information on the part of our cavalry squadrons. The ability to employ both stealthy and aggressive techniques, the flexibility to transition between them and the tactical wherew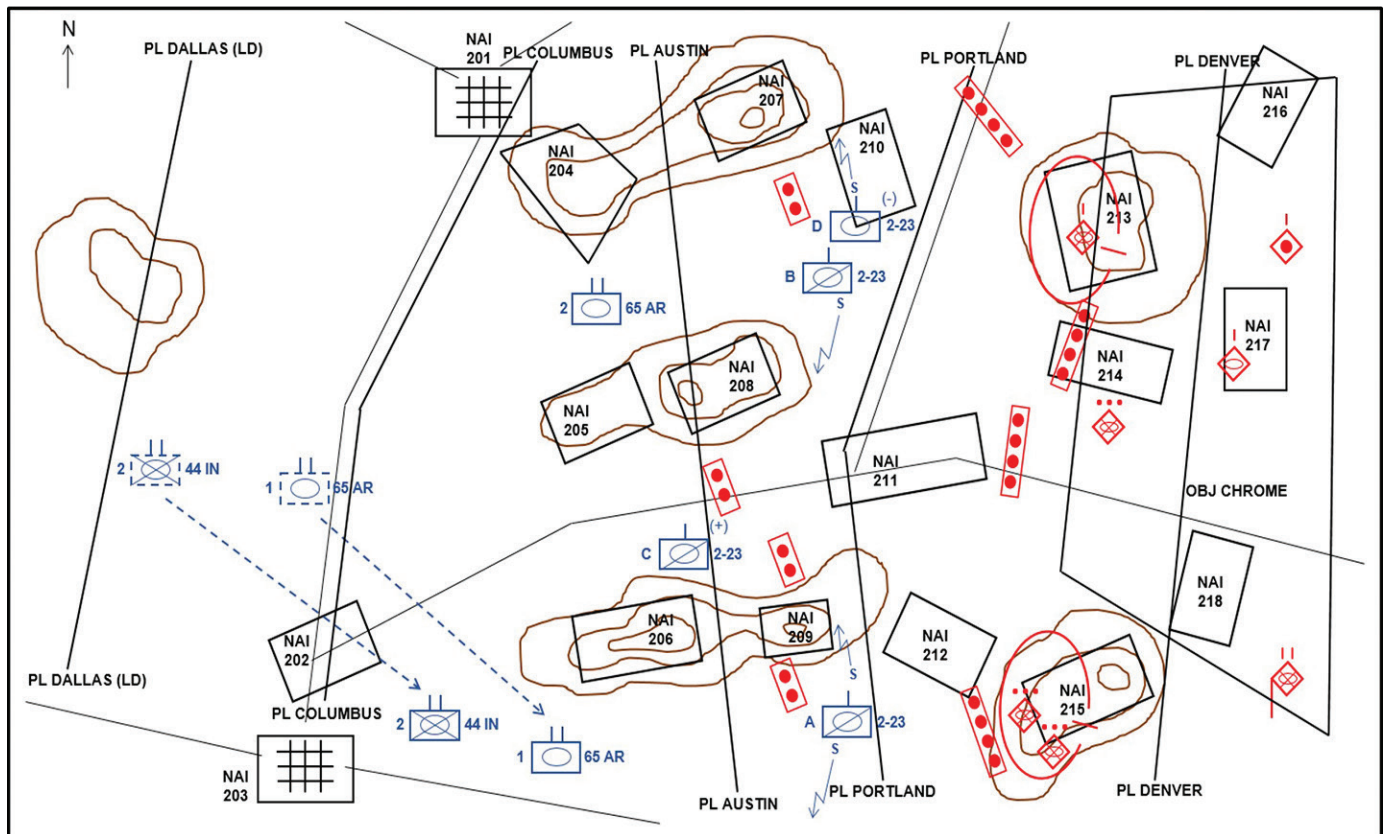ithal to understand when each is appropriate is a critical skill for the leadership of our cavalry formations. However, for the purposes of this article, the preceding vignette illustrates a scenario where aggressive reconnaissance is both appropriate and capable of generating information through action.

In the vignette, the BCT was able to identify most of the defending enemy battalion, either directly through the cavalry squadron or by other sensors that detected enemy reactions to the squadron's operations. Fusing this information informed the BCT's COP, allowed the BCT commander to recognize the southern AoA as a position of advantage and then adjust the scheme of maneuver to apply combat power against it. Once the decision was made to alter the scheme of maneuver, the cavalry squadron was positioned to facilitate the BCT's transition by guiding it through the established bypasses and to ABF/SBF positions that had been reconnoitered.

Conclusion

Fighting for information remains a useful, if somewhat vaguely defined, term within our professional lexicon.

Regardless of whether it is used to convey 1) fighting with the intent to cause an enemy reaction; 2) destroy enemy reconnaissance assets to access and expose secondary threat echelons to friendly collection assets; or 3) fighting to reach a position from which to conduct collection, *fighting for information* has the power to accurately describe what we expect and require of our cavalry squadrons during both reconnaissance and security operations.

With these definitions in mind, the next logical step is to fully incorporate a comprehensive description of *fighting for information* into our maneuver, intelligence, fires and mission-command doctrine. Programs of instruction for our professional-military-education courses and points of emphasis during leadership training programs and CTC rotations will naturally follow in time. Doing so will help create a shared understanding between commanders and staffs in regard to the planning and execution of reconnaissance-and-security operations. It will also clarify ways our cavalry squadrons can be of maximum benefit to their BCTs.

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ACRONYM QUICK-SCAN

AoA – avenue of approach
ABCT – armored brigade combat team
ABF – attack-by-fire
ATP – Army technical publication
AWT – attack-weapons team
BCT – brigade combat team
BMP – *Boyeva Mashina Pekhoty* (Russian fighting vehicle)
BRDM – *Boyevaya Razvedyvatelnaya Dozornaya Mashina* (Russian scout vehicle)
COP – common operating picture
CP – command post
CTC – combat-training center
FM – field manual
LD – line of departure
IC – information collection
NAI – named area of interest
PIR – priority intelligence requirement
PL – phase line
SBF – support-by-fire
SE – supporting effort
SIGINT – signals intelligence
Sittemp – situational template
UAS – unmanned aerial system

A look at NATO ally Spain

Cordoba Cats: Ejercito de Tierra's Leopard 2E Main Battle Tank

by Stefan DeGraef

In mid-February of this year, Spain's Ministry of Defense and the *Ejercito de Tierra* (Spanish army) decided to send soldiers, six Leopard 2E main battle tanks (MBTs) and 15 Pizarro II armored infantry fighting vehicles to Latvia as part of the North Atlantic Treaty Organization's (NATO) enhanced forward presence (EFP) initiative in the Baltic States (Lithuania, Latvia and Estonia) and in Poland. This multinational military force reinforces NATO's northeastern flank from invasion.

The Spanish deployment – part of a Latvia-based multinational battalion under Canadian leadership – not only illustrates Spanish willingness to participate in NATO-member-supported operations but also to continuously invest in a capable, deployable and credible Leopard 2E MBT force. At the same time, *Ejercito de Tierra* initiated internal reform to become a more organic, deployable force able to respond to any threat scenario.

Leopard 2A6 variant

The Spanish army's Leopard 2E (*E* for *Espana*) is based on Germany's capable Leopard 2A6 variant in service with the German army. The 2A6 MBT was developed as a *Kampfwertsteigerung* of the existing Leopard 2A4 model by replacing its Rheinmetal 120 L/44 by a more potent and longer-barreled Rh120 L/55 cannon and to improve the tank's armor protection and survivability on the "classic" battlefield. Additional add-on wedge "arrow-shaped" armor was installed on the turret's frontal arc and roof to make it less vulnerable to kinetic-energy penetrating munition like armor-piercing sabots. To give the MBT more protection against mines and improvised explosive devices, more belly-armor plates were also incorporated into the design and manufacturing process.

Armed by the potent Rheinmetall L/55 120 mm, the Leopard 2E and its four-man crew (tank commander, gunner, loader and driver) are able to engage targets at an effective range of about 4,000 meters. For battlefield observation, target identification and elimination, the tank commander uses a turret-mounted 360-degree rotatable day/night PERI-R 17A2 stabilized panoramic periscope. The gunner, seated in front and below the tank commander, uses a dual-magnification stabilized sight with an integrated laser-range-finder and thermal imaging unit. The stabilized gun allows the tank commander and gunner to individually detect, target and attack (hunter-killer) enemy tanks and armored personnel carriers while moving over rough terrain in all weather conditions. A back-up telescope is also available to the gunner.

All systems are integrated into the Leopard Information and Command Equipment (LINCE) command-and-control system, developed by Rheinmetall Defense Electronics and Spain's Indra Company. The LINCE-battle-management system also allows each tank commander to optimize his battlefield situation awareness using a multi-color display indicating the exact position of his tank, his company's tanks and the enemy's MBTs.

The loader, standing left of his commander, manually loads the L/55 gun using munition stored in the back of the turret (15 rounds) and left of the driver in the body of the MBT (27 rounds). A blast door separates the back of the turret from the crew compartment and, when hit, this turret section will explode upward without danger to the crew.

Standard munition used by the Leopard 2Es are the German-made DM43 kinetic-energy penetration anti-tank sabot-round and the DM12 multipurpose anti-tank projectile. The DM43 is able to penetrate 56-centimeter steel armor when fired at a range of two kilometers. When its ammunition is manually loaded by an experienced loader, a Leopard 2E can fire up to nine shots a minute, with some of its ammunition (especially kinetic-energy penetrators) reaching velocities up to 1,800 a second. Able to shoot the

Figure 1. A Leopard 2E assigned to *Brigada el Guzman X* moves through the terrain of the training area at Spain's CerroMuriano Barracks, located near Cordoba, Spain. *(Photo by Edwin Borremans)*

Armor ✖ Summer 2017

Rheinmetall L/55 on a nine-degree downward angle and to climb obstacles up to 1.1 meters, the Leopard 2E can use terrain concealment to target and attack enemy MBTs without exposing its bulk to the opponent.

When forced to fight at close range (such as in urban areas), two 7.62mm machineguns can be used: one turret-mounted and one coaxially mounted. Two groups of four side-mounted 76mm Wegmann smoke mortars on the turret can be electrically fired to create smokescreens within seconds. An internal overpressurization system protects the Leopard 2E's crew from nuclear, biological and chemical threats.

For training purposes, all Leopard 2E regiments use a high-tech dynamic turret simulator, designed by Indra. This simulator can be used to train MBT commanders, gunners and loaders during various simple and more complicated tactical scenarios and operational environments. To boost the realistic value of this crew training, simulated iron munition, similar in size and weight, can be handled by the loader and "fired" by the gunner.

Organization

Since its introduction by the Spanish army, several brigades – all belonging to Spain's Division San Marcial – have been equipped with the new Leopard 2Es. Each of these brigades has one *Regimiento de Infanteria Acorzado* with one *Batallon de Infanteria de Carros de Combate*, which are each composed of three companies (*companias*) of Leopard 2E MBTs. Three individual platoons (*primara, segunda* and *tercara seccion*) all have three MBTs in each *seccion*, augmented by two "staff" Leopard 2Es. On paper the Spanish army has a combined force of

42 MBTs, joined by Leopard recovery tanks.

One of these battalions, *Batallon de Infanteria Carros de Combate Malaga IV/10*, is based at the Spanish army's CerroMuriano Barracks, located 15 kilometers north of Cordoba in southern Spain. The unit is part of *Regimiento Acorazada Cordoba No. 10*, joined by *Grupo de Cabelleria Acorazado Alamansa II/10*. This mechanized-cavalry unit operates Austrian-Spanish Cooperation Development Pizarro II *Vehiculos de Combate de Infanteria* (VCI) armored infantry vehicles in support of the Leopard 2E fighting force. Armed with a 30mm Mauser Mk-30/2 cannon, the Phase II Pizarro is an updated version of the initial version, with a small increase in overall length but with improved armor, interior design, control handling and, more importantly, new tactical displays for the VCI commander and gunner.

Frequent joint operations with MBTs, Pizarro II VCI and command vehicles – and even M125A1 120mm heavy mortar carriers – are simulated in the CerroMuriano Barracks' training area.

In 2015 the Spanish army initiated a in-depth reorganization, transforming its brigades into eight *brigadas organicas polivalentes* (BOP) (polyvalant organic brigades), allowing these units to respond, adapt and deploy in a more flexible and adaptable reaction to any type of (inter)national humanitarian, peace-keeping and peace-enforcing mission. To be more deployable as a unit, the *Brigada Guzman el Bueno X* BOP received two more fighting companies. If needed, each BOP will be supplemented by more companies/ battalions to boost its overall capabalities (in other words, heliborne capability by one of the army aviation units).

'On stage' in Latvia

In reaction to Russia's annexation of Crimea and invasion of Ukraine, NATO decided during its 2016 summit in Warsaw to deploy four multinational battalion-sized landforces/battlegroups as EFP to Poland and the Baltic States. The battlegroup at present is a six-nation military force: Canada, Albania, Italy, Poland, Slovenia and Spain.

The Spanish army deployed some 350 military personnel, six Leopard 2E MBTs and 15 of the Pizarro IIs to the Latvian army's Adazi military barracks, close to Latvia's capital Riga. Initially personnel, tanks and vehicles of *Brigada Extramadura XI* were sent to Latvia, with rotations of personnel planned among the various MBT-equipped BOPs. The Spanish Leopard 2Es are joined by a company of Leopard 2A5 MBTs of the Polish armed forces.

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ACRONYM QUICK-SCAN

BOP – *Brigada organicas polivalentes* (Spanish) or polyvalant organic brigade (English)
EFP – enhanced forward presence
LINCE – Leopard Information and Command Equipment
MBT – main battle tank
NATO – North Atlantic Treaty Organization
VCI – *Vehiculos de Combate de Infanteria*

Training and Evaluation in a Complex Environment

by LTC Jeffrey J. Barta and
MAJ Chase S. Baker

The Chief of Staff of the Army identifies his No. 1 priority as "readiness, and there is no other number-one priority." With that in mind, the best way to get after readiness is internally resourced and planned training with external control and evaluation.

Doctrine provides references on training management and training assessment, but it provides little guidance about formal evaluation and feedback mechanisms or methods currently employed by the observers/coaches/trainers (O/C/Ts) at the combat training centers (CTCs) beyond the after-action review (AAR). So how does an element, unit or individual appropriately plan and provide doctrinally focused external assessment and evaluation? With that question in mind, we have identified 10 tenets and proposed a training and task outline that defines the O/C/T's observation and coaching opportunities to provide dynamic feedback in a high-fidelity, complex decisive-action training environment (DATE).

1. Relationship development. Many leaders use the phrase "relationships are our pacing item." This rang true for me as an O/C/T more than for nearly any other job in the Army. The overarching tasks of an O/C/T are to identify flaws, weaknesses and shortcomings of an individual, a unit or a group, and tell them in a way that enables positive change and growth. You must build a non-attributional relationship, based on mutual trust and respect, ensuring a counterpart knows his/her O/C/T has his/her best interest and development as a priority. If an O/C/T cannot provide effective, constructive criticism and input – early and often – and cannot maintain a completely open dialogue that encourages questions and learning, then the other nine tenets following are irrelevant because observations will fall on deaf ears.

2. Collect relevant information. One of the most critical O/C/T functions is collecting data and information objectively to build the backbone of the AAR, which is the primary mechanism for discussing areas to sustain, improve or increase proficiency. The process begins with product review, including observing the publication of orders and rehearsals. An O/C/T must be able to quickly read an order and key annexes, and must be able to understand the commander's intent and concept of the operation, while simultaneously visualizing the plan and identifying potential friction and missed opportunities in accordance with the scenario design. Shortcomings may include missing key products or details, but an O/C/T must know doctrinal planning to an extent that the root causes of the friction are nearly immediately apparent, thus enabling AAR production.

For example, if a unit fails to produce a decision-support template needed to enable the brigade commander's decision-making in execution, is it because the staff ran out of time and/or because it did not adhere to the action/reaction/counter-action format of the course-of-action analysis (wargame)? An O/C/T must have both the knowledge and experience regarding required quality and level of detail to assess how the unit executed every step of the military decision-making process (MDMP) and troop-leading procedures (TLPs).

There are three primary areas an O/C/T should focus collection efforts against to identify potential friction points for the training unit. The first is comparing the unit's mission-essential task list (METL) self-assessment to the training objectives and overlaying both with the scenario design as described in the eighth tenet. If the METL assessment matches the remaining training foci, you can then derive that the unit is self-aware and the unit-identified training objectives will help focus the AAR. If the unit-identified training objectives do not correspond with the METL assessment, it may cause O/C/Ts to coach a unit to refine its objectives to enable appropriate feedback.

Figure 1. O/C/Ts observing a 3rd Stryker Cavalry Regiment combined-arms rehearsal at NTC in February 2016. *(Photo by MAJ Chase Baker)*

The second collection opportunity is leader engagements. This requires a rapid relationship build as described in the first tenet that enables early candid conversation of both personal, unit and subordinate strengths and weaknesses from your counterpart.

Lastly, understanding the unit's equipment status, capabilities and limitations helps develop expectation management within the scenario. Units conduct collective training at varying levels of readiness. If maintenance is low from the start and remains low, the unit will struggle to achieve necessary force ratios; logistics will quickly become a focus topic, overshadowing and distracting from other large collective tasks as the primary shortcoming.

Just like the intelligence-preparation-of-the-battlefield process, one of the most important outputs of information-collection planning is the development of priority intelligence requirements (PIR) that are supported by good refined intelligence requirements that enable subordinate O/C/Ts to focus their collection. Without PIR, observations become too broad to confirm/deny suspected issues or identify potential new ones, which leads to feedback that is "a mile wide and a foot deep." PIR should be developed as a collaborative process among O/C/Ts and should not change during the current mission or you risk having two incomplete data pulls. Lastly, the collected PIR should be objective and the result becomes a "sustain" or an "improve," depending on the context of the scenario design.

It's impossible to cover all the friction, mistakes and deficiencies during an AAR, so an O/C/T must separate which cyclic and enduring faults bridge the unit as a whole from those specific to an individual counterpart or small group. Those preventable mistakes and "low-hanging fruit" are great coaching opportunities to fix early and re-enforce as success later. This methodology not only increases individual and unit effectiveness exponentially, it enhances the O/C/T-to-counterpart interpersonal relationships and strengthens mutual trust, furthering the willingness to learn and accept constructive criticism.

3. Maintain common operational picture (COP). One of the most important tenets of successful evaluation is the COP. At the formal training centers as well as at Active Component and Reserve Component training sites, observers have access to exercise-control (EXCON) equipment related to Multiple Integrated Laser Engagement System, specifically the Combat Training Center Instrumentation System (CTC-IS). O/C/Ts should use these systems' complete capabilities, as well as the Army Battle Command System, Force XXI Battle Command Brigade-and-Below, Command Post of the Future and analog maps and graphics to maintain an understanding of the friendly and enemy picture.

The difference between an O/C/T's COP and the training unit's view is that an O/C/T does not have to have perfect "current operational picture," only a common one among himself, other O/C/Ts and the CTC-IS. This construct enables an O/C/T to develop the picture in minutes instead of seconds. This gives the O/C/T the time/space to confirm accuracy before reporting. This enables near-perfect battle summarization to determine exactly what happened. Much like good furniture begins with perfectly square lumber, a good AAR begins with precise data that a unit would be incapable of collecting itself.

4. Maintain technical competence. At the root of precise data collection is a technically competent O/C/T. The O/C/T must understand (in detail) the organization and capabilities of a unit, its enablers and all its mission-command combat and sustaining systems. An O/C/T must instantly recognize when a mistake is being made to capture the data because once the individual or unit has moved past that moment or event, it's nearly impossible to go back and recreate or capture the observation without becoming disruptive. Also, one must remember that to focus collection and know what system to observe, an O/C/T must have well-refined PIR as described in the third tenet.

5. Sustain tactical relevance. Once information collection is complete and a training objective, friction point or coaching opportunity is identified, it's imperative that an O/C/T can immediately apply the appropriate doctrinal reference to the situation. To do this, O/C/Ts must have an extensive doctrinal knowledge base, but he/she must also read the doctrine associated with the specific PIR or potential friction point ahead of time so as observation occurs, the doctrinal shortcomings become obvious. The ability to match a rotation's challenge to a doctrinal extract – and then tie it to the rotational construct and the outcome of the actual fight – establishes the basis for the AAR: identifying what was supposed to happen, what did happen, what we could have done differently and what to sustain.

6. Provide appropriate feedback. The ability to determine a feedback method and optimize both content and timeliness depends on an O/C/T's ability to determine the appropriate messaging tool and subject approach to use. There are many methods to provide feedback, but we'll focus on the CTCs' staples. Some topics are too detailed for counterpart hotwashes or "Green Book AARs." They require at least some, but possibly a significant, amount of instrumentation to present. In these cases, a formal, instrumented AAR is necessary. This forum usually relates to the broadest audience (command and staff) at any echelon. It strives to link observations across the warfighting functions much like an integrating cell within the staff. A detailed battle-action summary sets conditions about what happened, referencing hard data collected from PIRs, and it generates good questions that encourage active participation and self-awareness of the friction encountered.

AARs inherently address the problem, concluding with the unit designating an action officer to ensure follow-through. The optimal way is to ensure the AAR leads a unit to its own solution. In a time- or terrain-constrained environment, an O/C/T can still successfully execute an analog formal AAR, with the data pulled from PIR throughout the battle and a series of doctrinal "right way" printouts that can be displayed and discussed instead of the O/C/T-collected data. The visual aids routinely spur acknowledgement

but often drive discussion as the training unit self-identifies more faults.

The most informal method is the "Green Book hotwash," preferably used in a leader-only or counterpart-only role. This method is best employed as feedback in the most time-constrained training environments or when the preponderance of AAR topics clearly points to key leader shortcomings and isn't appropriate to discuss in front of the entire unit.

Also, when applying answered PIR to the tactical outcomes, O/C/Ts must acknowledge that gaps in collection may lead to false negative assumptions. If there is friction, but the cause and effect is not available to present as an area to "improve" – either on a slide, CTC-IS screenshot or in hard data collected from the training unit – O/C/Ts should leave it out completely. O/C/Ts should look for another opportunity to encourage self-derived feedback from the unit. The most destructive thing you can do during feedback is present incorrect data to the unit and lose credibility or trust as described in the first tenet. Once lost, an O/C/T will not have time within the short remainder of a training event to rebuild it.

Lastly, "improves" are like fish; after a short time, they begin to stink and are no longer welcome. Feedback has a last-time-information-is-of-value mark. If a unit has changed its standard operating procedure (SOP), moved on from the friction or is now into another phase within the scenario, it is best not to include old data. An exception

to this could be if an O/C/T is intentionally identifying a trend or direct comparison between two phases or periods. Overall, the common goal across all forms of AAR feedback is self-discovery and acknowledgement from the training unit. This is accomplished via presentation of precise and timely analysis from the O/C/Ts to derive improved performance the training unit.

7. Track emerging trends. The training teams' standing collection plan, as described in the third tenet, presents an opportunity to provide relevant feedback, not only to the training unit but across broader formations. The first noun in an O/C/T's title inherently positions him/her to observe many tactics, techniques and procedures across a variety of training units. When common challenges are observed across multiple units or innovative solutions are observed, O/C/Ts have an obligation to share this across the force, especially with future training partners. The U.S. Army Center for Lessons Learned (CALL) has the mandate to lead this effort through the analysis of information collected to become Army lessons-learned and shared across U.S. Army Training and Doctrine Command agencies and other major commands.

O/C/Ts should collect and collate their observations for submission to the Joint Lessons-Learned Information System (JLLIS) for CALL's use. O/C/Ts should have access to a JLLIS user with administrative permissions to upload and organize binders of lessons. This

can also serve as a one-source location of knowledge to share with other professional contacts and the various warfighting-function (WfF) centers of excellence. A further important practice for O/C/Ts is to reach out to future training units and share lessons and trends with them. This will help the future unit more effectively prepare for its upcoming rotation as well as to assist the force as a whole to reverse negative trends and reduce the enduring warfighting challenges.

Lastly, an O/C/T must be an avid writer, sharing personal observations, lessons and increasing knowledge within the profession of arms. Participation in WfF symposiums, writing for Army journals and other professional venues is an O/C/T obligation to help shape the future force.

8. Know the scenario design. Throughout this article, the scenario design arises as a key tool to enhance feedback and training opportunities. One of the most important features of an externally evaluated training event is a well-integrated scenario that threads multiple elements together to create opportunities to train the selected tasks. It requires a great deal of planning to build an event that meets a multitude of individual and collective tasks simultaneously across echelon. The first step is to evaluate and forecast the trained/needs practice/untrained status of a unit following completion of its prior collective training. The higher headquarters must provide clear training guidance and endstate. The subordinate unit commander must also identify training objectives and the evaluation focus. Once complete, the planners can begin developing a threaded scenario. The primary events, such as a brigade attack or defense, provide the opportunity to exercise the primary WfF supporting the METL tasks, but it's the injects developed to keep the commanders and staffs engaged in the scenario that make a good training event great.

A good example of a thread could begin with an echelon-above-brigade Intelligence feed that provides a single-source report about a limited objective, such as a high-value target (HVT), in a town. The brigade is then tasked to conduct a raid, which is designed to

Figure 2. Bronco Team O/C/Ts in the field at NTC during July 2015. *(Photo by MAJ Chase Baker)*

interrupt their current plans cycle. The brigade then mission-commands two operations at once (the ongoing and the new one) and apprehends the HVT. The HVT then stresses the use of the human-intelligence control team but provides a warning of a spoiling attack. Concurrently, taking the HVT off the battlefield provides a threaded reduction in enemy information operations, but it causes an increase in local underground support because of some collateral damage. However, the brigade combat team (BCT) then must execute a decision to transition to a hasty defense or re-allocate reconnaissance assets in anticipation of a spoiling attack.

The actions based on this one pre-planned scenario event provides an AAR that covers all the WfFs, and it exercises multiple echelons simultaneously. The senior trainer or senior external evaluator should have multiple options within the scenario each day to increase or decrease the tempo based on unit performance. How much more practice is required against specific previously identified training objectives is a consideration in selecting these options. This may be accomplished as described in the ninth tenet.

9. Interface with higher-control (HICON) and EXCON. The HICON and EXCON are crucial nodes for maintaining the integrity of the scenario as described in the eighth tenet. They create the suitable training environment that will lead to increased performance in the identified tasks. An O/C/T must understand the role of each and be able to effectively interact with them to create the proper conditions for the training unit.

The HICON is responsible for the issuance of orders and collecting appropriate reports from the training unit. In rare instances or in smaller-scale events, the O/C/T can perform either of these roles. However, as described in the first tenet, this may damage the relationship between the O/C/T and the training unit. When O/C/Ts provide direction rather than recommendations, it degrades the feedback's internalization because the unit will no longer self-discover areas for improvement. Instead, it will blame the O/C/T for providing bad directions. This

phenomena of "the O/C/T said" erodes the ability to create improvement in training tasks and must be avoided through the use of HICON. However, the O/C/T must be closely tied with the HICON to ensure synchronization. It is important for O/C/Ts to review orders during the HICON staffing process to identify areas that the unit may misinterpret. This further allows the O/C/T to provide effective feedback through a deep understanding of the unit's directed mission and any constraints imposed by their higher headquarters.

The EXCON may overlap roles with the HICON or may be a separate entity, but in either case it is equally important for an O/C/T to liaise effectively with it to create the appropriate conditions necessary for each training task. This is accomplished by directing all resources involved in the training event, such as the opposing forces, roleplayers, constructive adjacent units and virtual enablers. The scenario drives the entire

exercise, and the O/C/T must be able to affect this to best improve the unit. Furthermore, the EXCON provides many of the tools necessary for effective information collection, and it serves as the repository for the PIRs collected by adjacent team O/C/Ts that may impact others' counterparts.

The EXCON will maintain an SOP which all O/C/Ts must understand and help the training unit to understand. This allows for the implementation of battlefield effects that aren't able to be properly replicated. The EXCON SOP will normally contain standard reports that an O/C/T submits; they should keep these readily available.

Lastly, the EXCON is the invisible shield of safety responsible for managing risks involved in the training exercise, especially as it relates to elements outside of the training unit's control. O/C/Ts fall within this purview and must abide by EXCON regulations and enforce them among all elements

Task Number:	
Task Title:	Training and External Evaluation (EXEVAL) in a High-Fidelity Environment
Task Type:	
Proponent:	O/C/T
Task Data	
Conditions:	Given a unit in a training environment with an in-depth training scenario, adequate support infrastructure for both EXCON and HICON roles, and logistical support for both O/C/T and training unit support.
Standards:	Develop and execute a complex scenario design and provide professional, instrumented and externally evaluated feedback and oversight during home-station and auxiliary-station training.
Safety Notes:	In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, **Composite Risk Management**. Leaders will complete a DD Form 2977, Deliberate Risk Management Worksheet, during the planning and completion of each task and subtask by assessing mission, enemy, terrain and weather, troops and support available, time available and civil considerations (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category to avoid heat-related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, **NBC Protection;** FM 3-11.5, **CBRN Decontamination.** Leaders must perform a risk assessment in accordance with ATP 5-19, **Composite Risk Management**. Leaders will complete a DA Form 7566, Composite Risk Management Worksheet, during the planning and completion of assessing METT-TC.
Environment:	It is the responsibility of all Soldiers and DA civilians to protect the environment and to participate in the Army's Environmental Management System (EMS) at the installation where they are assigned.

Figure 3a. Top part, training and evaluation outline (T&EO) task list.

operating in the training area. The readiness derived from a training event is never worth the loss of life, limb or eyesight. It's also never worth significant damage to equipment. O/C/Ts are the first line in a comprehensive EX-CON plan to mitigate this, and they must effectively work together to minimize risk.

10. Sustain the trainer. The worst-kept secret in the Army is a day in the life of an O/C/T while assisting a unit. The rumors of barbecues, clean clothes and humvee camping are all true. O/C/Ts must have a short logistics tail, but conversely must be self-reliant and independent from the training unit. Any reliance on the training unit provides the opportunity for shortcomings to be blamed on the added stress of the non-organic sustainment requirements. Because O/C/Ts are not under the same internal stresses of the training unit and do not have the responsibility of significant leadership decisions, they should remain better rested, more professionally presentable and tactically patient than the training unit. O/C/Ts must be present for any significant activity taking place, including but not limited to, all MDMP/TLPs, conditions checks, rehearsals and execution as described in the third tenet.

However, not all O/C/Ts need be present for every event. For example, developing roles and responsibilities within an O/C/T team enables a rest and rotation plan. The logistics training team experts may be of little value-added while observing a BCT breach sequence, but they will provide critical reporting 12 hours after the fact during consolidation, reorganization and reconstitution. Conversely, company-grade trainers, who all share a similar "jack of all trades" zone-coverage concept, must ensure refit within their team while maintaining a consistent presence to observe TLPs. The best practice is to simply refit a third to a half of the team during the TLP time-frame and surge to full strength during periods of high-tempo combined-arms maneuver or wide-area security events.

The O/C/T's goal is not to be above it all or appear immaculate, but to maintain a professional and groomed appearance to enhance the reception of

PERFORMANCE STEPS
1. Relationship development
2. Information collection
A) review all unit products
B) identify friction points
I) training objectives
II) leader engagements
III) equipment status
C) develop coaching focuses
D) develop objective PIR that focuses data collection against identified friction and coaching opportunities
3. Maintain a COP
A) maximize use of enablers (MILES/IOS)
4. Technical competence
5. Tactical relevance (matching the appropriate doctrine to the problem)
6. provide feedback
A) determine the appropriate messaging tool
I) AAR
II) key leader engagement/counterpart hotwash
III) working group
B) synchronizing messages across all WfFs
7. Track emerging trends
A) Share the lessons with the force and strengthening the profession.
B) Upload observations to JLLIS
C) Share lessons with future training units
D) Create knowledge through professional writing
8. Scenario design
A) maximizes training objective opportunities
B) provides for cause and effect across all WfFs
9. EXCON vs HICON implementation
A) Liaise with HICON
B) Liase with EXCON
I) retrieve relevant information
II) Submit appropriate reports
III) Maintain a safe training environment
10. O/C/T sustainment
A) self-sustaining to maintain integrity of scenario
B) Professional appearance to gain and maintain credibility

PERFORMANCE MEASURES:	GO	NO-GO
1. Professional introduction to the training team		
2. Develop and collect pre-rotation PIR to identify initial coaching opportunities and potential rotational friction		
3. Maintain a COP		
4. Use appropriate doctrinal and technical references		
5. Provide formal AAR feedback		
6. Understand and maintain the scenario design through both EXCON and HICON		
7. Execute logistical operations transparent to the training unit		

ITERATION:	1 1	1 2	13	14	Is	IM	IT
TOTAL TASK STEPS EVALUATED							
TOTAL TASK STEPS GO							
TRAINING STATUS GO/NO-GO							

Figure 3b-c. Middle and bottom parts of a simulated T&EO task list.

feedback. To quote a former senior trainer, "you don't have to look perfect, you just have to look better than the training unit." Properly sustaining the trainers is paramount to providing clear, level-headed feedback to the training partner. It also mitigates risk for trainers who often operate independently.

Whether via eXportable Combat Training Capability, home-station training or at the CTCs, O/C/Ts are the first shaping operation to enable a unit to

accomplish its training tasks. External evaluation is the gold-standard method of assessment for units conducting collective task-focused training, preparing for a CTC rotation or completing requirements prior to contingency operations.

This article and its accompanying proposed training and evaluation outline task list (Figure 3) provide 10 tenets for those serving in an O/C/T position. Adopting these means the O/C/T provides maximum value to his or her partnered unit. Filing the gap of O/C/T performance doctrine will not only improve O/C/T performance but improve the readiness of our force as a whole.

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MAJ Chase Baker is operations officer for 2-13th Cavalry, 3rd Armored Brigade Combat Team, 1st Armored Division. When he co-wrote this article, he was the live-fire operations officer with NTC's Operations Group, Fort Irwin. Other assignments include assistant brigade operations trainer, Ops Group, NTC, Fort Irwin; assistant squadron operations trainer and troop trainer, Ops Group, NTC; commander, Company C, 52nd Infantry, Joint Base Lewis-McChord, WA; and platoon leader, 3rd Platoon, Company C, 1-35 Armor, Baumholder, Germany. His military education includes CGSC, Cavalry Leader's Course, Maneuver Captain's Career Course, Armor Officer Basic Course and Air Assault School. He holds a bachelor's of science degree in international relations from the U.S. Military Academy at West Point and is currently a master's of business administration candidate with the George Herbert Walker School of Business and Technology.

Continued from Page 31

Overview of Stryker Brigade Combat Team development and initial entrance into combat.

Combat operations

• Center for Army Lessons Learned (CALL), 17-01, *Scouts in Contact, Tactical Vignettes for Cavalry Leaders Handbook*, 8 Dec 2016 [CAC].

Full of vignettes developed by subject-matter experts at the National Training Center to help lead teams through a variety of scenarios that will help challenge young reconnaissance leaders' decision-making skills. Facilitator instructions guarantee you have the information needed to make leaders and teams successful.

• James R. McDonough, *The Defense*

Recommended Reading for Professional Development

Listed by general subject rather than command echelon

of Hill 781: An Allegory of Modern Mechanized Combat.

Follows the fictional exploits of a lieutenant colonel who has died and found himself in purgatory (which happens to be the National Training Center). He must atone for his sins as an officer through the successful completion of six missions. A modern version of *The Defence of Duffer's Drift*, it provides a light-hearted tactical primer for making serious command decisions and learning lessons about tactics, people and what it takes to win a battle.

• Dale Wilson, *Treat 'Em Rough!* [commercial publication].
Narrative of American tank experience in World War I.

• Harry Yeide, *Steeds of Steel: A History of American Mechanized Cavalry in World War II* [commercial publication].
Readable overview of the varied experiences of mechanized cavalry in all theaters of operations, including the Pacific.

Iron Brigade's Combat-Team Pursuit of Mobile Command-Post Capabilities

by COL Charles Lombardo and MAJ Ken Selby

Command posts (CPs), no matter the formation which sets them up, are a concern for today's battlefield. As GEN Mark Milley, Army Chief of Staff, said at the Association for the United States Army luncheon Oct. 4, 2016, "Our brigade [CPs] must be able to jump within two to three minutes or they will be destroyed."

Since 2nd Brigade Combat Team (BCT), 1st Armored Division, spent the past six years serving as the Army Experimental Task Force (AETF) for the Brigade Modernization Command (BMC) and the Army Capabilities and Integration Center, we have some lessons-learned to share with the force. The Army established 2/1 Armor under BMC to evaluate the network and other Army modernization technologies and to develop tactics, techniques and procedures (TTPs) for their employment.[1]

This article's purpose is to describe the Iron Brigade's final assessment during Army Warfighting Assessment (AWA) 17.1 in October 2016 and to offer potential TTPs to improve expeditionary and uninterrupted mission command (MC), leveraging the Warfighter Information Network-Tactical (WIN-T) Increment 2 network and mobile CP solutions.[2]

Gaps

While 1st Armored Division and 2nd BCT have made great strides in developing expertise for integrating the WIN-T Increment 2 network, the brigade has not been able to make the required progress in developing the entire MC system,[3] particularly the CP's materiel aspects, and in refining the doctrine that tactical echelons use to simultaneously command-and-control combined-arms maneuver and wide-area security in decisive action (DA). The fact that the Standardized Integrated Command Post System (SICPS) is in sustainment phase has further exacerbated the materiel gap in capitalizing on the gains of uninterrupted MC.

In addition to addressing the aging and static tent-based CP solutions, the Army needs to relook the codification of doctrinal TTPs for brigade-and-below CP. Our current doctrine, Field Manual (FM) 3-96, ***Brigade Combat Team*** (October 2015), describes the six principles of MC and lays out MC tasks. The FM even provides duty descriptions for the staff officers. However, what the FM doesn't contain is the science aspects of command-and-control at BCT or battalion level. Current doctrine doesn't address the application of personnel and networks to the different echelons of CPs within the battalion or brigade.

The "old" way – something like the configuration in Figure 2, which is an illustration from FM 71-123, dated September 1992 – is still worthy of emulation. The graphic clearly identifies the personnel, network and multiple CP configurations from the initial SICPS methodology.

In addition to the doctrine and layout of CPs from a network and hardware perspective, our current doctrine lacks the how-tos of integrating personnel. In the DA environment – with the focus on continuous operations and removal of "suspension of battlefield effects" – the BCT must account for the integration of key personnel in their staff roles for CP analysis and functions as well as for the CP's security aspects. The BCT must integrate key staff personnel into dedicated security teams of the distributed CPs.

This shift to DA should jump-start a doctrine, organization, training, materiel, leadership and education, personnel and facilities review of personnel (nodes) networks, functions and security over time in an attempt to place the appropriate personnel by echelon in each CP.

A second gap in our MC systems is the CP materiel solution. The current CP structure is vulnerable to a variety of attacks and lacks mobility as well as

Figure 1. 2/1 Armor's main CP in May 2016 during NIE 16.2. The unit's previous CP had a large footprint (11 tents and 2 battalion TAAs; long setup/teardown times; and a significant logistical tail, nor was it survivable in a DATE environment.
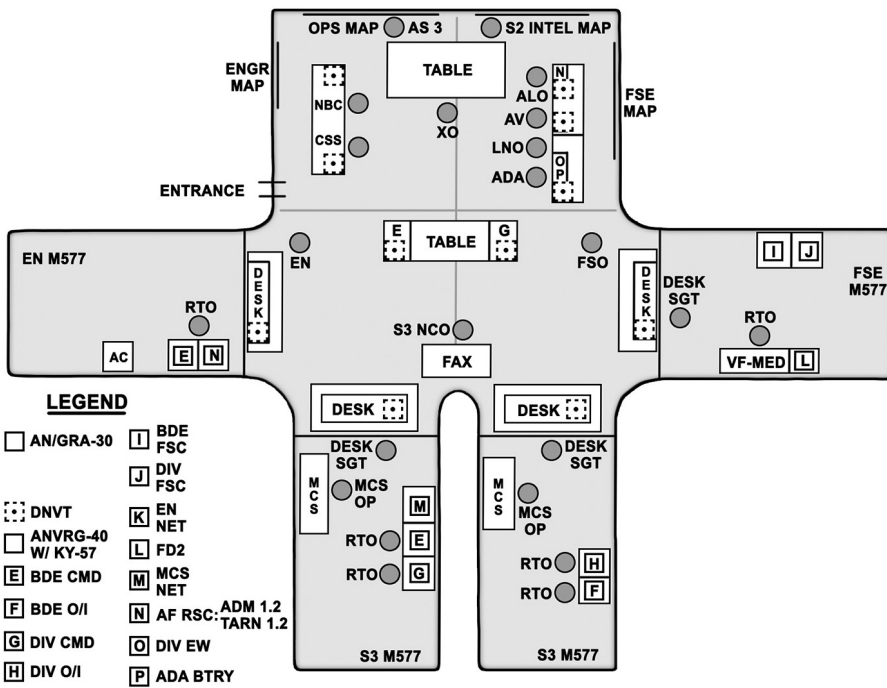
Figure 2. BCT main CP with established SICPS (T configuration). *(From FM 71-123, Figure 1-3)*

OPS MAP   AS 3   S2 INTEL MAP
ENGR MAP   TABLE   FSE MAP
NBC   XO   ALO / AV / LNO / ADA
CSS
ENTRANCE

EN M577   E   TABLE   G   FSE M577
EN   FSO   I   J
RTO   DESK   S3 NCO   DESK   DESK SGT   RTO
AC   E N   FAX   VF-MED L

LEGEND

	AN/GRA-30	I	BDE FSC
	DNVT	J	DIV FSC
	ANVRG-40 W/ KY-57	K	EN NET
E	BDE CMD	L	FD2
F	BDE O/I	M	MCS NET
G	DIV CMD	N	AF RSC: ADM 1.2 TARN 1.2
H	DIV O/I	O	DIV EW
		P	ADA BTRY

DESK   DESK
DESK SGT   DESK SGT
MCS   MCS OP   MCS   MCS OP
RTO   E   RTO   H
RTO   G   RTO   F
S3 M577   S3 M577

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survivability. Near-peer threats are able to detect and target MC nodes due to their large signature. As a result, the operational force seeks to standardize CPs that are austere, mobile, expeditionary and – from an electromagnetic (EM) aspect – able to match mobility and survivability with the subordinate maneuver forces they support.

Note that the physical and EM signature of large CPs present a significant opportunity for the opposing force to disrupt the BCT's initiative by employing effective combined-arms attacks that deplete BCT resources while hindering the BCT staff's ability to synchronize reconnaissance, fires and logistical support.

Acknowledging these unsettling realities, 2/1 Armor identified that its CP was vulnerable to precisely this type of coordinated attack in a decisive-action training environment (DATE) construct. The vulnerabilities:

- **It *looked* like a CP.** The brigade's CP consisted of 11 Airbeam tents centering off one large tent; three 40-foot wings housed the brigade warfighting functions (WfF) and command group.

- **It was *big*.** The CP's sheer size presented a clear confirmation to a reconnoitering enemy that the CP was either a brigade- or division-sized element.

- **It took too much time.** Setup and teardown times ranged between 10 to 20 hours, depending on Soldier training and experience level.

- **It consumed too much manpower and transportation resources.** The CP required extensive manpower and lift assets using many offloaded transit cases and up to 5,000 feet of CAT-5 cabling.

- **It ate too much power.** This large and overly cumbersome CP consumed large quantities of resources and power generation that required a significant logistical tail.

Fixes

With an upcoming National Training Center rotation, the brigade decided to immediately reduce our CP footprint during AWA 17.1. To combat the cumbersome and static CP structure, 2/1 Armor's vision was to capitalize on the WIN-T Increment 2 network by creating an uninterrupted-MC philosophy that enabled the BCT to exercise MC across multiple locations with built-in WfF and leader redundancies. This CP would be capable of fusing intelligence and enabling subordinate units to simultaneously prosecute the hybrid

enemy in the DATE. Achieving this distributed MC TTP gives the commander "reach."[4]

- **Look.** Leveraging upgraded vehicle capabilities developed during six years as the AETF under the network-integration evaluations (NIE), 2/1 Armor replaced the Airbeam tents with four M1087 expansible vans, two M1079 vans and two Light Medium Tactical Vehicle-linked Sesolinc containers. Facilitated by BMC, the brigade upgraded one M1087 that housed 10 workstations with Secure Internet Protocol Router (SIPR)/Non-secure Internet Protocol Router (NIPR)/Coalition enclaves, two built-in projectors, five mounted whiteboards, light-emitting diode (LED) lighting and an improved environmental-control-unit (ECU) system. The 2/1 Armor also used two upgraded M1079 vans converted into CP platforms (CPP) that eliminated the four-humvee SICPS-solution CPPs.

- **Size.** By employing three more M1087s and two more M1079s, the brigade reduced its footprint from 17 to one 20-foot-by-32-foot tent with accompanying vehicles. This vehicle-based CP housed the S-2, S-3, S-4 and S-6 sections as well as a Temporary Sensitive Compartmented Information Facility (T-SCIF) and mobile brigade intelligence-support element (BISE). From this design, the brigade leveraged its WIN-T Increment 2 on-the-move (OTM) capability employing two points of presence (PoP) as an enroute CP.

- **Time.** Incorporating this mobile CP concept, the brigade developed an early-entry CP as well. After multiple CP jumps during AWA 17.1, 2/1 Armor decreased BCT jump times from 18 hours to under two hours near the exercise's end. Also of note, the CPP trucks are invaluable should a vehicle breakdown occur, as the server stacks are easily removable while housed in transit cases. The opposite is true with the Army SICPS solution, as hard-mounted server-stack removal requires hours of tedious work while the network remains cold.

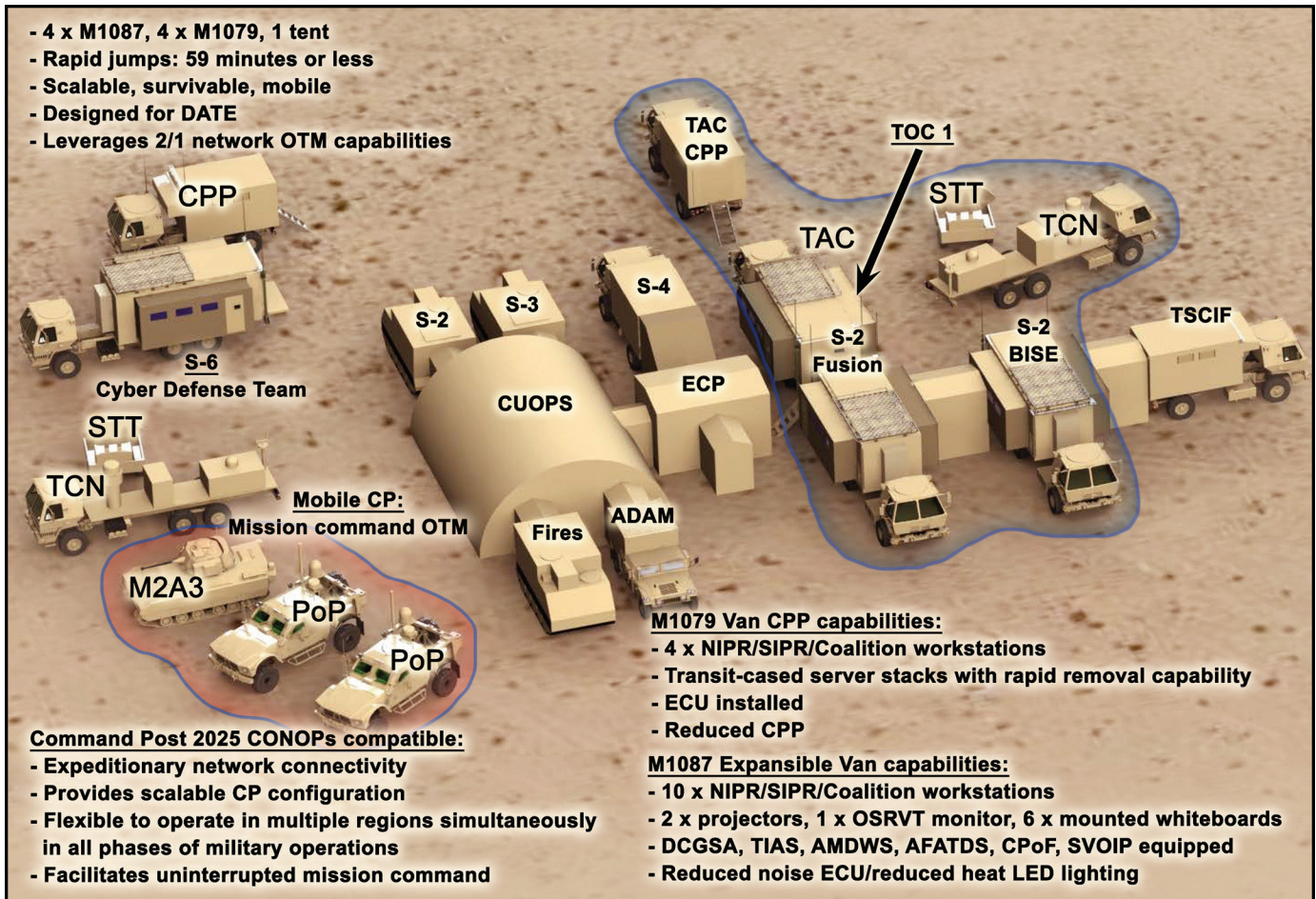- **Manpower and transportation.** To lessen electromagnetic-field (EMF)

- 4 x M1087, 4 x M1079, 1 tent
- Rapid jumps: 59 minutes or less
- Scalable, survivable, mobile
- Designed for DATE
- Leverages 2/1 network OTM capabilities

CPP

TAC CPP

TOC 1

STT

TCN

TAC

S-4

S-3

S-2

S-2 Fusion

S-2 BISE

TSCIF

S-6
Cyber Defense Team

ECP

CUOPS

STT

TCN

Mobile CP:
Mission command OTM

M2A3

PoP

PoP

Fires

ADAM

M1079 Van CPP capabilities:
- 4 x NIPR/SIPR/Coalition workstations
- Transit-cased server stacks with rapid removal capability
- ECU installed
- Reduced CPP

Command Post 2025 CONOPs compatible:
- Expeditionary network connectivity
- Provides scalable CP configuration
- Flexible to operate in multiple regions simultaneously
** in all phases of military operations**
- Facilitates uninterrupted mission command

M1087 Expansible Van capabilities:
- 10 x NIPR/SIPR/Coalition workstations
- 2 x projectors, 1 x OSRVT monitor, 6 x mounted whiteboards
- DCGSA, TIAS, AMDWS, AFATDS, CPoF, SVOIP equipped
- Reduced noise ECU/reduced heat LED lighting

Figure 3. 2/1 Armor mobile CP endstate during AWA 17.1.

emissions while further reducing the CP's footprint, 2/1 Armor developed a tactical-operations center (TOC) 1/ TOC 2 concept that distributed the infrastructure geographically while still being interconnected using MC systems. TOC 1 is analogous to a BCT tactical-actions center (TAC) but robust in capability. Using vehicles to plug in and out of different TOC configurations, 2/1 Armor created scalability that provided redundancy and depth in MC and gave the commander options to choose the capabilities he wanted at each CP, depending on the mission set. The 2/1 Armor increased survivability as well by distributing the footprint using hardened vehicles and lowering the EMF signature in any one location. This CP design complicated the enemy's reconnaissance efforts since the MC nodes broadcast battalion-size elements.

Reducing the footprint forced the brigade staff to eliminate redundant command, control, communications,

computers, intelligence, surveillance and reconnaissance systems plus computer-screen clutter. Shrinking seat capacity also placed more personnel on security, facilitating insurgent ground-attack deterrence. The brigade also eliminated many sleep tents while dispersing the engineer and fires battalions into noncontiguous tactical-assembly areas (TAAs), further distributing the brigade's MC nodes. The brigade also eliminated boot tents connecting the vehicles to the tents to further reduce setup times.

Using a fold-out awning attached to the vehicle platform is an alternative boot option the United Kingdom's army uses and can be set up in less than two minutes.

The Iron Brigade used a variety of platforms: M1087 and M1079 vehicle upgrades were conducted by a contracted design and engineering company or by unit personnel using military work orders. The ECU upgrade was the most critical, however. The standard M1087

ECU is too loud and hinders verbal communication, forcing the staff to either turn it off during meetings – producing an uncomfortably hot environment – or shouting with the ECU kept on.

Also, the BCT used a container-based-system CP node for our CPP and for the build of the alternate CP. These recent restorations have led to a Defense Logistics Agency Class IX parts-kit solution that can be procured or modernized in the Army system using Global Combat Support System (GCSS)-Army.

• **Power.** Further CP footprint reduction measures and time-saving include intelligent power generation/ distribution, transport convergence via Modular Communications Node-Advanced Equipment (MCN-AE) and wireless CP capability. Increasing power-generation efficiencies while reducing generator clutter further reduces the CP footprint and gives time back to noncommissioned officers and mechanics. The 2/1
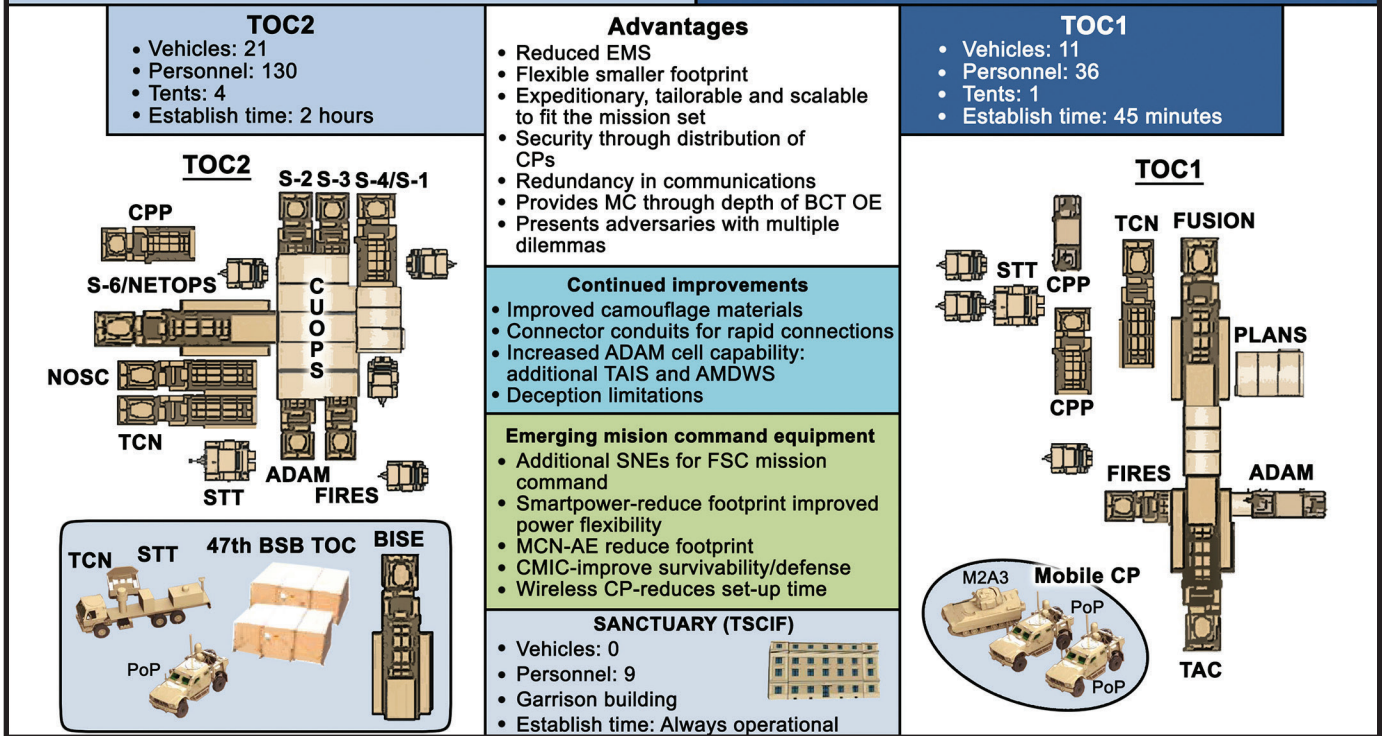
Figure 4. 2/1 Armor employs distributed MC capability while reducing EMF in any one location.

Armor used the Advanced Medium Mobile Power Source microgrid during NIEs 16.1 and 16.2 and decreased the CP generator count from 14 to four 60-kilowatt generators running in parallel using intelligent power distribution. The entire power-generation package fits on one C-17 pallet. Also, the MCN-AE performed well during NIE 16.2 and replaced the bulky Trojan system's two humvees and trailers with two Pelican cases. This system linked into the WIN-T Increment 2's tactical-component network (TCN) for network access while showing no visible degradation in bandwidth capacity. These complementary CP systems provide more footprint reduction options to BCTs working to shrink their CPs.

The vehicle-based configuration is a logical and cost-effective solution to produce a scalable, survivable and expeditionary BCT CP designed to fight

and win in a DA environment. This CP configuration does not require an Army acquisitions-system development and fielding cycle, as the materiel solution already exists in our inventory.

Multi-domain battle poses a significant problem to large stationary TOCs, indicating that the current Army SICPS BCT CP solution requires changes to MC node design and configuration. Countering this requires CP mobility, scalability and survivability that is achievable with the proposed CP design described in this article. BCTs should not wait years for a future Army-approved BCT CP solution and subsequent fielding with a "fight tonight" readiness goal. We recommend consideration to implement this actionable CP concept for all BCTs as an interim solution while the Army develops a long-term solution commensurate with Command Post 2025 concept-of-operations

(CONOPS) principles.

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MAJ Ken Selby is the deputy G-3, 1st Armored Division, Fort Bliss, TX. Previous assignments include deputy brigade
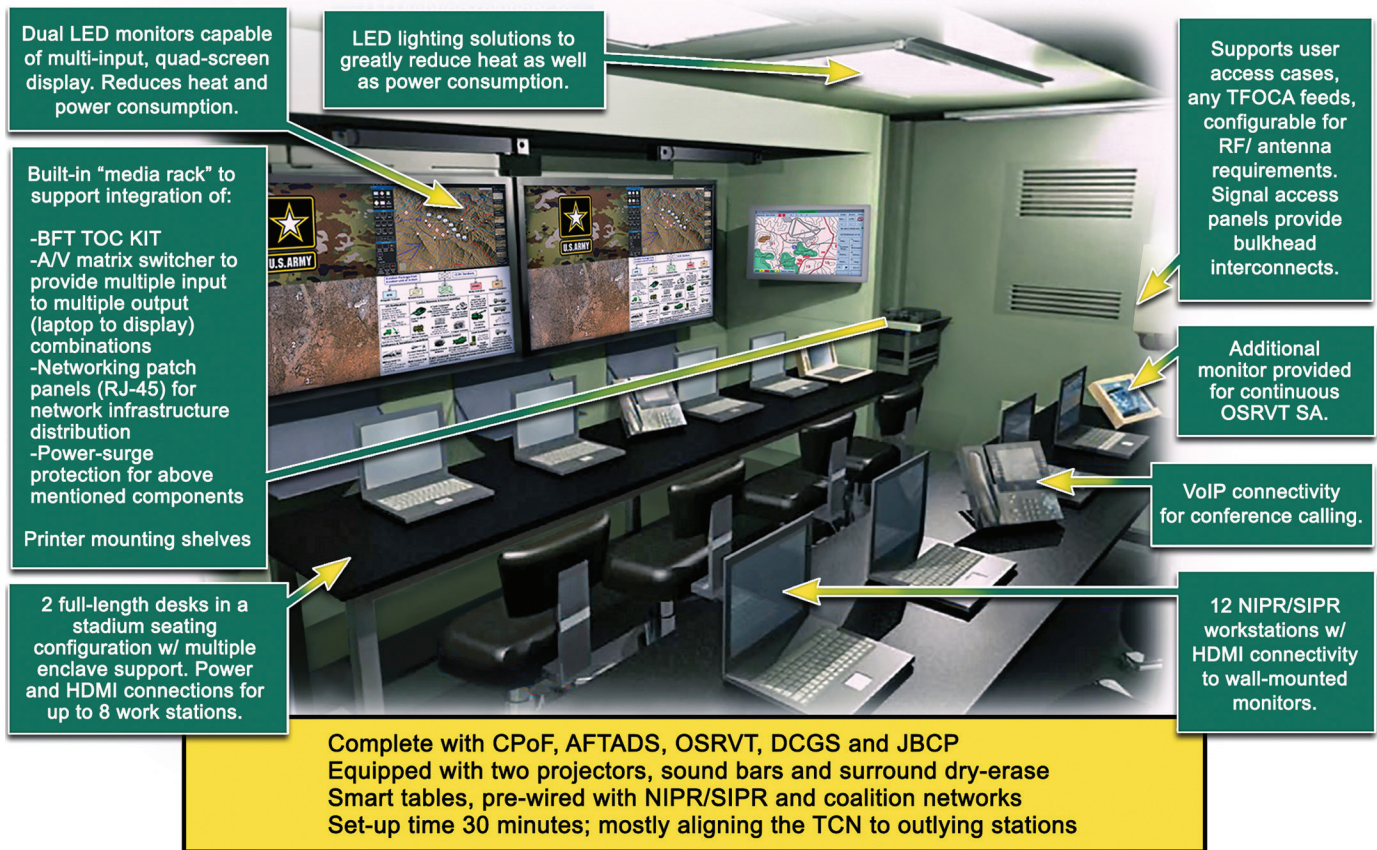
Figure 5. Modernized M1087 Expando van as a combat information center (CIC) variant. Thirty minutes forward-operations establish time.

commander, 2nd Armored BCT (ABCT), 1st Armored Division, Fort Bliss; battalion executive officer, 1-35 Armor, 2nd ABCT, 1st Armored Division, Fort Bliss; battalion operations officer, 1-35 Armor, 2nd ABCT, 1st Armored Division, Fort Bliss; and mission planner, Southwest Regional Support Team, Joint Task Force-North, Fort Bliss. His military schooling includes Command and General Staff College, Cavalry Leader's Course, Armor Captain's Career Course and Field Artillery Officer Basic Course. He holds a bachelor's of arts degree in psychology from the University of California-Davis and a master's of arts degree in management and leadership from Webster University. His awards include the Bronze Star Medal with two oak-leaf clusters, Defense Meritorious Service Medal and Meritorious Service Medal.

Notes

[1] https://www.army.mil/article/51926/brigade-modernization-command/.

[2] See Army News Service, https://www.army.mil/article/177286/awa_171_increasing_the_pace_of_battle_in_a_coalition_environment, for more information.

[3] Army Doctrinal Reference Publication 6.0, **Mission Command**, defines *mission command system* as the arrangement of personnel, networks, information systems, processes, procedures, facility and equipment that supports the philosophy of mission command as well as the mission-command warfighting function.

[4] This interpretation of *reach* is defined as collaboration, shared situational understanding and effective relationships with key actors. From **Mission Command Network Vision and Network**, Mission Command Center of Excellence, Fort Leavenworth, KS.

ARMOR ⤙

ABCT – armored brigade combat team
ADAM – air-defense airspace management
AETF – Army Experimental Task Force
AFATDS – Advanced Field Artillery Tactical Data System
AMDWS – Air and Missile Defense Workstation **or** Army Missile Defense Warning System
A/V – audiovisual
AWA – Army Warfighting Assessment
BCT – brigade combat team
BFT – Blue Force Tracker
BISE – brigade intelligence-support element
BMC – Brigade Modernization Command
CIC – combat information center
CONOPS – concept of operations
CP – command post
CPoF – Command Post of the Future
CPP – command-post platform
CUOPS – current operations
DA – decisive action
DATE – decisive-action training environment

DCGS-A – Distributed Common Ground System-Army
ECP – entry control point
ECU – environmental-control unit
EM – electromagnetic
EMF – electromagnetic field
EMS – electromagnetic signature
FM – field manual
FSC – forward-support company
HDMI – high-definition multimedia interface
JBCP – Joint Battle Command Platform
JMC – Joint Modernization Command
LED – light-emitting diode
MC – mission command
MCN-AE – Modular Communications Node-Advanced Equipment
NetOps – network operations
NIE – network integration evaluation
NIPR – Non-secure Internet Protocol Router
NOSC – Network Operations and Security Center
OE – operational environment
OSRVT – One-System Remote Video Terminal

OSRVT-SA – One-System Remote Video Terminal situational awareness
OTM – on-the-move
PoP – point of presence
RF – radio frequency
SAMS – School of Advanced Military Studies
SICPS – Standardized Integrated Command Post System
SIPR – Secure Internet Protocol Router
SME – subject-matter expert
STT – small tactical terminal
SVOIP – Secure Voice over Internet Protocol
TAA – tactical-assembly area
TAC – tactical-actions center
TCN – tactical-component network
TFOCA – tactical fire-operations cable assembly
TOC – tactical operations center
TSCIF – Temporary Sensitive Compartmented Information Facility
TTP – tactics, techniques and procedures
WfF – warfighting function
WIN-T – Warfighter Information Network-Tactical

Continued from Page 56

• Gene E. Salecker, ***Rolling Thunder Against the Rising Sun*** [commercial publication].
Details operations of Army tank units in the Pacific during World War II – good illustration of the use of armor to support forcible-entry operations.

• Donn Starry, ***Mounted Combat in Vietnam*** [CMH publication].
Readable text detailing the role of armor/cavalry in counterinsurgency; highlights versatility and adaptive qualities at a time when mounted counterinsurgency doctrine was largely nonexistent.

• Robert S. Cameron, ***Armor in Battle*** [CMH/APD publication].
Collection of tactical engagements spanning experience of American armor from the interwar years through Operation Iraqi Freedom/Operation Enduring Freedom.

• Jon T. Hoffman (ed), ***Tip of the Spear: U.S. Army Small Unit Action in Iraq, 2004-2007*** [CMH publication].

• John J. McGrath (ed), ***Between the Rivers: Combat Action Iraq 2003-***

Recommended Reading for Professional Development

2005 [CSI publication].

• William G. Robertson (ed), ***In Contact! Case Studies from the Long War***, Vol. 1 [CSI publication].

• Donald P. Wright (ed), ***Vanguard of Valor: Small Unit Actions in Afghanistan***, Vol 1 [CSI publication].

• Donald P. Wright (ed), ***Vanguard of Valor: Small Unit Actions in Afghanistan***, Vol. 2 [CSI publication].

• David Zucchino, ***Thunder Run*** [commercial publication].
Detailed description of the planning, preparation and execution of the April 2003 armored operations into Baghdad.

• Kendall Gott, ***Breaking the Mold: Tanks in the Cities*** [CSI publication].

Collection of urban operations in which armor played a significant role.

• Asymmetric Warfare Group, ***The Defense of Battle Position Duffer***
National Training Center narrative covering electromagnetic warfare, spectrum management, operational security, social media, information operations and others. Focused on brigade and below.

• William Haponski, ***Danger's Dragoons: The Armored Cavalry of the Big Red One in Vietnam***, 1969 Cantigny Park: First Division Museum, 2014.
Discussion of an armored-cavalry task force conducting multi-national combat operations in restrictive terrain.

• James Sawicki, ***Cavalry Regiments of the U.S. Army***, Dumfries, VA: Wyvern Publications, 1985

• Stephan Bourque and John Burdan, ***The Road to Safwan: The 1st Squadron, 4th Cavalry in the 1991 Persian Gulf War***, Denton: University of North Texas Press, 2007
Describes an armored-cavalry squadron conducting forced entry.

FROM THE BORESIGHT LINE

Armor Accuracy Checks?

**by SFC Joseph Cook and
SFC John Roberson**

Based off a recent poll from master-gunner candidates, 85 percent stated they have never done armor accuracy checks (AACs). Out of the 15 percent who have conducted AACs, more than half realized they had conducted them incorrectly.

An excessive amount of the Abrams fleet currently requires discreet computer correction factors (CCF) during screening. The fleet CCF is designed to encapsulate 90 percent of the tanks in the force. The discrepancy between the two numbers can usually be related to the fact that AACs are not being conducted to standard.

Despite the fact that the M1A2 platform can conduct 52 ballistic solution checks on its own, this only accounts for one of the six AAC steps listed in the training manual (TM). The main-gun-mount check is the first step in conducting AACs. This step ensures that the main-gun recoil system parts are assembled correctly and that each time the gun is returned to battery, it is in the same position. Failing to

successfully complete this step could lead to round-to-round dispersion, causing master gunners to give discreet CCFs based on a correctable maintenance checks. This causes units to fire additional rounds and could potentially lower the crew's confidence in the platform's ability.

You may be wondering why tanks that have not had AACs performed on them can still fire accurately. Think about it like this. If your car's manual requires an oil change every 5,000 miles, you may be good at 6,000 miles, but eventually if the car is left unserviced, this will lead to catastrophic failure. AACs are a monthly check.

As leaders, how do we ensure units are conducting AACs to standard? Check your motorpools for an AAC solution board; ask to see a crew's AAC worksheet; ask the crew what version of software their tank is currently running; and ensure that the AAC steps are correct for the version of software the tank is currently running. These steps will help a leader identify if a crew is properly maintaining their equipment in accordance with the TM.

Currently there are two versions of software you should expect to encounter in the fleet: 4.4.2 and 4.5. Crews still using Appendix Alpha of the heavy brigade combat team's TM – which is for software versions 4.0, 4.2 and 4.3 – will incur false ballistic solution failures. Crews must ensure they are using the appropriate ballistic solution chart for the version of software the tank is running. If you do not have the proper publication for the version of software you are running, notify your Abrams field-service representative.

With the increasing capabilities of threat tanks, it is more important than ever that we are achieving first-round kills. This is accomplished by conducting maintenance to standard and ensuring we are conducting AACs properly. Bottom line: the live-fire accuracy screening test is not a maintenance check, but monthly AACs are!

BOOK REVIEWS

Hitler's Ardennes Offensive: The German View of the Battle of the Bulge, Danny S. Parker, editor, London: Greenhill Books, 1997; reprint by First Skyhorse Publishing, 2016, 264 pages, $14.95.

The first printing in 1997 of this book was advertised "as a unique work giving unparalleled insight to the German view." There is little in the 2016 reprint to qualify it as insightful or unique. Parker's editing lacks analysis, and he merely stitches together the reminiscences of the senior German officers who planned and executed *Wacht am Rhein*. (Their views are now readily available from other sources.) Parker apparently assumed that the casual reader could draw his own conclusions about the complexity of corps- and army-level operations by solely examining the German perspective of this campaign.

This work won't satisfy the curiosity of accomplished military historians. Parker's introductions to each section are short biographic sketches and mile-wide but inch-deep summaries of the officers' recollections. His endnotes after each introduction are more valuable than his text; the lack of a bibliography reflects Parker's lack of scholarship. It is inconceivable that there are only two maps, one depicting the German operational plan and the other describing the general traces of each German division's axis of advance. Parker shortchanges the professional soldier by not including a systematic battle analysis and detailed maps depicting the ebb and flow of the campaign. There is much to learn about the operational level of war from the Ardennes Offensive. Unfortunately, Parker fails to synthesize the thinking of the German generals into a coherent examination of how the German army practiced the operational level of warfare during the closing months of World War II.

The quality of the detailed after-action reports, questionnaires and interviews of the German officers is the result of the professionalism and diligence of COLs William A. Ganoe, S.L.A. Marshall, Harold Potter and MAJ Kenneth Hechler, the transcribers and translators from the European Theater of Operations Historical Section. The German officers' responses to questionnaires and interrogatories are incisive and professional rather than self-serving.

The exception is shown in the transcript of the interview of SS Sixth Panzer Army commander SS-Oberstgruppenfuhrer Josef "Sepp" Dietrich, which exposed his effort to hide the truth. With the SS considered a war-crimes organization and the Nuremburg War Crimes Trials looming, Dietrich attempted to distance himself from Hitler by claiming that at the Dec. 12, 1944, commanders' conference, he advised Hitler that the offensive was unworkable. Dietrich struggled to deny any knowledge of the Malmedy Massacre, yet he stated he directed an investigation of the event.

It was a stretch to consider Dietrich a professional military officer; as late as 1934 he was merely Hitler's driver.

Six weeks before the offensive, Hitler personally assigned Generalmajor Fritz Kramer as the SS Sixth Panzer Army's chief of staff. Kramer was a highly regarded regular-army officer who a month before the attack assumed responsibility for final planning. Kramer describes how the emphasis on operational security denied the Germans the opportunity for detailed reconnaissance of the front-line disposition of allied units.

Sixth Panzer Army commander General der Panzertruppen Hasso von Manteuffel considered the leadership and the quality of German soldiers inferior to those who invaded France in 1940.

With most units undermanned and lacking enough material, they were unable to affect a speedy exploitation of the armies' initial penetration of the Allies' defenses. He criticized the Supreme Command's unwillingness to consider the Allies' ability to rapidly respond to the initial attack.

Seventh Army General der Panzertruppen Erich Brandenberger's recollections do well in reflecting American forces' dispositions, capabilities and conduct of combat operations. His written recollections serve as a standard for battle analyses. Today's commanders and staff officers can learn much from how he established operational security and conducted operational planning.

Gunther Blumentritt in his critique of the Ardennes operation unambiguously concludes that by December 1944 Germany had lost the war, although it was still fighting virtually everywhere in Europe. Allied airpower's destruction of Germany's industry and infrastructure rendered it incapable of offensive operations.

The German officers were unanimous as to why the offense failed. From the start, Germany lacked adequate ground forces and air parity. Shortages of petroleum products, transportation vehicles, engineer equipment and spare parts hindered the German army's ability to exploit its early successes after its initial attack. The sole advantage of surprise was lost because of the Allies' greater mobility, combat power and leadership's flexibility in hastily strengthening its defenses, followed by rapidly counterattacking the enemy's flanks. The Germans believed that the failure of the Ardennes Offensive was preordained because Hitler and his sycophants Keital and Jodl were wishful amateurs who were unable to execute a complex military operation on faith alone.

RETIRED LTC LEE F. KICHEN

16TH CAVALRY REGIMENT

STRIKE HARD

The regiment was constituted in 1916 and organized with personnel from 3rd, 6th and 14th Cavalry. Green was the color of the facings of the Mounted Rifles, now 3rd Cavalry. The embattled partition line commemorates the first engagement of 6th Cavalry when it assaulted artillery in earthworks at Williamsburg in 1862. The shield is yellow, the Cavalry color; the blue chevron is for the old blue uniform; the 16 mullets (spur rowels) indicate both the numerical designation as well as mounted service. The distinctive unit insignia was originally approved for 16th Cavalry Oct. 28, 1958. It was amended to correct the symbolism June 23, 1960. It was redesignated for 16th Armor Aug. 22, 1968. The insignia was redesignated for 16th Cavalry May 12, 1970. It was amended to update the description and symbolism April 3, 2012.

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