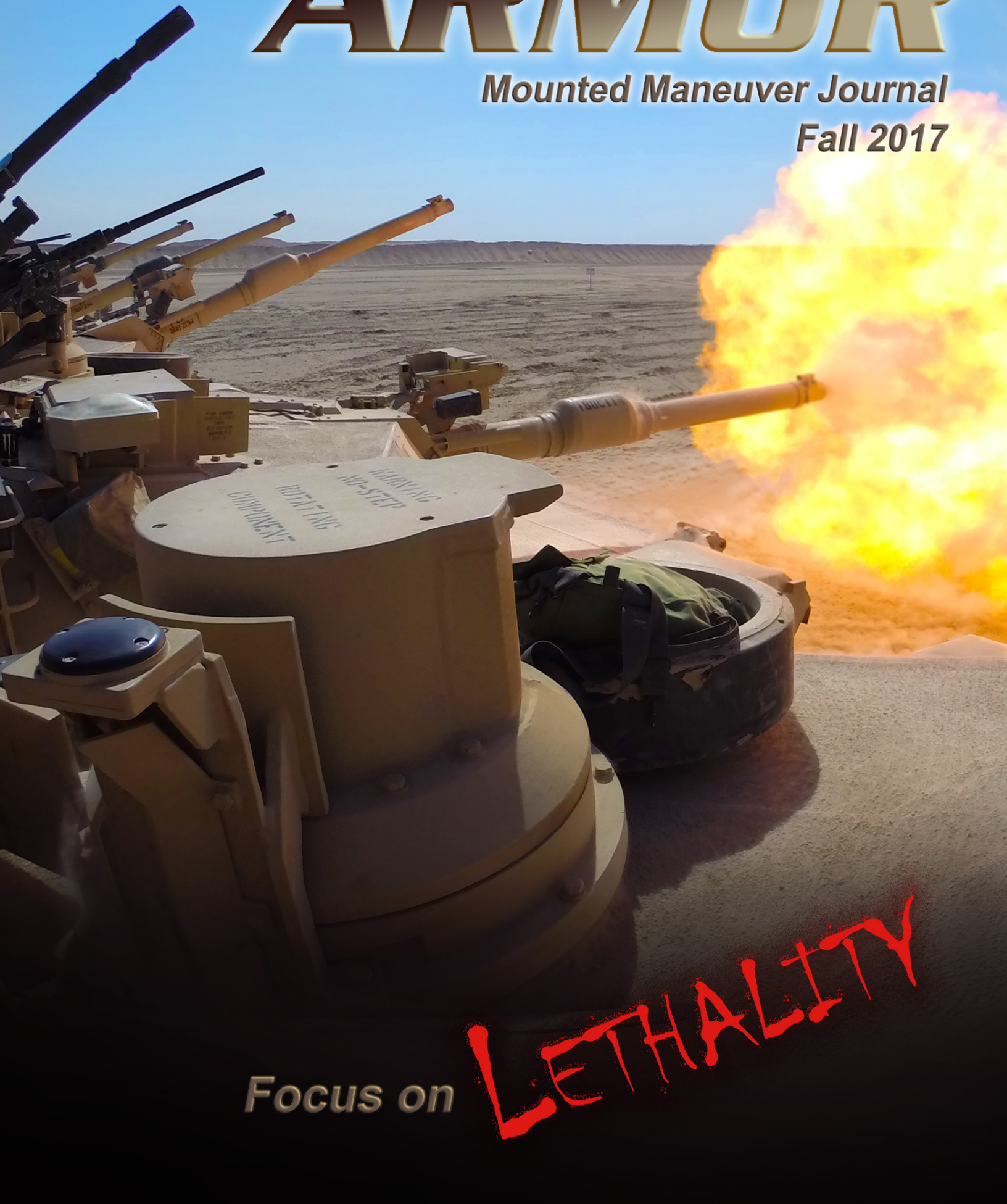


ARMOR

Mounted Maneuver Journal

Fall 2017



Focus on

LETHALITY

ARMOR

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LETTERS

Dear Editor,

The Spring 2017 issue (<http://www.benning.army.mil/armor/eARMOR/content/issues/2017/Spring/2Metz17.pdf>) had an excellent and thought-provoking article by CPT J. Scott Metz, "Overtasking and Its Effect on Platoon and Company Tactical Proficiency: an Opposing Forces and Observer/Coach/Trainer Perspective." I have taken the liberty of offering some reflections on his theme.

I was dismayed to read Metz's article – because, like Yogi Berra's quip that it's "déjà vu all over again," this is a sad situation we have seen before. As an armored-cavalry-troop and tank-company commander, tank-battalion S-3, separate armored brigade S-3 and cavalry-squadron commander, the overtasking dilemma is one with which I am, unfortunately, all too familiar.

Of course, there are always creative ways to squeeze training into other duties: concurrent training on ranges, tactical rather than administrative roadmarches, adding Soldier skills training to maintenance periods and guard duty, reverse cycle night-training periods and so on. Every issue of **ARMOR** has training tips, and the Army is much better at capturing lessons-learned and disseminating these than it once was. These initiatives do help the beleaguered commander get the proverbial 10 pounds of poop into a five-pound bag, but they do not solve the problem.

The problem is leadership failure. Napoleon said, "Ask me for anything but time." It is all well and good that the Chief of Staff of the Army (CSA) and U.S. Army Forces Command (FORSCOM) commanding general state that training is first priority, but **someone** has allowed all that non-mission-essential-task-list (METL) "mandatory" training to be added to unit training programs across the Army. If not the CSA and FORSCOM commander, then who is accountable? Who could and should have just said, "No!" Commanders at every level down the chain of command similarly failed to protect

METL training time. Boutique training issues (in other words, non-METL-related) constantly pop up and get dumped on unit commanders, who must then find the time to conduct them. Some commander acquiesced, and everyone down the chain of command saluted and moved out. Do more, better, with less, now.

If the Army is ever going to get serious about protecting METL training, here are some thoughts on how to do so.

Training sequester. The CSA should immediately direct that no subject or event may be added to the list of required training unless an equivalent billpayer is identified from the existing list of required training subjects that will be eliminated. This must be effective and enforced at every level. If the battalion commander requires every company to field a basketball team for round-robin competition, what is the billpayer? We do this with the budget; we can do it with training resources as well.

Protect METL training. Any training that is METL-related can only be cancelled or rescheduled with the approval of the commander two levels higher. Only the brigade commander can authorize a company to change the training schedule for METL-related training. The request must be endorsed up the chain of command, with a full explanation and the make-up period identified when the called training will be rescheduled. Emergency cancellations must be justified within 24 hours and similarly endorsed and rescheduled. Some units probably have such a policy **on paper** now but, in my day, this was a cover-your-butt paper drill. Include this directive as a subject of Department of the Army (DA) interest during annual general inspections. Did the make-up training occur, did it get lost in scheduling, or was it simply overcome by events?

Distraction-reduction initiative. At each level, beginning with DA and FORSCOM, require that the list of non-METL mandatory subjects be reduced in total hours by 10 percent during the next calendar year and 5 percent each

succeeding year for three years. This will bring reality back to the force within four years. I can recall very few of these mandatory training requirements that could not be reduced, and many that were either superfluous or obsolete. Whenever a new required-training subject was introduced, it was inevitably announced with great fanfare. I cannot recall a single instance when a "special" subject was formally dropped with an official notice that the training had been effective and was no longer required. Pet rocks rarely die.

Test out. Mandatory subjects were often mandated by "hours" of training time. Care and cleaning of the gas mask may not actually need an hour of instruction. Further, many subjects have been mastered by individual Soldiers. Begin training with a diagnostic evaluation; if the Soldier can demonstrate proficiency, send him or her to alternate, concurrent training and focus the instructor's time on those who do not have the required skill.

Sunset clause. While the titles and topics may have changed, no doubt the staff bureaucrats' inherent response to anything that is a hot-button issue – driving while under the influence, absences without leave, racial graffiti, smoking cessation, re-enlistment shortfalls, vehicle accidents, accidental weapons discharge, etc. – is to "add training on this critical issue to every unit's training program." Boutique and "pop-up" issues, even important ones like rape prevention and suicide risk awareness, must have a sunset clause. Add the words, "This subject will be taught to every Soldier in the Army within one year and thereafter will only be taught during initial-entry training." Sustainment or refresher training, should the command decide it has a recurring problem with a topic or challenge, may only be conducted when another non-METL topic of equal time is identified for deferral to the following training year.

The Army does too many things just because we have always done them that way. Training subjects linger because no one wants to take the

responsibility of eliminating them and face the possibility of the reoccurrence of the issue that generated the requirement. Man up. Furthermore, the annual training program is an arbitrary and cumbersome measurement metric. Some issues could be addressed by units every other year and still maintain the minimum essential proficiency.

The problem with overtasking is neither new nor more complex in 2017 than it was in 1970. A colleague of mine succinctly identified the solution: "What we need is a 'can't do' attitude." In fact, in their testimonies before the Senate Armed Services Committee, the Chief of Naval Operations and the Secretary of the Navy said that they too have cut essential training and certification to meet operational-tempo mission demands. These training shortfalls are causal factors in the two recent fatal ship collisions that cost the lives of 17 sailors. Secretary Richard V. Spencer

used the "rucksack" analogy: "[With] all the best intentions in the world – put a rock in to-do training on smoking cessation, put a rock in to-do other sorts of training, but no one's taking a rock out, and the rucksack's getting pretty damn heavy." (See "[Chief of Naval Operations John] Richardson: High [Operations Tempo] and 'Can-Do Culture' Culminated in 'Pervasive' Expired Certifications in Forward-Deployed Surface Forces" by Megan Eckstein, *USNI News*, Sept. 20, 2017.)

Saying we have a combat-ready Army when the conditions Metz identified are there for all to see does a disservice to the nation, the Army and, most of all, the Soldiers who may have to face a more proficient enemy in the next war. A generation ago, the must-read book for officers was *America's First Battles: 1776-1965* by Charles E. Heller and MG William A. Stofft. The tale of Task Force Smith in the Korea

ACRONYM QUICK-SCAN

CSA – Chief of Staff of the Army
DA – Department of the Army
FORSCOM – (U.S. Army) Forces Command
METL – mission-essential task list

War is especially pertinent. Task Force Smith was out of shape, undermanned and poorly equipped, but it was overrun and its Soldiers killed, wounded and captured because it was not adequately trained to fight. The mantra of our former CSA, GEN Gordon Sullivan, after Operation Desert Storm was "No more Task Force Smiths!" If Metz's article is even partially accurate, and I have no doubt it is, then our Army is preparing to fail because it is failing to prepare.

**RETIRED COL CHARLES D. (DON)
MCFETRIDGE**

Send Us Your Manuscripts

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- Fall 2018 edition: Aug. 7

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CHIEF OF ARMOR'S HATCH

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



Increasing Maneuver Platoon Lethality

Maneuver platoons exist to deliver decisive lethality on the battlefield. Key to this are organizations led by non-commissioned officers and officers who are technical and tactical experts on their assigned combat platform and are ready to lead on Day 1.

Enabling readiness to “fight tonight” and tomorrow, the Army must re-establish the path to develop leaders who are technically and tactically competent and have the experience, maturity and time in key and developmental positions to lead and train for combined-arms maneuver.

Maneuver-platoon lethality is directly linked to the experience and technical expertise of the officers and NCOs who lead combat-platform crews and platoons. Competent maneuver-platoon leaders deliver decisive lethality. Our ability to maneuver a platoon to a position of relative advantage is insufficient if that same platoon does not deliver decisive lethality against its opponent. Although we’ve been executing decisive-action combat training center rotations going on five years and are regaining our experience in combined-arms maneuver across the force, maneuver-platoon lethality proficiency is lagging. A deliberate strategy across the institutional force is necessary to provide the doctrine, training, leadership and education programs to enable more lethal maneuver platoons and crews.

Our working group assessed institutional factors that affect platoon and crew lethality and developed a comprehensive strategy to drive increased tactical and technical expertise back into the maneuver force to increase maneuver platoon lethality. The working group collected input from various stakeholders to develop courses of action to enable increased maneuver-platoon and crew-combat platform lethality in the near-, mid- and long term. Highlights of proposed actions under this strategy include:

- Creating positional additional skill identifier coding on modified tables of organization and equipment for maneuver-platoon combat platforms to track the distribution of technical expertise across the force.
- Increasing “reps and sets” and hands-on technical training within institutional functional training courses.
- Updating Department of the Army Pamphlet 600-25 and DA Pam 600-3 to describe repetitive assignment models and combat-platform assignment-oriented training.
- Establishing Abrams, Bradley and Stryker platform-specific mobile training teams, nested within brigade combat team sustainable-readiness models and prioritize training according to utilization cycles.
- Optimizing combat-platform and direct-fire planning instruction in NCO Academy courses through assignment-

oriented, hands-on technical training.

- Making Human Resource Command assignment instructions for temporary duty enroute to attend functional training.
- Standardizing and requiring training-support packages to prepare NCOs to attend Master Gunner School (sabot academies).
- Developing tracking systems that can be incorporated into Digital Training Management System for individual performance in gunnery records, platform training and experience throughout a Soldier’s career.
- Improving engagement-area development, direct-fire planning and fire control and distribution instruction in leader course programs of instruction.

The objective is to train and develop leaders who will lead by example from Day 1. These leaders will train maneuver platoons and crews to deliver decisive direct-fire lethality as part of the combined-arms team. These efforts will directly impact BCT readiness now and in the future and will provide commanders lethal mounted-maneuver platoons that dominate while executing cross-domain maneuver.

We look forward to your attendance at the Sullivan Cup April 30-May 4, 2018. Also, the Saint George Ball is scheduled at 6 p.m. May 4. Please attend both events.

Forge the Thunderbolt!

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



Sullivan Cup's Importance

With spring just around the corner, I am excited to announce this year's Sullivan Cup competition. The Sullivan Cup is held every other year at Fort Benning, GA, to rigorously test and evaluate the best tank crews from across the Armor Branch, the U.S. Marine Corps and international partners.

The Sullivan Cup is named in honor of retired GEN Gordon R. Sullivan, who was an Armor officer for 36 years, serving in a multitude of commands and culminating as the 32nd Chief of Staff of the Army and member of the Joint Chiefs of Staff.

This year's Sullivan Cup will take place the first week of May. The competition will bring together tank crews from across the Army and across the world in a competition that will rigorously and comprehensively test their individual- and crew-level proficiencies. The competition will require mastery of individual tasks, technical and tactical competence, and the ability to demonstrate an array of maneuver, sustainment and gunnery skills.

The competition focuses primarily on

the performance of the *individuals* functioning as a crew. The key to success for the winning crew will be the training provided at their home station by their unit's master gunners and tank commanders. The noncommissioned officers (NCOs) serving as master gunners were chosen to serve as subject-matter experts and to aid and assist commanders at all echelons in the planning, development and execution of training individual- and crew-gunnery tasks, vital to the unit's effectiveness in combat. The tank commanders, primarily junior NCOs, are overall responsible for training each crewmember, ensuring proficiency in their assigned position and cross-training their crewmembers in other positions. The lethality of our formations begins and ends with the NCO.

Competitions like the Sullivan Cup serve to recognize excellence throughout the force and across the Armor Branch. More importantly, they highlight the importance of mastering the fundamentals that we must preserve as a fighting force to maintain a lethal

edge over our potential adversaries.

I would like to close by stating this will be my last **ARMOR** article as the command sergeant major of the U.S. Army Armor School. I would like to take this opportunity to express what a privilege this assignment has been. During my tenure as the Armor School command sergeant major, I have had the pleasure of overseeing the growth of the 19D and 19K military-occupation specialties; the standardization of the 6x36 scout platoon; gender integration at both the officer and enlisted levels; and the implementation of high-physical-demands tasks into training programs of instruction for all 19-series Soldiers. I would like to introduce CSM Kevin Muhlenbeck as he comes in as the next Thunderbolt 7. I am immensely proud of what our branch has accomplished and what it continues to achieve, and I am honored to count myself a member of the combat arm of decision.

Forge the Thunderbolt! Armor Strong!

Our Readiness Problem: Brigade Combat Team Lethality

by LTC Bradford T. Duplessis

“Our fundamental task is like no other – it is to win in the unforgiving crucible of ground combat. We must ensure the Army remains ready as the world’s premier combat force. Readiness for ground combat is – and will remain – the U.S. Army’s No. 1 priority. Readiness is No. 1, and there is no other No. 1.”-GEN Mark A. Milley, 39th Chief of Staff of the Army

If we are to get after GEN Milley’s No. 1 priority, we must first address brigade combat team (BCT) lethality. This article will use the metrics outlined in Table 1, which depict BCT live-fire lethality at the National Training Center (NTC), as well as the observations of the NTC live-fire team as a start point for discussing our lethality challenges and potential remedies.

Two issues exacerbate our lethality problem. The first issue is a personnel system that does not allow for mastery of the fundamental warfighting skills due to the friction associated with personnel turbulence, which is further exacerbated by a lack of decisive-action (DA) experience at echelon. The second issue is that home-station live-fire training does not have the rigor required to build confidence and competence which, with enough repetitions, develops experienced leaders and lethal formations at the BCT and below.

Note that the data referred to within this article, to include the deployment readiness and combat effectiveness of

rotational training units, is based on past data from units no longer within the same deployment cycle. This article discusses training improvements currently in place at NTC as well as lessons-learned that must be integrated at home station to enhance combat effectiveness.

NTC live-fire observations

Any discussion of NTC live-fire observations must first provide context by defining the operating environment. The NTC live-fire environment is the best in our Army, as it is the only live fire that allows a BCT commander to maneuver his formation against a peer threat, synchronizing the BCT’s capabilities and those resident at echelons above brigade under live conditions. It is also realistic and complex: formations are not authorized to conduct a leader tactical exercise without troops, dry fire or blank fire prior to the operation; formations can employ the effects of their platforms and systems at their respective surface danger zone (SDZ) or minimum safe distances (MSD); there are no “range fans,” as leaders are expected to control the effects of their weapons systems and also determine the weapons-safety posture and weapons-control status of their formations; and BCTs fight a “thinking enemy” under live-fire conditions, conducting a deliberate attack and then rapidly transitioning to establish a security zone as the BCT begins defensive preparations to defeat an enemy counterattack.

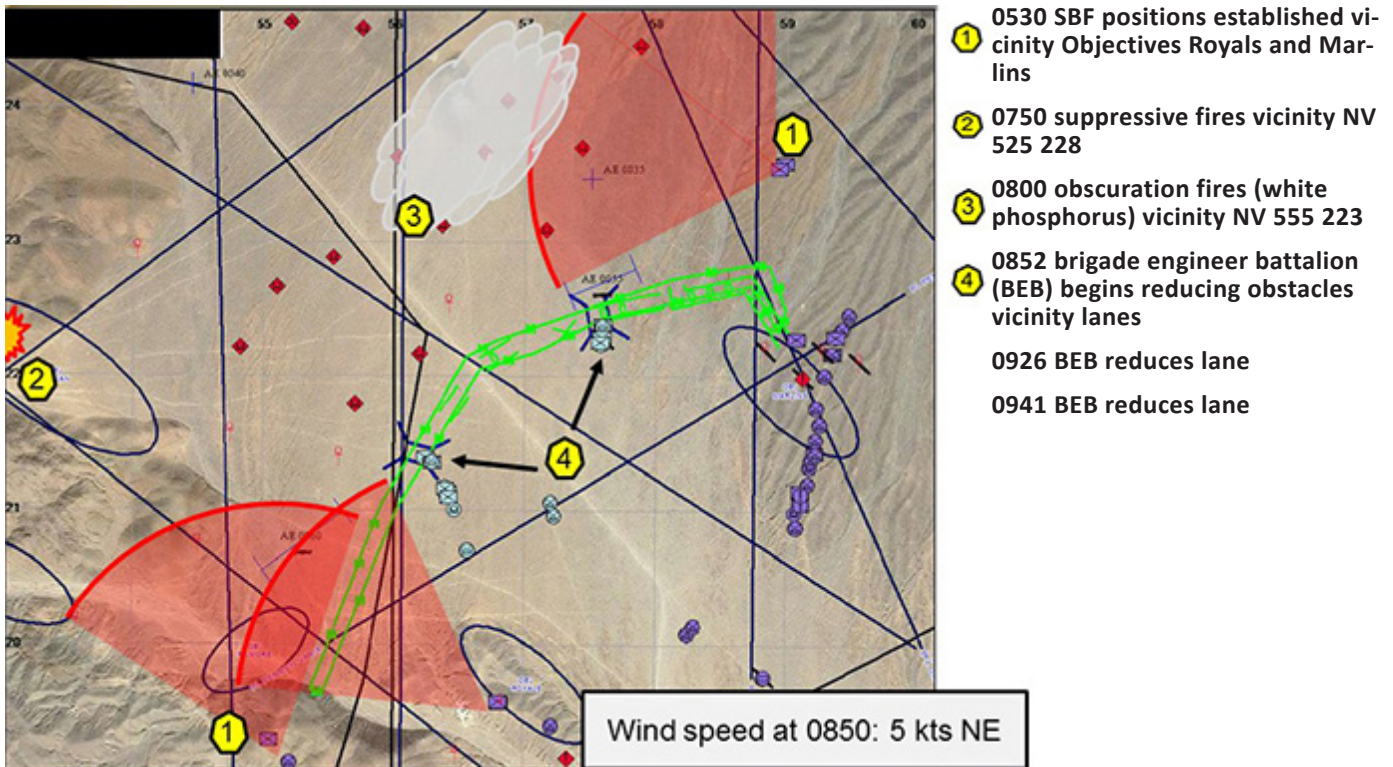
The NTC live-fire team has a dedicated opposing-forces (opfor) cell consisting of an opfor commander, a fires officer and a simulations operator. These Soldiers fight the BCT in a simulation, which is then replicated on the ground by the targets presented, allowing the NTC Operations Group to “fight” the BCT in accordance with DA Training Environment 2.2 threat doctrine under live-fire conditions. The opfor commander can reposition forces, employ artillery and mortars, employ chemical munitions and synchronize the actions of irregular forces in the brigade’s rear area with the actions of his conventional forces to stress the BCT’s leaders. This allows leaders to see a cause and effect to their actions, or lack of action.

In addition, the live fire stresses BCT systems. For example, the brigade-support battalion (BSB) conducts a live fire in the BCT’s rear area in which the environment supports employment of crew-served weapons, attack aviation, indirect fires, claymore mines and AT4s by our sustainers. The result is stress on tactical sustainment, as the BSB must sustain the BCT over doctrinal distances while fighting both an irregular and conventional threat against the brigade-support area.

BCT synchronization and impacts on lethality. Our Army is challenged with BCT lethality and the synchronization of efforts that enable lethality. As an example, Figure 1 depicts our challenges with synchronizing the warfighting

	T-80	BMP	BRDM	Squads	Total
Offense	Total: 70 Destroyed: 44 Lethality: 62.85%	Total: 198 Destroyed: 113 Lethality: 57.07%	Total: 79 Destroyed: 41 Lethality: 51.89%	Total: 135 Destroyed: 66 Lethality: 48.88%	Total: 482 Destroyed: 264 Lethality: 54.77%
Defense	Total: 542 Destroyed: 215 Lethality: 39.66%	Total: 497 Destroyed: 265 Lethality: 53.31%	Total: 202 Destroyed: 118 Lethality: 58.42%	Total: 218 Destroyed: 97 Lethality: 44.49%	Total: 1,459 Destroyed: 695 Lethality: 47.63%

Table 1. BCT lethality. This table captures the lethality of four armored BCTs (ABCTs) that trained under live-fire conditions at NTC by outlining the total number of threats presented to the ABCTs and the effects of the BCTs’ weapon systems. Of note is that greater than 94 percent of the “enemy” destroyed during these live-fires were destroyed with direct-fire systems (including attack aviation), meaning that our formations fought a “fair” fight.



- ① 0530 SBF positions established vicinity Objectives Royals and Marlins
- ② 0750 suppressive fires vicinity NV 525 228
- ③ 0800 obscuration fires (white phosphorus) vicinity NV 555 223
- ④ 0852 brigade engineer battalion (BEB) begins reducing obstacles vicinity lanes
- 0926 BEB reduces lane
- 0941 BEB reduces lane

Figure 1. BCT condition-setting to facilitate the combined-arms breach of an obstacle belt. Of note is that the BCT struggled to suppress most “Donovian” BPs overwatching the obstacle with direct and indirect fires while employing ineffective obscuration, despite commitment of the breach force.

functions in support of a combined-arms breach during live-fire operations.

BCT synchronization: breach fundamentals. Although pulled from a recent after-action review, the problem depicted in Figure 1 is observed monthly by NTC observers/coaches/trainers (O/C/Ts). Namely, BCTs struggle with synchronizing the fundamentals of the breach, frequently resulting in the unit sequentially employing limited 155mm high-explosive artillery suppression, then employing obscuration – BCTs struggle to mass these effects at the right place and at the right time in support of maneuvering to a position of advantage.

Artillery-delivered suppression and obscuration is ineffective for several reasons. The first reason is that ground-reconnaissance efforts fail to identify the obstacle and the brigade’s point of penetration, and to identify the composition, disposition and location of enemy battle positions (BPs) overwatching the obstacle, resulting in an inability to refine the BCT’s fire plan prior to crossing the line of departure. This has obvious impact on the brigade’s ability to refine the associated

technical and tactical triggers that produce timely and responsive fires synchronized with maneuver. The second reason is that leaders are poorly positioned to both observe the conditions they are responsible for and to communicate.

Both of these issues point to the real problem: a lack of experience.

Ammunition management and direct-fire suppression. To further illustrate our lethality and experience shortfalls, discussion of ammunition management as it relates to direct-fire planning has merit. BCTs routinely divide their ammunition allocation into thirds, resulting in each of its combined-arms battalions receiving the same number of main tank rounds, Bradley ammunition and tube-launched, optically tracked, wire-guided, or TOW, anti-tank missiles, despite these units being assigned different tactical tasks. This ammunition plan does not appropriately resource the direct-fire plan required to suppress enemy BPs overwatching the obstacle. The result is long lulls where enemy BPs are not effectively suppressed and a fire plan that does not facilitate the BCT’s penetration of the obstacle belt

or the subsequent shifting of direct fires to known, suspected or likely enemy positions to allow the assault force to maneuver through the passage point out of contact.

Leader understanding – experience – of how long their formation must suppress a particular threat to facilitate the BCT opening a lane in the obstacle belt should serve as a start point for ammunition-distribution plans and should also factor into BCT task-organization decisions.

As the BCT transitions from the offense to the defense, poor ammunition management eventually results in one battalion task force going “black” on ammunition as a brigade tactical group enters its engagement area, forcing the BCT commander to commit his reserve – not to exploit success or because the force has met the conditions associated with a decision point, but because leaders at echelon did not possess the experience to allocate ammunition to support the fire plan.

In *ARMOR*’s November-December 1993 issue, MAJ Derek Miller and CPT Rick Averna discuss this requirement in their “Direct Fire Planning” article:

“Massing fires means placing accurate fires on multiple enemy threats simultaneously. Firing at multiple targets in depth prevents the enemy from dealing with any single threat and maneuvering or massing his fires against it. ... The commander must fully understand his mission, the enemy, terrain and time. To achieve the required mass to accomplish his mission, the commander may have the majority of his force fight to get key systems in position where they can unquestionably influence the critical point.”

It goes without saying that the point of penetration is the critical point in the combined-arms breach. Figure 2 details how failure to deliver effective suppression and obscuration results in a combined-arms breach that commits the breach and assault forces without properly setting the conditions for success. Specifically, it provides a snapshot of friendly and enemy disposition as well as the maximum engagement lines of enemy BPs that are not suppressed and / or obscured while friendly units are at the BCT’s two passage points.

Personnel management

Effects of personnel turbulence. The personnel system is contributing to our struggles to build mastery and therefore lethality. Specifically, units are

hemorrhaging qualified Soldiers and leaders at a rate quicker than they can build proficiency.

For example, as 5th Squadron, 4th Cavalry Regiment, transitioned from its regionally aligned mission in support of U.S. African Command and prepared to hone its DA skills in preparation for NTC Rotation 15-06 and a future deployment to Operation Spartan Shield (OSS), the squadron lost about 26 percent of its Soldiers due to permanent-change-of-station and end-term-of-service throughout its roughly six-month training density. To be clear, the squadron lost 26 percent of its trained and certified crews, scout teams, mortar sections and squadron staff leaders. As depicted in Figure 3, after the squadron fought at NTC, it transitioned from this crucible leader- and collective-training event into an individual-skills density because personnel attrition necessitated a return to the basics – the squadron found itself losing readiness due to personnel turbulence as quickly as it was built.

Large numbers of Soldiers placed on assignment instructions as a BCT enters its training density to prepare for a combat-training-center (CTC) rotation and for combat should be the exception, not the norm. As the Army increases end-strength in Fiscal Year (FY)

2017, a greater emphasis on manning BCTs prior to the organization meeting its critical training gates is imperative to build readiness. As we transition to measuring readiness via Objective-T, we will no doubt be challenged to generate T-1 level BCTs if we do not address the impacts personnel turbulence has at the BCT level and below.

Crew turbulence and impacts on readiness.

Personnel turbulence forces BCTs to allocate more resources such as time, land and ammunition to qualify crews inside of the nine-month crew-qualification standard outlined by our doctrine. A recent American Enterprise Institute study of a BCT clearly articulated the problem: “One mechanized infantry company commander with whom we spoke had recently completed platoon-level live-fire exercises for which he had scrambled to produce a full complement of commander-gunner-driver teams for his 14 Bradleys. In the intervening 10 days, five of those 14 crews had lost at least one crewmember. ... Moreover, he had been able to field 14 full crews earlier only by gutting the squads of infantry ‘dismounts.’”¹

Our fairly recent shift from a six-month to nine-month standard for crew qualification is not a means to build readiness, as it is difficult to argue that

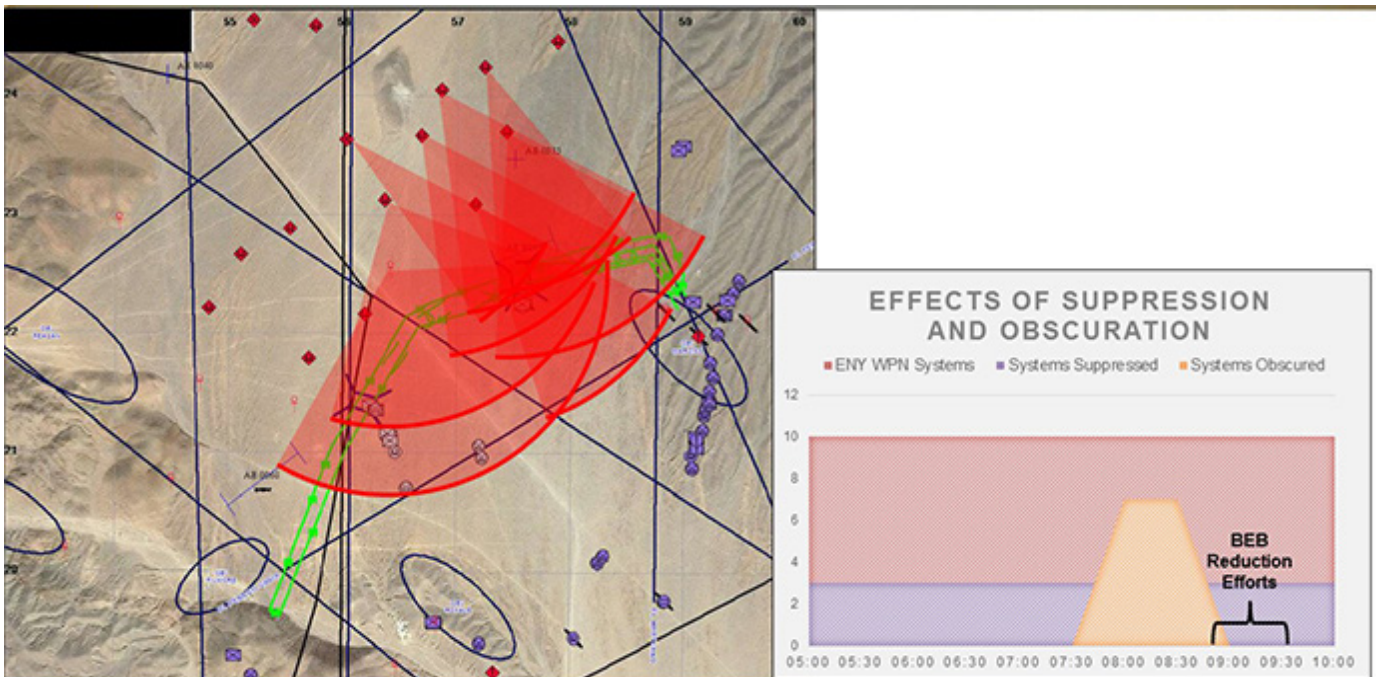


Figure 2. Lack of BCT synchronization in support of the combined-arms breach results in unobscured and unsuppressed “Donovian” BPs being able to effectively engage the BCT’s breach force at both passage points.

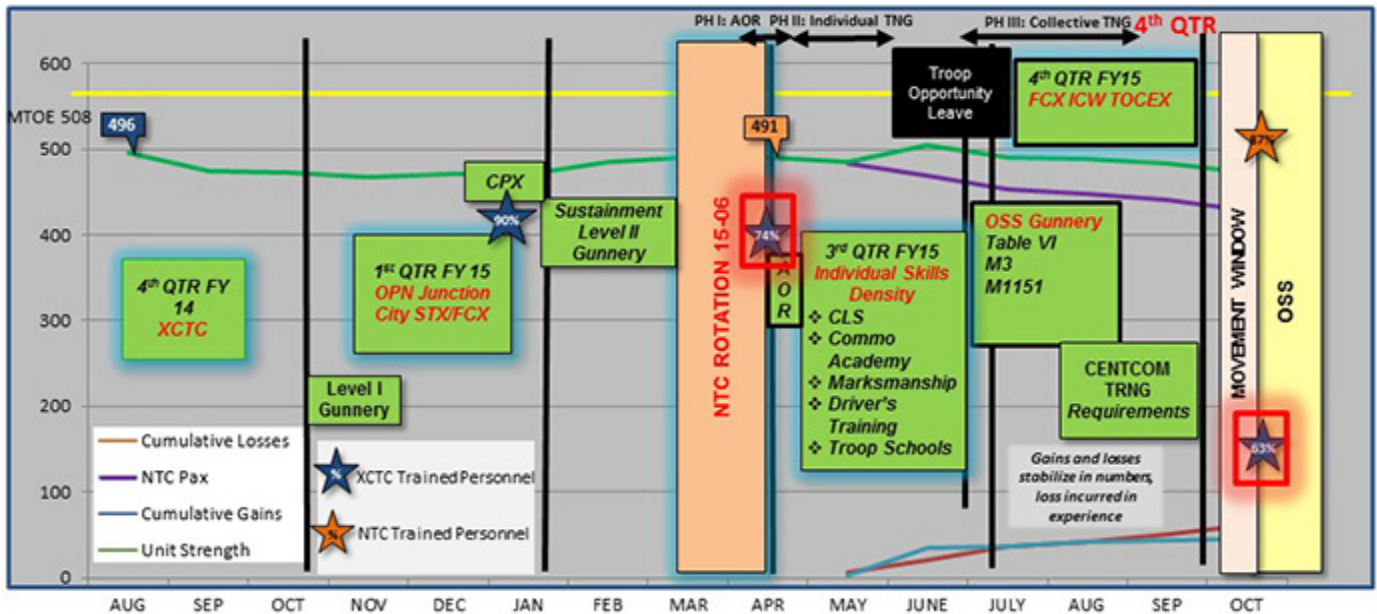


Figure 3. The personnel turbulence 5th Squadron, 4th Cavalry Regiment, sustained as the unit entered its collective training density in August 2014. The squadron found itself losing readiness due to personnel turbulence as quickly as it was built. Gains and losses were measured by assigned strength stabilized over time, but what was lost was experience, a critical component of lethality. Notes: 74 percent of eXportable combat-training capability (XCTC)-trained Soldiers were in the formation on NTC Training Day 1. XCTC and Operation Junction City had built the capability at echelon that was observed on NTC Training Day 1. Squadron staff stability between XCTC and NTC resulted in effective mission CPs capable of synchronizing reconnaissance and security operations; high staff turnover between NTC and OSS required staff training through a TOC exercise (TOCEX).

reducing repetitions equates to greater crew lethality. The impacts of the nine-month qualification standard, coupled with years of being off our platforms in Iraq and Afghanistan, are witnessed every month during BCT live fires at NTC, where O/C/Ts observe our crews struggle with the fundamentals (such as identification of the threat) despite all targets in the live-fire area having a thermal as well as a pyrotechnic signature to aid in acquisition, proper scanning techniques and lethality. Furthermore, 21 percent of crews come into each rotation unqualified or as a turbulent crew.²

Further degrading our lethality is the fact that about 15 percent of our crews deploy to NTC having missed at least one live-fire gate from the crew- to company-level due to personnel transitions. In total, this results in slightly greater than a third of our crews either not being able to participate in the BCT live fire – or participating in a diminished role such as being authorized to fire from a staked defensive position – as opposed to maneuvering with their battalion task force.

The field-grade staff-officer experience gap. Our doctrine is sound and

leaders study it – they know the fundamentals of the breach: suppression, obscuration, secure, reduce and assault, or SOSRA. Leaders can “describe” this operation conceptually, but they do not have enough repetitions – experience – synchronizing this highly complex operation to truly “understand” and “visualize” the operation to both accomplish the mission and protect the force.

This experience deficit is further exacerbated by our policy on moving field-grade officers, the synchronizers of BCT operations, after 18-24 months of key assignments as operations officers and executive officers so they can be broadened. It is important to note that by and large, the current population of field-grade officers leading our staffs did not grow up in a DA environment – whether during home-station training, a CTC rotation or while deployed.

The American Enterprise Institute study already cited pointed out this field-grade officer management problem, highlighting the fact that the BCT its authors observed will lose half its field-grade officers between its NTC rotation and its operational deployment to Europe. The report states that

although these leaders are competent, they possess a deficit in experience. Broadening appears to be in direct conflict with building BCT lethality as our field-grade leaders receive fewer tactical repetitions to aid in their development as future battalion and brigade combat team commanders.

The requirement to broaden officers vs. further immerse field-grade officers in our tactical formations to narrow this experience gap is worth further study but will not be addressed in this article. However, one way to mitigate this experience deficit is to make field-grade officer developmental time in tactical formations count more by reinvigorating home-station live-fire training. If we are successful in this endeavor, then we can expect to see an improvement in the BCT lethality metrics witnessed during NTC live fires.

Reinvigorating home-station live-fire training

This article has spent ample time discussing how personnel turbulence impacts readiness, defined as lethality. However, even with the right personnel, we struggle to build lethality because we do not train under the right

conditions when conducting home-station live-fire training. As such, when BCTs are faced with the complexity of NTC live-fire operations, their leaders lack the requisite competence built through repetitions and experience to synchronize operations.

Acknowledging that the CTCs have capabilities that cannot be replicated at home station, leaders at echelon must revisit their home-station training objectives and the conditions replicated at home station to build lethality in their formations, to include re-addressing unit-gunnery programs and training their staffs to enable lethality.

Return to the six-month qualification standard = lethality repetitions. Personnel stability and more repetitions via a return to the six-month qualification standard would be a step in the right direction in righting crew lethality, as it would build not just crews, but experienced crews. Experience over time equals readiness – in our business, this means lethality. When Major League Baseball teams build readiness at spring training (analogous to our CTC rotations) in preparation for the season (our operational deployments), they solidify their rosters – their personnel. They also take more ground balls and at-bats, not fewer. We are the professional athletes of warfighting and should have a similar approach by returning to the six-month crew qualification standard and by removing the concept of turbulent crews from our training doctrine in an effort to increase our lethality “at bats” at home station.

Closing the threat-acquisition gap. Another way to increase lethality is to improve crew scanning techniques and threat-acquisition skills. There are several options available to address this training shortfall. The simulation options in the Advanced Gunnery Training System (AGTS) and the Bradley Advanced Training System (BATS) have the capability to not only ensure our crews meet the requisite gates to live fire but to also possess advanced scenarios that can be tailored by unit master gunners and senior instructor-operators (IO) to train threat acquisition.

For example, AGTS has more than 100 advanced-gunnery skills exercises

available to our crews after they have met the gate to live fire that can be used before crew qualification or as part of sustainment gunnery. These scenarios build in complexity and afford the IO the opportunity to vary the weather and visibility to force crews to manipulate their optics and to adjust their scanning techniques based upon the environment. Coupled with an IO-led after-action review (AAR), this capability can help reverse the threat-acquisition struggles observed by O/C/Ts during NTC live fire.

Gunnery-table design can also aid in threat acquisition. For example, Training Circular (TC) 3-20.31 discusses the use of 3/4 scale targets during Tables III, IV and V and then a return to full-scale targets for Table VI crew qualification iterations.

In addition, the TC also defines the minimum and maximum lateral dispersions of targets, or the distance between targets presented simultaneously, to stress the scanning techniques and threat-acquisition skills of our crews as a critical component of unit-gunnery programs. For example, when presented with a two-target engagement, the crew should be unable to identify both threats while in narrow field of view, necessitating appropriate scanning techniques to deliver direct fires against a threat while simultaneously acquiring a subsequent threat to the crew.

It is the responsibility of master gunners to proof the range and ensure the design of engagements meets the commander’s intent for building threat-acquisition skills. These skills must be a key focus of vehicle crew evaluator (VCE)-led AARs if we are to increase crew performance and lethality.

The roles and responsibilities of master gunners. Master gunners have a critical role in enabling lethality. In addition to their role in developing a gunnery program, platoon and company master gunners should assist the commander in training the principles of fire control, fire-control measures and the effects of the weapon systems organic to the unit (SDZs and MSDs). In addition, master gunners should train threat weapons-system capabilities so our platoon leaders fully understand

where they have to transition from movement to maneuver and where their formation requires support, such as obscuration or suppression, to gain a position of relative advantage.

It then becomes the platoon leader’s responsibility to develop the appropriate graphical control measures (GCMs) to facilitate the maneuver of the platoon synchronized with the support required.

At the battalion and BCT level, integrating our master gunners into the military decision-making process (MDMP) is critical. These experienced noncommissioned-officer (NCO) trainers can not only contribute to our understanding of the threat but should be intimately involved in discussions on ammunition distribution and ammunition consumption rates through their understanding of the tactical tasks – such as support-by-fire (SBF) and attack-by-fire – assigned to various formations.

Developing leaders who can fight. Gunnery is our minimum baseline for lethality. It is analogous to hitting off the pitching machine where the hitter knows the speed and location of each pitch in the same manner our crews know the layouts of our ranges and the engagements they must qualify. We must fix this by increasing complexity. Our crews, sections and platoons must face “live pitching” – an adaptive enemy that forces leaders to develop direct- and indirect-fire plans and then adjust them based upon the mission, enemy and terrain.

Figure 2 highlights a missed opportunity where an experienced leader could have impacted the brigade’s operations simply by maneuvering combat power into a position to suppress the threat and facilitate the breach. We must present our leaders with similar tactical problems at home station. The rote training events of old in which our formations conduct a leader walk-through, dry-fire iteration, blank-fire iteration and then execute live in the exact manner will not enable our leaders and formations to succeed when faced with the future’s unknown challenges.

Although our installation training areas do not possess the 1,600 lifters and

300 hard targets of the NTC live-fire area, scenario design can provide leaders the opportunity to make decisions and also learn from the effect of these decisions. We must also teach our young leaders to employ their weapons systems at their respective SDZ or MSD to break their viewpoint that SDZs and MSDs are “rangeisms,” when in fact understanding the effects of our direct- and indirect-fire systems allow a combat leader to mass. Accomplishing this requires a culture change from the tendency to focus on throughput and crew qualifications as the key indicators of readiness. Our focus should be on leader development as it relates to lethality.

Although “blasphemous” to some, conducting a gunnery density where a master gunner directs the maneuver of crews to specific BPs for engagements misses multiple opportunities to train lethality and activities that enable lethality. For example, platoon leaders developing GCMs to control crew maneuver based on an enemy situational template and analysis of threat maximum-engagement lines would operationalize gunnery.

A battalion commander should coach and mentor his platoon leaders in conducting this task in much the same manner that our maneuver forefathers did their “write for life” at Fort Knox, KY, or Fort Benning, GA. Even if not provided with the capabilities, this drill should also include an opportunity for the platoon leader to determine where and when – the trigger tied to a GCM – the formation requires collection and indirect fires to facilitate maneuver. The drill should allow the leader to get another repetition at issuing a tactical order.

This leader-development event would go a long way in training our company-grade leaders to fight with fires and understand their responsibilities in condition-setting well before they are field-grade officers. Over time, the leader task of developing a fire plan tied to GCMs would become as second nature to our platoon leaders as is the supervision of pre-fire checks.

Trained staffs enable lethality. No battalion or brigade commander has ever said, “I can’t wait to take the colors so

I can conduct a command-post exercise,” but we must look at the development and training of our staffs as a means to enable lethality. It is the commander’s responsibility to train the staff. This responsibility should not be outsourced to the executive officer or operations officer – they are part of the training audience.

To enable lethality, every gunnery or collective training event should consist of a command-post exercise (CPX) with fully manned and equipped command posts (CPs) operating at doctrinal distances. At the BCT level, this means that a training objective of each company combined-arms live-fire exercise or fire-coordination exercise (FCX) would be to train and certify the staff, otherwise we are relegating our formations to a “fair fight.”

Recognizing that we will never get as much time or as many “ground balls” as we desire, commanders must force their staffs to fight their systems, not merely conduct administrative tasks from the field.

Parking the various battalion- and BCT-level mission-command nodes on the same range or at the back pad at the installation’s Mission Command Training Center does not replicate the friction our future operational environments and the distributed nature of operations will likely produce. Recognizing that we will never get as much time or as many “ground balls” as we desire, commanders must force their staffs to fight their systems, not merely conduct administrative tasks from the field. CPs should battle-track collective training events as part of a fully developed scenario, which facilitate the following activities / efforts:

- Establishment and protection of mission-command nodes;
- Commander-driven operations process: repetition at delivering planning guidance and leading

wargaming to aid in visualization and synchronization;

- MDMP repetition through orders production for staff officers and NCOs;
- Rehearsals (combined-arms rehearsal, information collection / fires rehearsal, sustainment rehearsal, fires technical rehearsal and transition between the tactical-operations center (TOC) and tactical-actions center);
- Development and distribution of the battalion common operational picture (COP) – both digital and analog;
- COP management (in other words, who owns Joint Capabilities Release “Red” inputs and how often are they refreshed);
- Exercise the primary-alternate-contingency-emergency plan;
- Exercise retrans: command, digital fires and digital voice;
- Induce friction by placing a realistic load on mission-command systems;
- Execute / refine TOC battle drills; and
- Operate in a cyber electromagnetic activities-denied environment: conduct operations without Upper Tactical Internet systems.

If battalion and BCT commanders invest the time to execute a CPX in conjunction with each critical training event, O/C/Ts are likely to observe improvements in BCT synchronization during NTC live fires, resulting in increased lethality.

An observation of the NTC live-fire team is that lack of staff experience results in BCTs developing an execution checklist that drives their combined-arms rehearsals and subsequent execution. Execution checklists frequently inhibit initiative and – more often than not – result in the piecemeal commitment of combat power and force a slow tempo because the execution checklist fails to develop event-based triggers that result in synchronization and therefore mass at the right place, at the right time – in other words, lethality.

Conclusion

To build the ready formations required to defeat our adversaries and reassure our allies well into the future, our

Army must address the fundamental challenges we face with building BCT lethality by addressing the impacts associated with personnel turbulence. Likewise, commanders must reinvigorate multi-echelon home-station live-fire training so we 1) close the DA experience gap observed throughout our formations and 2) train our battalion and BCT staffs to enable lethality.

The previously highlighted BCT live-fire metrics show the impact of our staff synchronization struggles on the close fight, as some 94 percent of the “enemy” destroyed during BCT live fires were destroyed with direct-fire systems, meaning that our formations fought a “fair fight” – tank vs. tank, Bradley vs. *Boyevaya Mashina Pekhoty* (BMP) – resulting in an inability of friendly actions to either defeat the threat or force it to alter its course of action.

We must flip this reality on its head if we are to win on tomorrow’s battlefields. The success of future missions and protection of our Soldiers will likely depend on it.

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Combined Arms Services Staff School, Infantry Captain’s Career Course, Army Medical Department Officer Basic Course and Ranger School. He holds a bachelor’s of science degree in microbiology from Louisiana State University and a master’s of arts degree in international relations from Webster University.

Endnotes

¹ Thomas Donnelly and James M. Cunningham, *Army Readiness Assessment*, Vol. 1, American Enterprise Institute, February 2017.

² TC 3-20.31, *Crew Training and Qualification*, March 2015, defines a “turbulent crew” as: “Commanders [who] receive new leaders who qualified within the last qualification period have assessment options to maintain weapon or system qualifications. Commanders can assess two previously qualified leaders from different crews to determine their qualification status when assigned together. This is the least preferred method of crew management and requires the commander and master gunner to make assessments using previous crew records, sustainment training in simulations and other training methods to determine their qualification status. The commander may consider a turbulent crew as qualified when the vehicle commander and gunner have: 1) previously qualified in their assigned position on a different crew within the previous qualification period; 2) displayed crew proficiency during a minimum of eight hours in simulation; 3) successfully completed the simulations gate to live fire with a score of 850 or above; and 4) successfully complete Table I, Gunnery Skills Test.”

ACRONYM QUICK-SCAN

AAR – after-action review
ABCT – armored brigade combat team
AGTS – Advanced Gunnery Training System
AOR – area of responsibility
BATS – Bradley Advanced Training System
BCT – brigade combat team
BEB – brigade engineer battalion
BMP -- *Boyevaya Mashina Pekhoty*, or Russian infantry fighting vehicle
BP – battle position
BRDM – *Boyevaya Razvedyvatelnaya Dozornaya Mashina*, a Russian amphibious armored patrol car
BSB – brigade-support battalion
CGSC – Command and General Staff College
COP – common operational picture
CP – command post
CPX – command-post exercise
CTC – combat-training center
DA – decisive action
ENY – enemy
FCX – fire-coordination exercise
FY – fiscal year
GCM – graphical control measure
ICW – in coordination with
IO – instructor-operator
KTS – knots
MDMP – military decision-making process
MSD – minimum safe distance
MTOE – modified table of organization and equipment
NCO – noncommissioned officer
NTC – National Training Center
O/C/T – observer / coach / trainer
Opfor – opposing forces
OSS – Operation Spartan Shield
PAX – personnel
SBCT – Stryker brigade combat team
SBF – support-by-fire
SDZ – surface danger zone
STX – situational training exercise
TC – training circular
TOC – tactical-operations center
TOCEX – tactical-operations center exercise
XCTC – eXportable combat-training capability

Initial Commander's Critical Information Requirements and the 5 Common Command Decisions

by COL Thomas M. Feltey and
CPT Matt Mattingly

Commander's critical information requirements (CCIR) assist the commander in making timely and effective decisions. CCIR identifies reconnaissance objectives and drives the commander's reconnaissance guidance. Clear commander's guidance empowers the scout to think like the commander, take disciplined initiative and develop the situation as the commander would if he were in each observation post or on every patrol. This exercise in mission command flattens the battlefield and allows the organization

to maintain tempo while meeting mission requirements.

Logically, to develop CCIR, the staff must identify what decisions the commander will need to make during the course of the operation. Decision points are developed during course-of-action (CoA) analysis, Step 4 of the military decision-making process (MDMP).¹ The difficulty many staffs encounter is that MDMP requires development of initial CCIR as an output of mission analysis² – Step 2 of MDMP – and publishing in Warning Order 2.³

The advantages of publishing CCIR

early are multiple. At a minimum, it enables parallel planning, especially for cavalry organizations and scout platoons. It also gives the commander an option to execute a reconnaissance pull. The reconnaissance pull allows commanders to employ forces rapidly to seize opportunity or when time is limited, and use scouts to pull forces into positions of advantage.⁴

So how does a unit develop CCIR, based on command decisions, during mission analysis when the decisions won't be identified until CoA analysis? Commanders can and should provide guidance on CCIR based on their



visualization of the operation, CoA guidance and the anticipated decisions to be made.⁵ Staff can also assist the commander by working from a list of common decisions and subsequent CCIR that can be refined during the planning process.

The origin of this technique has been lost to history; however, it was a common practice in 3rd Armored Cavalry Regiment (ACR), 11th ACR and at the National Training Center in the era preceding the global war on terrorism. As the Army's premier lethality training brigade, 316th Cavalry Brigade has refined the technique and developed a list of five common battlefield command decisions to assist units with rapid CCIR development and timely deployment of cavalry organizations.

Change of task organization

Task organization and reorganization provides commanders with flexibility to adapt to changing circumstances and react effectively to the enemy to achieve mission success.⁶ Priority information requirements (PIR) for this decision include enemy formations at unanticipated locations or strength. Friendly-forces information requirements (FFIR) for this decision include loss of an asset critical to mission accomplishment.

Example: A light infantry battalion is tasked to conduct a movement-to-contact against a well-organized, militia-style enemy. Enemy CoA 1 has them operating in a loose area defense. Enemy CoA 2 has them operating in a concentrated strong-point defense. The battalion task-organizes the weapons-company platoons evenly across three infantry companies. However, the commander recognizes that identification of enemy CoA 2 will require another weapons platoon to be task-organized to the company in contact. Recognizing this early in the MDMP process provides the scout platoon with PIR that may trigger the reorganization prior to the companies making contact and assists the weapons-company commander with the troop-leading procedures (TLP) process.

Table 1 shows the if-then decisions.

Change of unit boundary

Changing a unit boundary typically corresponds with reassigning tasks to be accomplished within that boundary from one subordinate force to another. This is necessary when the terrain or enemy situation significantly differs from the templated situation and the survival of a force or tempo of an operation is threatened. Changing unit boundaries requires subordinate leadership to maintain higher-echelon graphics and understand adjacent unit tasks and purposes. FFIR include loss of combat power or failure to accomplish required tasks on time in accordance with the execution matrix. PIR may include adverse terrain conditions, location of enemy forces or enemy task organization.

Example: A Stryker brigade combat team (SBCT) cavalry squadron is conducting a zone reconnaissance to enable the brigade's approach march through the enemy disruption zone. Rapid deployment of the brigade into the combat zone is critical, and the squadron must accomplish its reconnaissance objectives on a strict timeline. The squadron commander identifies this requirement up front and develops control measures and associated FFIR to ensure the unit maintains tempo. Early identification of this requirement allows these measures to be included in the wargame and rehearsals. Subordinate maneuver units anticipate that they may take on adjacent unit tasks and can plan and rehearse accordingly.

Table 2 shows the if-then decisions.

Commit reserve

Commanders commit the reserve to retain initiative, exploit success or counter actions that threaten the integrity of friendly operations.⁷ It is inherent in the designation of the reserve that the conditions for its employment be identified and reporting requirements enumerated in the CCIR. FFIR may include loss of combat power or critical systems. PIR may include

location of enemy formations, enemy task organization and attrition of enemy forces or high-priority targets.

Example: An armored BCT (ABCT) conducts a defensive cover to provide the corps with enough time to generate combat power at a port. The brigade S-2 predicts the enemy will concentrate its limited number of T-90 tanks with the main effort. The brigade commander expects to commit his reserve against the enemy's main effort. Developing PIR to identify T-90s will orient the cavalry squadron on a specific reconnaissance objective, help scouts develop accurate indicators and assist the combined-arms battalions (CABs) with recommendations to brigade.

Table 3 shows the if-then decisions.

Transition phases

Phases divide an operation to focus effort, concentrate combat power at decisive points and accomplish objectives deliberately and logically.⁸ Decisive action requires a high degree of synchronization. FFIR designed to support understanding the location and composition of friendly forces is critical to the decision to transition. PIR may relate to the suitability of forward routes or enemy composition.

Example: A CAB is conducting a deliberate breach. Before fully developing a CoA, the commander can foresee that the composition of the obstacle must be confirmed, as well as the location of overwatch positions. This anticipation allows the scout platoon to begin TLPs, or possibly even initiate a stealthy reconnaissance, to begin collecting on enemy and obstacles.

Table 4 shows the if-then decisions.

Execute a branch plan or sequel

A branch is a contingency operation initiated as "a result of adversary action, availability of friendly capabilities or resources, or even a change in the weather or season within the area of operations."⁹ A sequel "is the subsequent major operation or phase based

PIR (if)	FFIR (and)	Decision (then)
Enemy conducts strong-point defense	Weapons company > 75% strength	Shift weapons platoon to adjacent company

Table 1.

PIR (if)	FFIR (and)	Decision (then)
Enemy not defending west of Phase Line (PL) Dog	Troop fails to reach PL Dog	Reassign named areas of interest

Table 2.

on the possible outcomes (success, stalemate or defeat) of the current major operation or phase.”¹⁰ Commanders require a solid understanding of battlefield conditions when changing to a branch or transitioning to a sequel. PIR related to enemy composition, task-organization, actions and reactions help the commander anticipate success, stalemate or defeat of the friendly operation. Concurrent to main body of offensive or defensive operations, scouts may conduct reconnaissance of adjacent areas focused on enemy or terrain to facilitate reorientation of forces to branch axes of approach. FFIR related to availability of maneuver, fires or sustainment will enhance informed decision-making.

Example: An SBCT is conducting an envelopment, with the cavalry squadron out front in a zone reconnaissance. Upon completion of the mission-analysis brief, the commander identifies that the squadron must identify and avoid principle enemy defenses and locate an assailable flank. This information will help the brigade determine which enemy CoA to plan against. Early understanding of the reconnaissance objectives allows the squadron maximum time to plan and initiate reconnaissance ahead of the brigade, allowing greater use of stealth and more detailed collection. Troop B encounters heavy resistance that meets indicators of the enemy main effort and seems to confirm enemy CoA 1. Troop A identifies a weak point in the enemy lines, also in line with enemy CoA 1, and conducts a forward-passage-of-lines (FPOL) with a sister infantry battalion. Enemy resistance strengthens, and indicators point to the reserve being committed in that area – an indicator on enemy CoA 2. The infantry battalion is unable to advance farther. Troop C identifies that a parallel axis is poorly defended. With the enemy reserve identified and indicators pointing

toward enemy CoA 2, the brigade commander chooses to execute a branch plan and send two battalions on the axis that Troop C identified.

Table 5 shows the if-then decisions.

This list is not intended as a substitute for detailed mission analysis and wargaming, but starting with a generic estimate can allow units to plan more rapidly, maintain a rapid tempo and seize initiative when opportunities present themselves. These decision and information requirements can be included in the unit’s planning standard operating procedure and rehearsed in tactical decision-making exercises or during constructive training.

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Endnotes

¹ Field Manual (FM) 6-0, **Commander and Staff Organization and Operations**, May 2014.

² Ibid.

³ Ibid.

⁴ FM 3-98, **Reconnaissance and Security Operations**, July 2015.

⁵ FM 6-0.

⁶ Army Doctrinal Reference Publication (ADRP) 3-0, **Operations**, November 2016.

⁷ ADRP 3-90, **Offense and Defense**, August 2012.

⁸ ADRP 3-0.

⁹ Ibid.

¹⁰ Ibid.

PIR (if)	FFIR (and)	Decision (then)
1 company of T-90s	CAB loses 3 platoons of combat power	Commit the reserve

Table 3.

PIR (if)	FFIR (and)	Decision (then)
Composition of enemy obstacle belt confirmed	Support by fire set	Initiate Phase III (breach)

Table 4.

PIR (if)	FFIR (and)	Decision (then)
Axis defended by greater than 2 companies	Infantry battalion > 75% strength	Fix and shift to alternate axis
Axis defended by less than 1 company	Infantry battalion > 75% strength	FPOL infantry battalion
Enemy commits reserve to axis	Infantry battalion < 75% strength.	Fix and shift to alternate axis

Table 5.

ACRONYM QUICK-SCAN		
ABCT – armored brigade combat team	CCIR – commander’s critical information requirement	MDMP – military decision-making process
ACR – armored cavalry regiment	CoA – course of action	PIR – priority intelligence requirement
ADRP – Army doctrinal reference publication	FFIR – friendly-forces information requirement	PL – phase line
BCT – brigade combat team	FM – field manual	SBCT – Stryker brigade combat team
CAB – combined-arms battalion	FPOL – forward-passage-of-lines	TLP – troop-leading procedure
	IBCT – infantry brigade combat team	

2017-2018 Armor Training and Leader Development Strategy Released

The U.S. Army Armor School (USAA-RMS) announces the release of the 2017-2018 Armor Training and Leader Development Strategy (ATLDS).

ATLDS provides an accessible, detailed and comprehensive consolidated reference for leader, individual and collective training to ensure readiness across the Armor and Cavalry force. This document provides a guide for training and educating Armor and Cavalry leaders to negotiate complexity and win on any battlefield. It is provided to complement and supplement unit training and leader-development guidance documents and strategies.

The strategy outlines the structural

landscape of the Army’s mounted-maneuver and mounted / dismounted reconnaissance-and-security training and education architecture. It reviews how USAARMS, Office of the Chief of Armor, 194th Armored Brigade, 316th Cavalry Brigade and other Maneuver Center of Excellence partners combine efforts to enable echeloned readiness across the maneuver force, with emphasis on ensuring success in tank platoons, scout platoons, tank companies and cavalry troops.

Finally, this strategy describes how USAA-RMS and partner organizations develop agile leaders to fight with confidence across multiple domains. It details the integrated progression of professional military education that

prepares officers and noncommissioned officers for assignment to armored, Stryker or infantry brigade combat teams, primary staff billets and command-select opportunities. The manual concludes with descriptions of available self-development programs and how leaders can apply training support and enablers to enhance unit preparation for home-station training, combat-training-center rotations and operational deployments.

Available from <https://www.benning.army.mil/Armor/content/PDF/2017-2018%20Armor%20Training%20and%20Leader%20Development%20Strategy.pdf?23MAR2017>.

A Solution Looking for a Problem: Illuminating Misconceptions in Maneuver-Warfare Doctrine

by MAJ Amos C. Fox

Warfare exists in the realm of both art and science – as a phenomenon in which sensing and intuition (in other words, art) play a complementary role to education and training (science). Just as a painter must have more than one color on his pallet, the practitioner of warfare must understand more than one form of warfare to be effective on the battlefield. However, the emphasis on maneuver warfare in current U.S. Army doctrine, at the expense of other forms of warfare, limits Armor and Cavalry leaders' ability to be true artists in warfare by not fully educating and training them on the realities of warfare, thus negatively influencing their ability to sense and apply intuition in battle. Doctrine's focus on maneuver warfare lies at the heart of this conundrum.

The term *maneuver* is regularly misapplied throughout U.S. Army doctrine, diluting the true intent of the concept, creating misconceptions about its utility and role in warfare. Furthermore, it can be argued that a mentality has emerged within the U.S. Army that places maneuver warfare at the apex of the forms of warfare, elevating it to a position of near-panacea status, which further removes the concept from individual and institutional understanding.

In essence, the U.S. Army's interpretation of the maneuver-warfare concept has created a solution looking for a problem. With that in mind, maneuver should not be viewed as an end unto itself but instead as a component in a three-part construct that oscillates among maneuver, positional and attrition warfare as battlefield conditions dictate (Figure 1).

To be sure, positional and attrition warfare are alive and well in modern combat. The Russo-Ukrainian War's major battles – including the Battle of Ilovaisk, the Second Battle of Donetsk

Airport and the Battle of Debal'tseve – are a testament to the continued efficacy of positional and attrition warfare, as are combat operations in Syria – including the siege of Aleppo and the contentious clearance of Islamic State fighters from the city of Mosul and western Iraq.¹

To support that position, this article examines maneuver-warfare theory and the U.S. Army's interpretation thereof. Next, this article illuminates the errors in a maneuver-centric approach to warfare while using Napoleon Bonaparte's Ulm-Austerlitz campaign to illustrate the utility of a maneuver-positional-attrition warfare dynamic. The article concludes by recommending a reframing of the method in which

doctrine describes, and Armor and Cavalry leaders think about, operations and tactics to bring it more in line with the praxis of warfare.

From theory to doctrine

Understanding the theoretical vision of maneuver warfare is fundamental in gaining an appreciation of the concept. The modern maneuver-warfare paradigm is chiefly a byproduct of World War I, a conflict largely characterized as a mass slaughter.² Historians Martin Blumenson and James Stokesbury suggest that the primacy of artillery and machineguns on the battlefield in opposition to light infantry and horse cavalry all but removed mobility from the battlefield, creating what they characterized as a "mass slaughter of



Figure 1. Maneuver-positional-attrition triad.

innocents, in which neither side could or would turn off the tap of blood.”³

In response to the bloodletting of World War I, two British theorists came to the fore: J.F.C. Fuller and B.H. Liddell Hart. Following the war, Fuller and Liddell Hart developed cogent theories for moving beyond the bloody stalemate of World War I’s Western Front. Their theories were underpinned by combining nascent technology – the tank and airpower – with infantry to restore mobility to the battlefield, the goal being to strike fear into the opponent through shock effect, causing the belligerent to acquiesce with little loss of life to either party.⁴

Blumenson and Stokesbury echo this position in writing that, “[i]n the realm of military technology, things were being done to restore mobility to warfare, and in effect to make wars winnable again.”⁵ More to the point, Fuller and Liddell Hart’s early work was the nucleus from which contemporary maneuver warfare theory and doctrine evolved.

From the standpoint of theory, modern maneuver warfare has two goals: (1) to achieve a psychological impact on an adversary – to create panic, or cognitive paralysis, forcing the enemy’s will to resist to collapse; and (2) to gain and maintain a position of relative advantage in relation to a belligerent. Creating confusion (a cognitive effect) and disorganization (a physical effect) are subordinate goals of maneuver warfare that contribute to the concept’s overarching aims. The idea of defeating the enemy through the most economic use of force is closely aligned with both of these goals.⁶

Maneuver seeks to accomplish this through surprise gained by rapid tactical and operational tempo, or by attacking from unexpected directions or locations. More to the point, combined-arms and joint operations are fundamental to maneuver warfare, as they enhance the maneuvering force’s ability to put physical and temporal distance between them and the enemy, thus enabling their own mobility. Effective reconnaissance-and-security operations are essential to maneuver warfare, as they provide the force the information needed to enable

maneuver, the most significant information being: (1) advantageous movement corridors and (2) the most profitable positions at which to strike against a belligerent.

U.S. military doctrine, as it relates to maneuver warfare, focuses on a psychological effect at the joint and operational levels and predominately a physical effect at the tactical level.⁷ Joint doctrine posits that maneuver warfare seeks above all else to strike at the psychological will of an opponent – to put them in a position so disadvantageous they give up the will to resist. Explicitly linked to the idea of psychological acquiescence is that of deftly moving to a position of relative advantage, with minimal direct combat engagement along the way, to place oneself at a point in time, space and counter-purpose to force the belligerent’s hand in giving up the battle without having to fight.⁸

The Army’s doctrine differs slightly from joint doctrine, stating that maneuver is the use of forces in an operational area through the combination of movement and firepower to gain a relative position of advantage in relation to an adversary.⁹ Meanwhile, contemporary American military theorist Robert R. Leonhard defines maneuver as placing “[t]he enemy in a position of disadvantage through the flexible application of combat power.”¹⁰ The idea of gaining a position of relative advantage is the glue that binds each of those definitions, whether the desired effect of that is a psychological or physical impact.

Solution looking for a problem

A major problem with the U.S. Army’s interpretation of maneuver warfare is the primacy it ascribes to the concept, placing it in a position above all other forms of warfare. In doing so, it turns a blind eye to the role battlefield conditions play in shaping the conduct of battles, operations and campaigns. Moving beyond the theoretical ruminations and archetypal stylings of doctrine, one quickly finds that the conduct of battle, operations and campaigns consists of an interchange among maneuver warfare, positional warfare and attrition warfare.

Though not defined doctrinally, positional warfare can be defined as the use of force – through tactics, firepower or movement – to move an opponent from one position to another for further exploitation or to deny them access to an area for further exploitation – while attrition warfare can be defined as the methodical use of battle or shaping operations to erode or destroy a belligerent’s equipment, personnel and resources at a pace greater than they can replenish their losses. The goal of attrition is to wear down the belligerent to the point they can no longer continue to resist or are physically destroyed, while the goal of positional warfare is to place one’s self in a position of advantage in relation to the belligerent or to lure the belligerent into vacating their own position of relative advantage in relation to one’s own force. It is also important to understand that both positional and attrition warfare are offensive **and** defensive, not just defensive, as some commenters contend.¹¹

The interchange among maneuver, positional and attrition warfare is predominately driven by the desired effect – in situations where tempo is the goal, maneuver is the preferred method; in situations where overwhelming firepower is required, attrition is the preferred method; and in situations where an advantageous position is sought, or an enemy must be pulled from its current position to one of the attacking force’s choosing, positional warfare is employed. Yet it must also be understood that this trade-off depends on more than just the object but also on the conditions: environmental, enemy-focused, friendly focused and internally focused.¹²

At a more granular level, contemporary U.S. Army doctrine possesses a series of fundamental flaws:

- It fails to account for warfare’s conditional character, which dictates the form of warfare to be employed, and instead elevates maneuver warfare to the sole form of warfare to be employed;
- It continually conflates maneuver (the action) with maneuver warfare (the theory of battle and operations); and
- It suggests a universality of the theory

in relation to armor, cavalry and infantry formations.

To be sure, the previous points do not constitute a comprehensive list of doctrine flaws associated with maneuver warfare. Nonetheless, these flaws create misconceptions about the utility of maneuver warfare, further obscuring the relevance of positional and attrition warfare. These flaws also force maneuver into situations for which it is ill-suited and indirectly cause leaders to project a “maneuver-centric” approach on belligerents, leading commanders and staffs to misunderstand enemy actions, intentions and will, which is counterproductive for any professional Soldier.

Blumenson and Stokesbury suggest that, “[o]ne of the most important of these (i.e. professional abilities) is the ability to see the situation through the eyes of the enemy; Napoleon called this ‘seeing the other side of the hill.’”¹³ To see the other side of the hill, Armor and Cavalry leaders must understand that maneuver might be the U.S.

Army’s preferred method of warfare, but it is by no means the only way of fighting, nor necessarily the best method of warfare.

Examining flaws

Maneuver is conditional; it is not an end unto itself. Maneuver is dependent on a variety of factors, both stand-alone and interdependent. While not a complete list, maneuver depends on the following factors:

- Accurate information pertaining to the enemy’s location (in other words, a movement-to-contact is a form of attritional warfare, at least initially);
- Tactical and operational mobility, enabled by tactical and operational communications systems;
- Favorable terrain that is open and does not canalize the attacking force;
- Directive command and control, and a culture that embodies trust and underwrites risk;
- Reaction time and space, usually a byproduct of effective reconnaissance, security and shaping operations;

- Mobile sustainment infrastructure; and
- Proficient formations, well-versed in choreographed and rehearsed battle drills.

The conditional character of maneuver warfare illustrates that maneuver is not always the ideal, most efficient or most profitable method of engaging in combat. This dynamic necessitates that maneuver warfare not be viewed as an end unto itself, but instead, maneuver should be viewed as but one component of a larger whole, of which positional warfare and attrition warfare constitute the other parts. This maneuver-positional-attrition warfare construct interacts with the battlefield’s conditions to determine the most suitable method of warfare. The formation’s structure and its mission also influence the form of warfare to be employed.

Compounding the aforementioned problem is the conflation of the physical act of maneuvering with the theoretical and doctrinal construct of

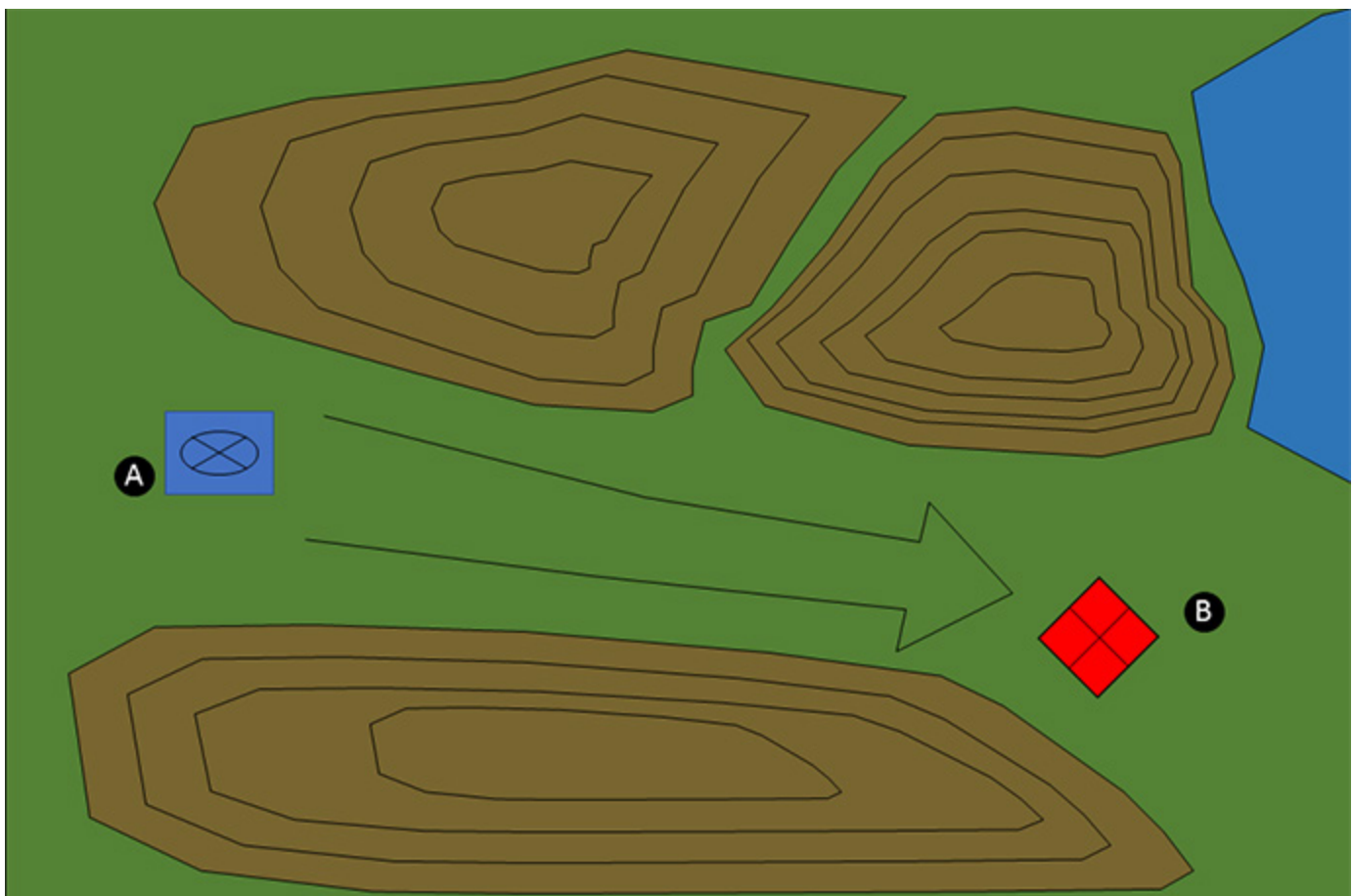


Figure 2. Attrition warfare.

maneuver warfare. In many cases, the term *maneuver* is used to describe the physical act of moving from one place to another, or moving from one place to another through difficult terrain. As mentioned previously, the Army defines maneuver as the employment of forces in an operational area through the combination of movement and firepower to achieve a position of relative advantage in regard to a belligerent.¹⁴ Yet the term *maneuver* is often applied incorrectly and out of context, thereby distorting the utility of the term itself. While the term could be used to define these actions, it misapplies or misuses the term as it applies to the doctrinal definition and as it relates the associated theory of warfare.

Furthermore, the Army's use of the term *maneuver* has caused the term to become *polysemic*, meaning that the word possesses multiple meanings or definitions.¹⁵ The polysemic character of maneuver, as used within Army doctrine, is an outgrowth of attempts to nest words, phrases and concepts within doctrine, which has diluted the

meaning of the concept even further. A synonym to *polysemic* is "word creep."¹⁶ Word creep has led to the term *maneuver* being used to define everything from straight-line movement, to movement over restricted terrain, to complicated combined-arms operations directed against a skillful opponent. Word creep of the term *maneuver* has ripple effects; it distorts doctrine, which in turn, creates misconceptions about the concept, hampering understanding of the idea of maneuver across the force.

Also, word creep has distorted the application of the word "maneuver" in relation to the concept of maneuver and maneuver warfare. Specifically, the nesting of the term throughout doctrine has yielded terms like "maneuver units," which is a misnomer. Terms like this imply that those formations are only capable of conducting maneuver, but as has already been established, understanding beyond maneuver is required.

Yet, even within U.S. Army doctrine,

positional and attrition warfare are hidden in tactics and operations. For instance, moving from Point A and attacking forces at Point B along one or two highly canalized avenues of approach with combined arms and joint capabilities is not maneuver – this approach is attrition warfare (Figure 2). Furthermore, moving from Point A to fix an opponent at Point B, then to conduct a flank attack with a portion of one's force at Point C, is not maneuver either – this is also an attritional attack (Figure 3).

Lastly, moving from Point A toward Point D with high tempo, in an attempt to pull an opponent from Point B or C – which may or may not be subsequently occupied by a portion of one's own force – is not maneuver; this is a form of positional warfare (Figure 4).

The examples described are simplified versions of schemes of maneuver often found in U.S. Army operations orders, but it is easy to see that these "maneuvers" are often positional or attrition warfare. A deeper examination of U.S.

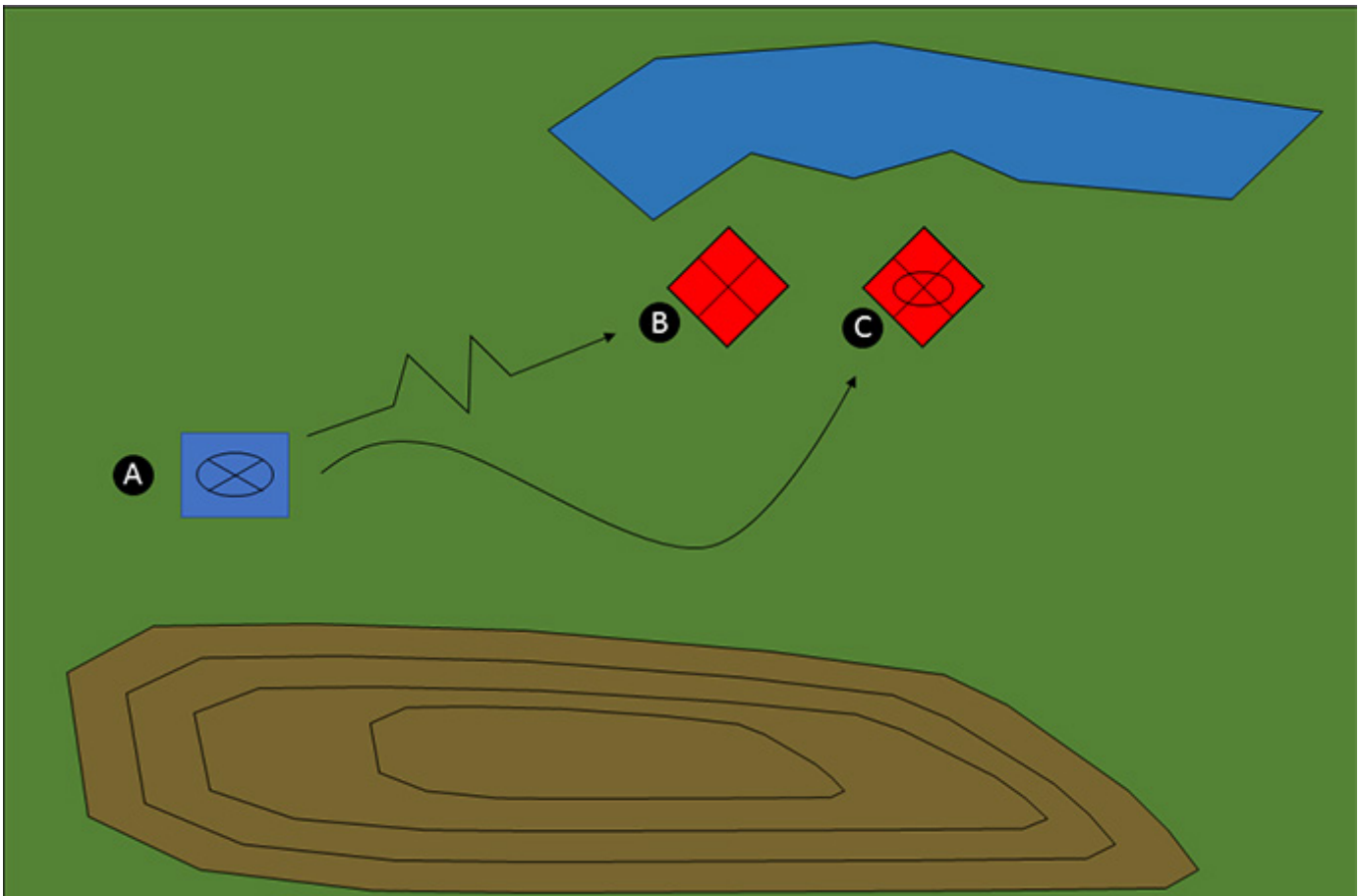


Figure 3. Attrition warfare.

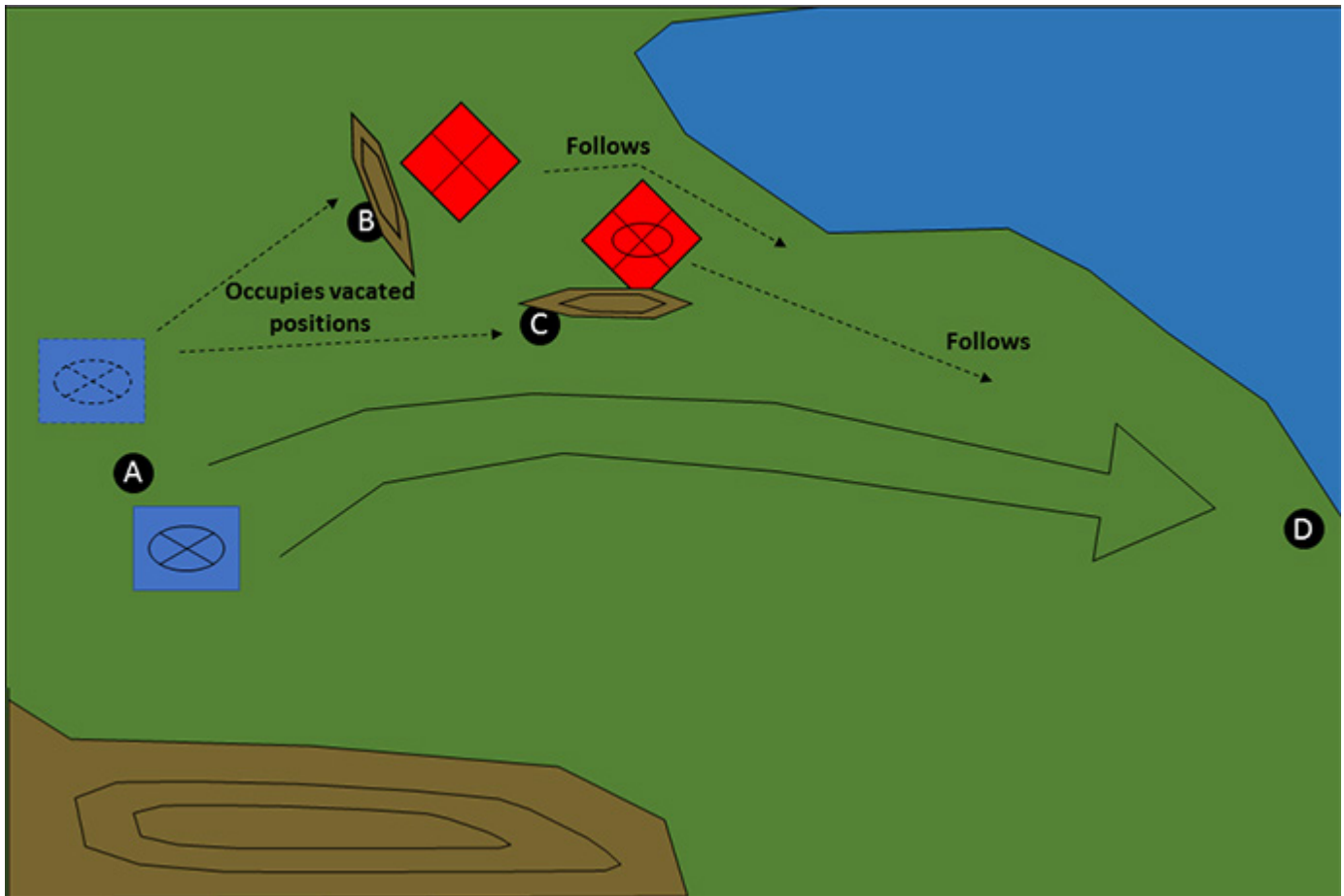


Figure 4. Positional warfare.

Army doctrine, specifically in regard to the forms of maneuver, yields similar findings.

The Army's forms of maneuver – penetration, infiltration, turning movement, flank attack, frontal attack and envelopment – are also incorrectly characterized as maneuver. To be sure, a turning movement and infiltration are arguably forms of positional warfare, while penetrations, frontal attacks and flank attacks are blatant forms of attritional warfare. An envelopment is the only form of maneuver which can truly be categorized as maneuver.

Pointing this out illuminates the fact that belies U.S. Army doctrine: attritional and positional warfare play an equal, if not greater, role in battles and operations than does maneuver warfare. This is not to condemn or venerate any one form of warfare over another, but instead to illustrate the utility and efficacy all three forms of warfare – maneuver, positional and

attrition – have in relation to the conduct of warfare.

The last misconception to dispel is that maneuver is universal to Armor, Cavalry and infantry formations. A common trope heard around the combat-arms units is that “maneuver is maneuver.” However, this supposition is fundamentally incorrect because it infers that all formations are capable of conducting maneuver warfare, regardless of their composition. This position overlooks the conditional character of maneuver warfare, which demands unique capabilities to conduct the concept.

The implication of this is that maneuver warfare is only conducted by formations possessing the requisite capabilities within the corresponding battlefield conditions. Maneuver warfare requires *rapid mobility*, enhanced by foreknowledge of the adversary's location. Mobility in maneuver warfare allows one to strike out for positions of relative advantage or situations in

which to create shock or chaos in the adversary's formations.

The absence of rapid mobility prevents a force from conducting maneuver warfare, therefore pure light forces possess only a limited ability to conduct maneuver warfare. Furthermore, cavalry formations – serving as the eyes and ears of the main body, enabling reaction time and space – do not conduct maneuver. Cavalry formations instead conduct enabling or shaping operations for main-body forces, who in turn conduct operations in line with one of three forms of warfare based on battlefield conditions. Therefore, maneuver is not inherent to Armor, Cavalry or infantry formations.

As a result of these misconceptions about maneuver warfare, maneuver's primacy in U.S. Army doctrine generates counterproductive thinking in relation to understanding the character of a given tactical problem. The by-product of unclear thinking is difficulty in developing realistic solutions and implementing those solutions in a

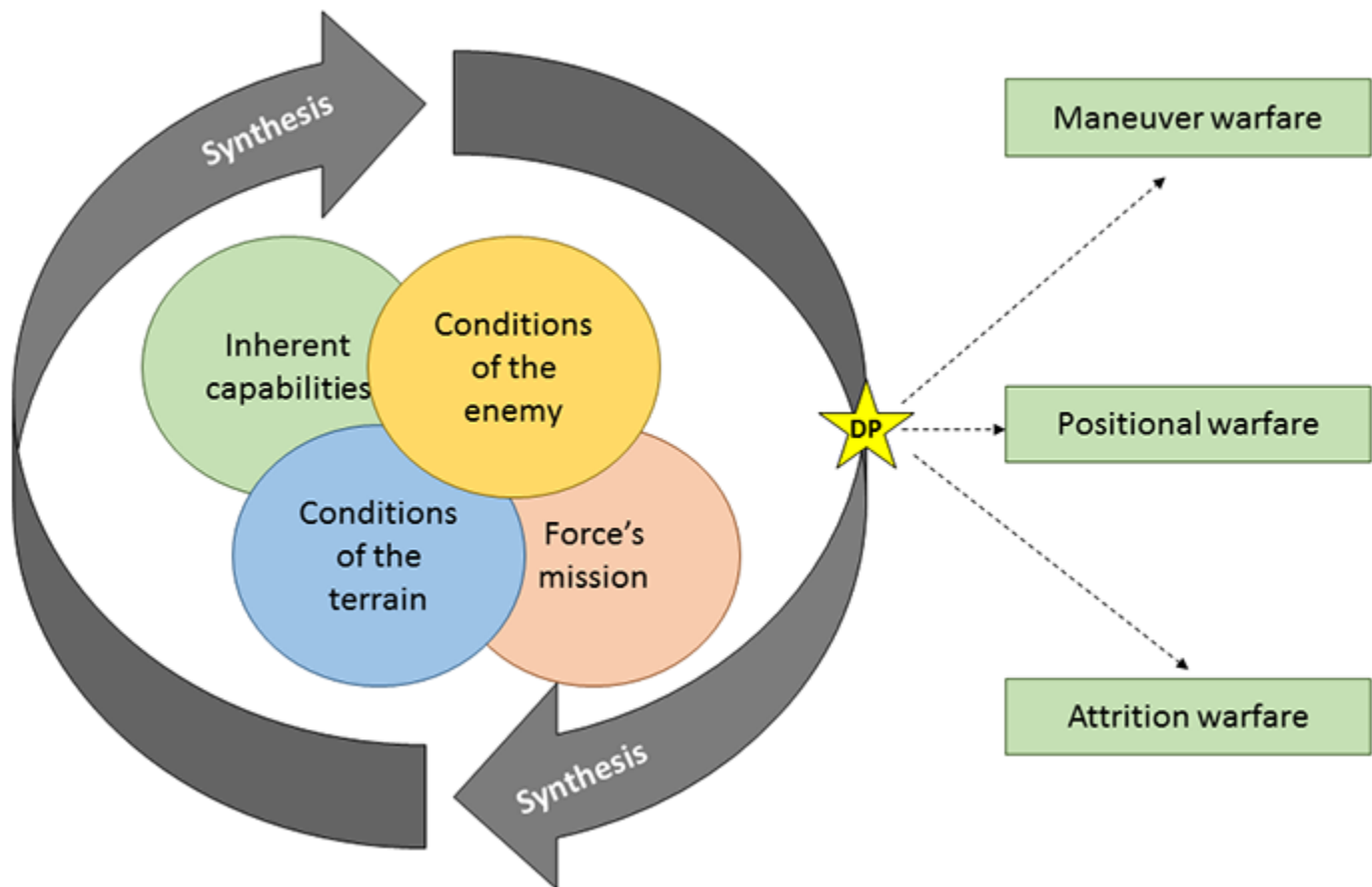


Figure 5. Selection process for the forms of warfare.

meaningful manner. What is important is tactical combined-arms proficiency because it is relevant to all components of the maneuver-attrition-positional warfare triad. Terrain, the enemy or friendly conditions will influence the method of fighting, but combined-arms action will be inherent in whichever scenario presents itself.

With this in mind, doctrine would be better served if it embraced the usefulness of all three forms of warfare instead of viewing maneuver warfare as the silver bullet for operational and tactical success in relation to conventional operations. Similarly, the maneuver-attrition-positional triad will potentially lessen the U.S. Army's proclivity in projecting its own fighting paradigm – maneuver warfare – on its opponents. The result of this will be Armor and Cavalry leaders better prepared to understand a belligerent's probable intentions and plans.

Therefore, as an institution, the Army should reframe how it thinks, writes and speaks about conventional combat operations. A starting point would to

restructure Army doctrine to account for the interdependent relationship among maneuver warfare, positional warfare and attritional warfare. To do so, adjusting the concept of “forms of maneuver” to “methods of operations” would be a start, and then within that category place the forms of operations and their derivative forms of action.

History offers many examples of successful battles, campaigns and operations. The argument can be made that most great campaigns are the result of blending maneuver, positional warfare and attrition based on a forces' inherent capabilities applied to the battlefield conditions. Few campaigns in history illustrate this dynamic better than Napoleon Bonaparte's Ulm-Austerlitz Campaign (1805) from the War of the Third Coalition (1803-1806), in which France faced off against a multi-nation European alliance.¹⁷ The campaign is instructive because it clearly shows the interconnected relationship among maneuver, positional and attrition warfare, and how each supported the other, enabling victory in respective aspects of the campaign.

Ulm-Austerlitz Campaign

Napoleon's Ulm-Austerlitz Campaign is arguably one of the best examples demonstrating the interdependent relationship among maneuver warfare, positional warfare and attrition warfare. Napoleon's 1805 campaign consisted of two major engagements: the first at Ulm and the second at Austerlitz.¹⁸

The Battle of Ulm is perhaps the historical apogee of maneuver warfare. Ulm was less a battle per se and more a small collection of engagements Oct. 16-19, 1805. The Austrians, largely unaware of Napoleon's main body thanks to his effective use of terrain, cavalry, mobility and tempo, were completely encircled at Ulm. Upward of 25,000 Austrian soldiers under the command of GEN Karl Mack von Leiberich surrendered there (Figure 6).¹⁹

Preeminent Napoleonic warfare scholar David Chandler wrote about Ulm: “Nevertheless, Napoleon had achieved a great victory on the Danube, and although six weeks later it was to be overshadowed by an even greater

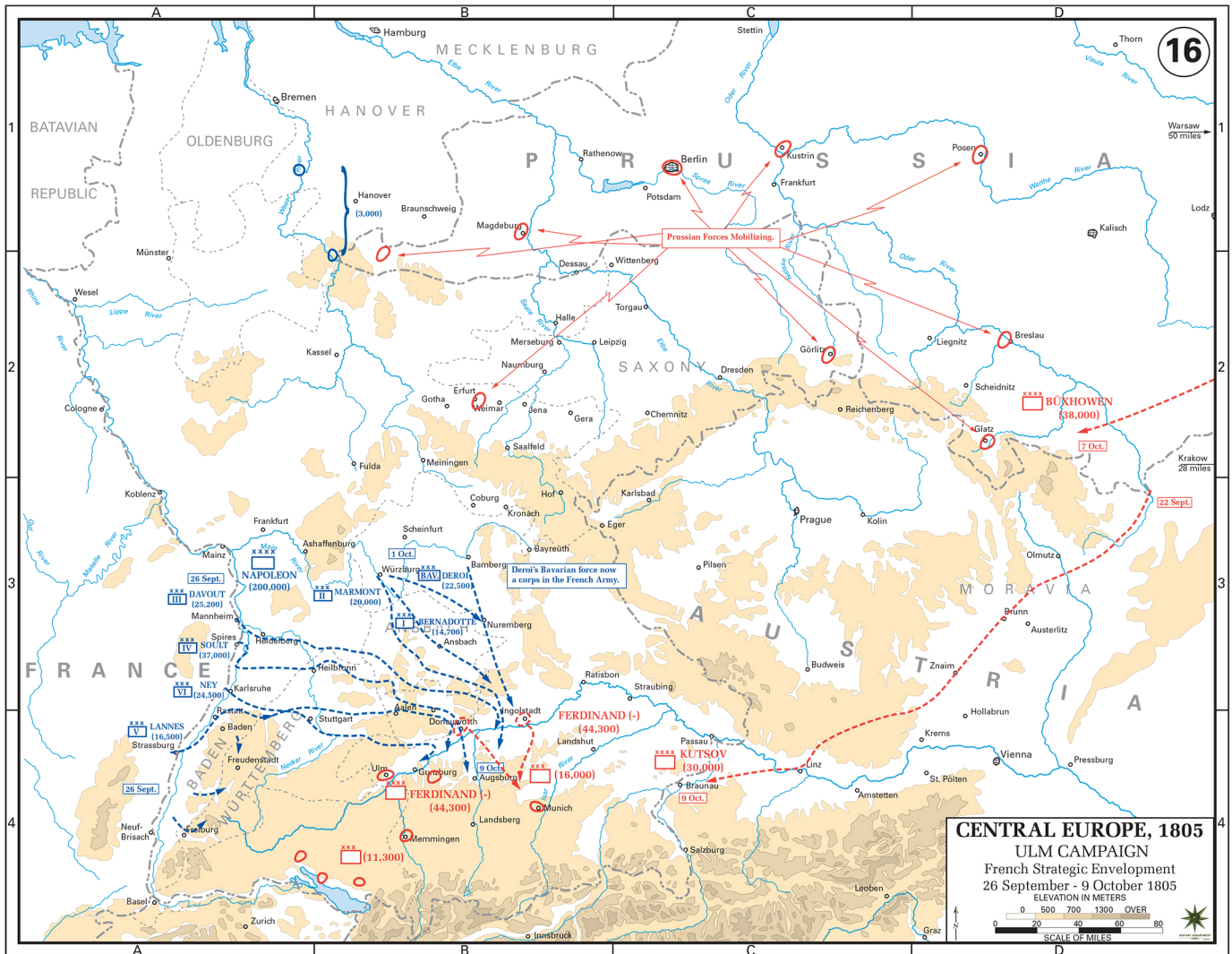


Figure 6. The Ulm Campaign, Central Europe, 1805. (Courtesy Department of History, U.S. Military Academy)

triumph, the magnitude of the capitulation of Ulm must be acknowledged. ... The demoralization consequent upon discovering a powerful enemy on his [von Leiberich's] rear had played a decisive part in paralyzing the victim, while the deficiencies of the Austrian system of command and their fatal miscalculations concerning the proximity of their Russian allies had made the catastrophe practically inevitable."²⁰

The Battle of Austerlitz, fought Dec. 2, 1805, was fundamentally different from Ulm in that it was at first a positional contest before shifting to a battle of attrition. Napoleon, feigning weakness around the Pratzen Heights, set his force in what the Austro-Russian coalition perceived to be a vulnerable position. In doing so, the coalition, under command of Russian Marshal Mikhail Kutuzov, played into the trap Napoleon set. Bonaparte then

unleashed his force to bludgeon the Austro-Russian armies through an attritional battle focused on annihilation. Napoleon's use of positional warfare – using tactics or one's own position to draw a belligerent into a desired location – set the Austro-Russian coalition up for the battering it faced on the Pratzen Heights (Figure 7).

Chandler concludes his discussion on Austerlitz by saying, "11,000 Russians and 4,000 Austrians lay dead on the field, and a further 12,000 Allied troops were made prisoner, together with 180 guns and 50 colors and standards. Thus the Austro-Russian army lost some 27,000 casualties – or one-third of its original strength. The French, however, escaped relatively lightly: perhaps 1,305 were killed, a further 6,940 wounded and 573 more captured."²¹

The result of the Battle of Austerlitz, arguably Napoleon's finest battle, was that "Napoleon had gained his decisive victory, and it duly brought his campaign to a triumphant conclusion."²² The nuance of the campaign highlighted the utility and interplay among maneuver, attrition and positional warfare. Ulm was largely the success of an effective mix of maneuver and positional warfare, while Austerlitz was a brilliant battle because of the balancing of positional and attrition warfare.

Historian Martin van Creveld postulates that positional and attrition warfare, not maneuver warfare, were Napoleon Bonaparte's primary methods of warfare. Creveld states, "Napoleon's system of warfare was based on decisive battles. Not for him were either bloodless maneuvers ... or protracted struggles of attrition. ... He aimed at

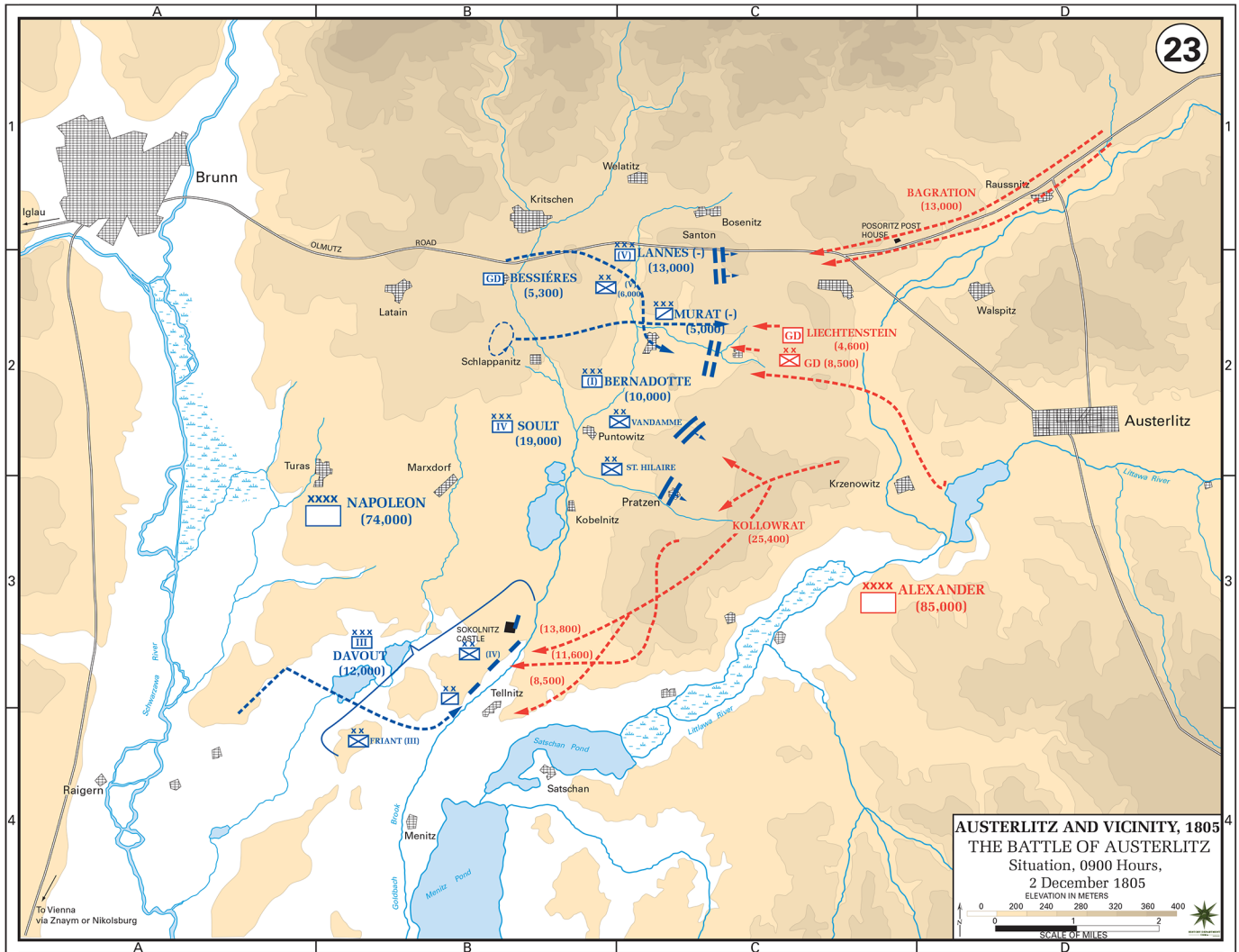


Figure 7. The Battle of Austerlitz, Austerlitz and vicinity. (Courtesy Department of History, U.S. Military Academy)

first pushing his opponent into a corner from which there was no escape, then battering him to pieces.”²³

The game of football offers useful parallels for the practitioner of warfare. The idea of blending forms of warfare correlates to the manner in which an offensive coordinator blends run and pass plays. Within each of those categories nuance is found as well. The run game blends inside, outside and draw plays, while the passing game mixes in a variety of short, long and screen passes. The goal is to be multi-dimensional. Napoleon’s Ulm-Austerlitz Campaign is an excellent example of the benefit in being multi-dimensional in the conduct of warfare. The U.S. Army’s sole focus on maneuver warfare is a prime example of a football team that seeks a touchdown every play by throwing deep but ends up having to punt on almost every fourth down.

Conclusion

Robert M. Citino, writing about the flaws in the German tactical and operational doctrine of World War II, warns, “Nevertheless, there is something incomplete about a way of war that relies on the shock value of small, highly mobile forces and airpower, that stresses rapidity of victory over all, and that then has a difficult time putting the country it has conquered back together again.”²⁴

He continues by discussing the tactical and operational problems posed by the rapid defeat of the Yugoslav army in April 1941, stating that, “The Wehrmacht had overrun Yugoslavia in record time and with ease. It had dismantled a million-man army. ... Its own casualties were just 151 dead.”²⁵ The problem, according to Citino, was that, “The Germans had advanced so far and so fast that they left numerous loose

ends. Yugoslav soldiers cut off from their units soon took to the mountains to form resistance bands, and the Germans would find themselves conducting an anti-partisan campaign for the rest of the war.”²⁶

The U.S. Army’s predilection for maneuver warfare, while turning a blind eye to the usefulness other forms of warfare, including positional and attrition warfare, has left the Army looking like the German army after the toppling of Yugoslavia in Spring 1941. The U.S. Army has chalked up many brilliant tactical victories in Afghanistan and Iraq through shock, mobility and joint firepower in relatively quick time, but like the Germans, also left many loose ends that have allowed operational and strategic victory to slip away. As such, the time has come to take a much broader look at how we think about the conduct of warfare.

Regardless of whether or not doctrine shifts to account for the realities of warfare, students and practitioners of warfare must widen the aperture through which they view the conduct of battle and operations. To that end, British military theorist and general officer Fuller wrote that, "If we wish to think clearly, we must cease imitating; if we wish to cease imitating, we must make use of our imagination."²⁷ With this in mind, Armor and Cavalry leaders must understand that maneuver should not be viewed as an end unto itself, but instead as a component in a three-part construct that oscillates among maneuver, attrition and positional warfare. Maneuver warfare is not a silver bullet or *the* way, but rather conditional, and complements other forms of warfare.

The oscillation among these components is dependent on the relationship among battlefield conditions, the formation's mission and the formation's inherent capabilities – Armor and Cavalry leaders must understand that maneuver is both a theory of warfare (in other words, a theory about how to fight) and a discrete action.

What's more, Armor and Cavalry leaders must understand that the common trope "maneuver is maneuver" is fundamentally incorrect and potentially dangerous. Maneuver in both function and theory is fundamentally rooted in the type of formation being employed, and in the case of contemporary U.S. Cavalry formations, not a skill they conduct but rather one in which they enable.²⁸ Therefore, it is imperative for the Armor and Cavalry leader to understand that maneuver is but one way to think about fighting and a component of a larger whole in regard to the physical conduct of warfare. In doing so, they will better understand enemy intentions and actions.

Lastly, it is important to remember that the conduct of warfare is far more art than science. Therefore, Armor and Cavalry leaders must avoid prophecies of deliverance through theories, doctrines and technology. Instead, Armor and Cavalry leaders must understand the character of the engagements, battles and operations to develop doctrines better grounded in the realities of warfare. Similarly, Armor and

Cavalry leaders must understand the conditional character of the engagements, battles and operations in which they find themselves to apply the reciprocal form of warfare to maximize their effect on the enemy.

Conversely, Armor and Cavalry leaders must not project their own paradigm of action on a given enemy because doing so will likely lead to misjudging how the belligerent will engage in combat. Armor and Cavalry leaders must understand that their adversaries will seek to dislocate U.S. Army forces or to render a belligerent's strength irrelevant.²⁹ Belligerents will seek to dislocate an adversary positionally, functionally or temporally.

Positional dislocation – or the art of rending a belligerent's advantages irrelevant by causing it to be in a disadvantageous location, disposition or orientation – is most often achieved through positional warfare.

Closely related to positional dislocation, functional dislocation renders a belligerent's advantages nil by causing an adversary to fight in a manner for which it is not suited or designed to fight. In most cases, functional dislocation is achieved through the attrition or maneuver warfare, both of which negate the conditional component to an adversary's strength.

Temporal dislocation – or maximizing the temporal characteristics of warfare (in other words, duration, frequency, sequence and time-based opportunity) to negate a belligerent's strengths – is achieved through the use of maneuver.³⁰

All of which is to say, Armor and Cavalry leaders must remain aware of the role positional and attrition warfare play in relation to maneuver warfare and that turning a blind eye to those forms of warfare is counterproductive. Maneuver warfare is not a silver bullet and should not be perceived as *the* answer, but rather one of many solutions to problems faced by commanders on the battlefield.

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Endnotes

¹ For more information on the Russo-Ukrainian War, see the author's "Making Sense of Russian Hybrid Warfare: A Brief Assessment of the Russo-Ukrainian War," *The Land Warfare Papers*, No. 112, March 2017 (coauthored with MAJ Andrew Rossow) and the author's "Battle of Debal'tseve: the Conventional Line of Effort in Russia's Hybrid War in Ukraine," *ARMOR*, Winter 2017.

² Steven T. Ross, "Napoleon and Maneuver Warfare," in *The Harmon Memorial Lectures in Military History, 1959-1987*, edited by Harry R. Borowski, Washington, DC: Office of Air Force History, U.S. Air Force, 1988.

³ Martin Blumenson and James Stokesbury, *Masters of the Art of Command*, New York: Da Capo, 1990 (originally published in Boston by Houghton Mifflin, 1975).

⁴ Azar Gat, *A History of Military Thought: From the Enlightenment to the Cold War*, Oxford: Oxford University Press, 2001.

⁵ Blumenson and Stokesbury.

⁶ William Lind, "The Theory and Practice

of Maneuver Warfare,” in Richard D. Hooker, editor, *Maneuver Warfare: An Anthology*, Novato, CA: Presidio Press, 1993.

⁷ The tactical level is also aware of the psychological component of maneuver warfare, but at a far lesser degree than the operational level.

⁸ Joint Publication 3-0, *Joint Operations*, Washington, DC: Government Printing Office, 2017.

⁹ Army Doctrinal Reference Publication (ADRP) 3-0, *Operations*, Washington, DC: Government Printing Office, 2016.

⁰ Robert R. Leonhard, *The Principles of War for the Information Age*, Novato, CA: Presidio Press, 1998.

¹ Several authors – including Robert Citino and Lawrence Freedman – suggest that attrition and positional warfare are predominately static, defensive forms of fighting.

¹² The argument can be made that maneuver warfare is a sub-component of positional warfare due to its focus on physical and temporal positions in relation to an adversary. However, that discussion exceeds the scope, scale and purpose of this article.

¹³ Blumenson and Stokesbury.

¹⁴ ADRP 3-0.

¹⁵ <https://www.merriam-webster.com/dictionary/polysemous>.

¹⁶ *Word creep* is defined by the author as the gradual broadening of the original definition of a word or concept. The definition is an off-shoot of *mission creep*, which is defined as the gradual broadening of the original objective of a mission or organization. See <https://www.merriam-webster.com/dictionary/mission%20creep>.

¹⁷ Nations included Great Britain, Russia, Austria, Sweden and the kingdoms of Naples and Sicily. See David Chandler, *The Campaigns of Napoleon*, New York: Scribner Press, 1966.

¹⁸ The campaign consisted of several smaller battles along the way, those battles helping shape the major battles. However, a discussion of these battles is left out of this article because they do not provide much addition to the discussion.

¹⁹ Chandler.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ Martin van Creveld, *Command in War*, Cambridge: Harvard University Press, 1985.

²⁴ Robert M. Citino, *Death of the Wehrmacht: The German Campaigns of 1942*, Lawrence: University Press of Kansas, 2007.

ACRONYM QUICK-SCAN

ACR – armored cavalry regiment

ADRP – Army doctrinal reference publication

SAMS – School of Advanced Military Studies

²⁵ Ibid.

²⁶ Ibid.

²⁷ J.F.C. Fuller, *Generalship: Its Diseases and Their Cure, A Study of the Personal Factor in Command*, London: Faber and Faber Limited, 1936.

²⁸ Looking beyond the U.S. Army, the traditional role of the cavalry was far greater than that of just reconnaissance and security operations. The traditional role of cavalry operations focused on reconnaissance, security, quick-strike direct attacks / penetrations, envelopments and, as the exploitation force, viciously pursuing a fleeing enemy to scythe them down as they retreated. The U.S. Cavalry has all but eliminated the capability to conduct quick-strike direct attacks / penetrations, envelopments and pursuit by focusing – in doctrine, force structure and education/training – solely on reconnaissance and security.

²⁹ Leonhard.

³⁰ Ibid.

Rethinking Aspects of Design and the Military Decision-Making Process

Lessons-Learned and Recommendations from a Command and General Staff College Student Exchange to the German Führungsakademie

by MAJ Gary M. Klein and
MAJ John M. Nimmons

Militaries around the world have a number of different planning processes, each with their own advantages and disadvantages. These processes provide a common language and shared understanding for leaders, facilitating efficient and effective planning.¹ This affords significant advantages for new and experienced staffs alike.

The U.S. Army captures its planning processes in two manuals: Army Technical Publication (ATP) 5-0.1, *Army Design Methodology* (ADM), and Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, which covers the military decision-making process (MDMP) and troop-leading procedures. These manuals describe proven processes and methods for staffs to analyze and plan operations. Unfortunately, many staffs apply these planning processes in isolation, neglecting to integrate other important planning concepts. In other cases, planning can create gaps that hinder transitions such as that between conceptual and detailed planning (in other words, ADM and MDMP).

This article will describe four techniques used during Exercise Determined Effort, an annual U.S.-German planning exercise, which can be used during ADM and MDMP to integrate existing doctrinal concepts and enable more effective planning.² These techniques focus on the following four areas, which will be described in detail in subsequent sections:

- When developing an operational approach, staffs should consider including decision points and branch plans to enable flexibility during execution.
- To enable the transition from conceptual to detailed planning, staffs should develop a task-and-effects matrix to ensure courses of

action (CoAs) account for all aspects of the operational approach.

- During mission analysis, staffs should conduct factor analysis to enable collaboration and develop “so what” and “therefore” conclusions that enable CoA development.
- During the CoA decision brief, each staff section should be prepared to present the advantages and disadvantages of the CoAs based on its warfighting function (WfF) or expertise.

Branch plans, decision points

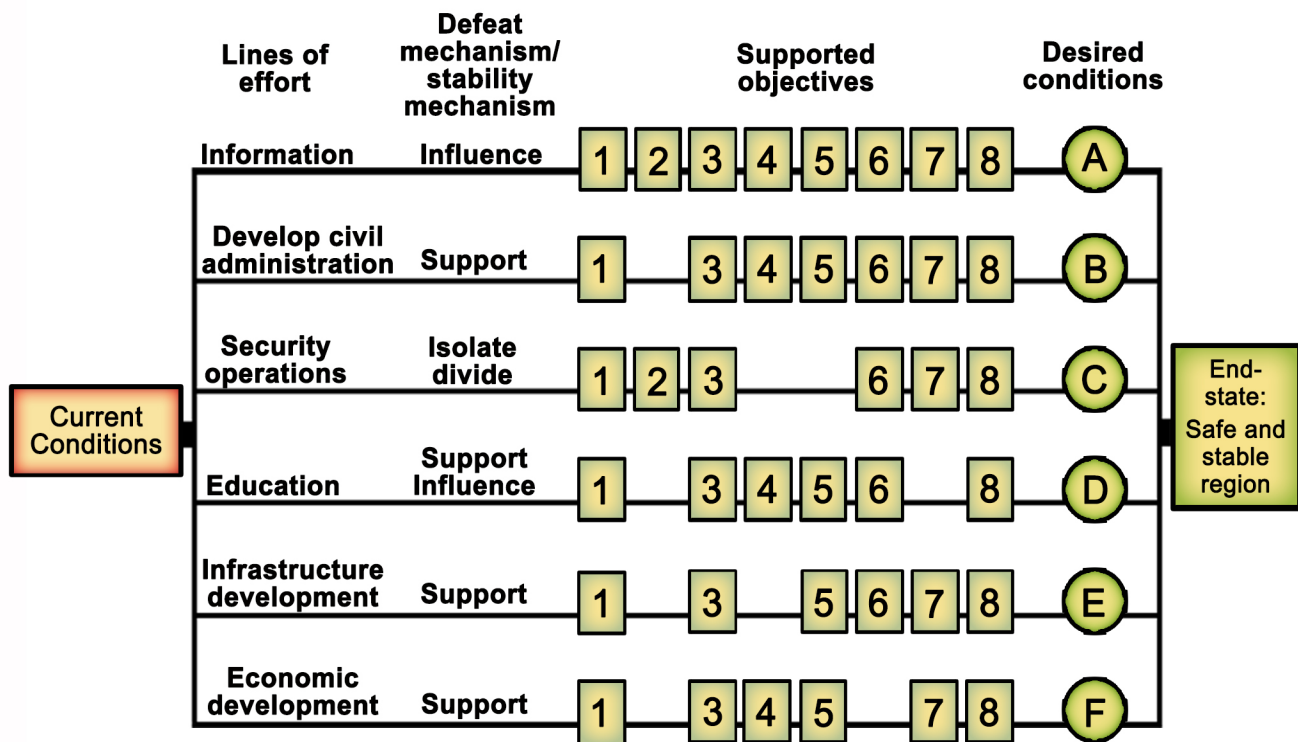
An operational approach is “a description of the broad actions the force must take to transform the current conditions into those desired at the endstate.” It is not a detailed CoA, which is developed during MDMP, but rather a conceptual description of “what needs to be done,” usually described using a visual model and a supporting narrative.³ Most examples of operational approaches from doctrine and the operational force are very similar: linear models depicting a series of objectives arrayed along lines of operation (LoOs) or effort (LoEs) (Figure 1). The development of these models is useful for planning against ill-structured problems and focusing the staff and subordinate units’ planning efforts. However, they have a tendency to oversimplify future actions because they rarely account for variables or planning contingencies.

Given the current doctrinal model and usual time-constrained environment, it is not surprising that leaders prioritize developing one well-detailed plan over one that includes multiple branches. However, a LoO without any decision points or branch plans represents an inflexible plan. Once an operation begins, the enemy often acts in a manner different from its anticipated CoA, which requires leaders to adapt their plans in real time.⁴ This is impossible

to avoid, but planners can enable operational agility by anticipating enemy options, capturing these as decision points and developing conceptual branch plans. Depending on time constraints, staffs might not be able to develop the details of its decision points and branch plans; however, by anticipating and thinking through alternatives – even briefly – they will ensure they are better prepared.

Exercise Determined Effort planners attempted to balance the aforementioned challenges by developing alternative enemy CoAs and accounting for them with friendly decision points and conceptual branch plans in their operational approach (Figure 1).⁵ Unfortunately, Determined Effort was only a planning exercise, so this plan was not executed or simulated to test the effectiveness of these efforts. However, the authors hypothesize that units can enhance their adaptability by thinking through these aspects and including them within their operational approach. Even if staffs do not develop the full details of their branch plans, the thought process and collaborative dialogue can stimulate the seeds of adaptation. As Dwight D. Eisenhower famously stated, “Plans are worthless, but planning is everything.”⁶ In this regard, leaders should consider not only the details and depth of their planning efforts but also the breadth.

To help planners visualize operational planning in breadth, ATP 5-0.1 should add an example of an operational approach that includes decision points and branch plans. This example should be displayed alongside the current linear model to provide planners another option depending on their specific situation. Not all plans are going to require branches, and in some cases, the staff may not have enough time to create a branched operational approach. However, presenting this option will provide a model for planners to create



- 1 Positively influence people
- 2 Trained and professional security force
- 3 Civil security operations
- 4 Literacy rate improved
- 5 Population has access to essential services
- 6 Qualified and trained civil service
- 7 Diminish illegal networks
- 8 Revenues increased
- A Populace regularly, readily interacts with provincial government
- B Civil servants maintaining regular work hours and actively pursuing their responsibilities
- C Available and trained security forces employed effectively by the provincial government
- D School attendance increased
- E Improved conditions for basic services
- F Increased investment / projects in the provinces

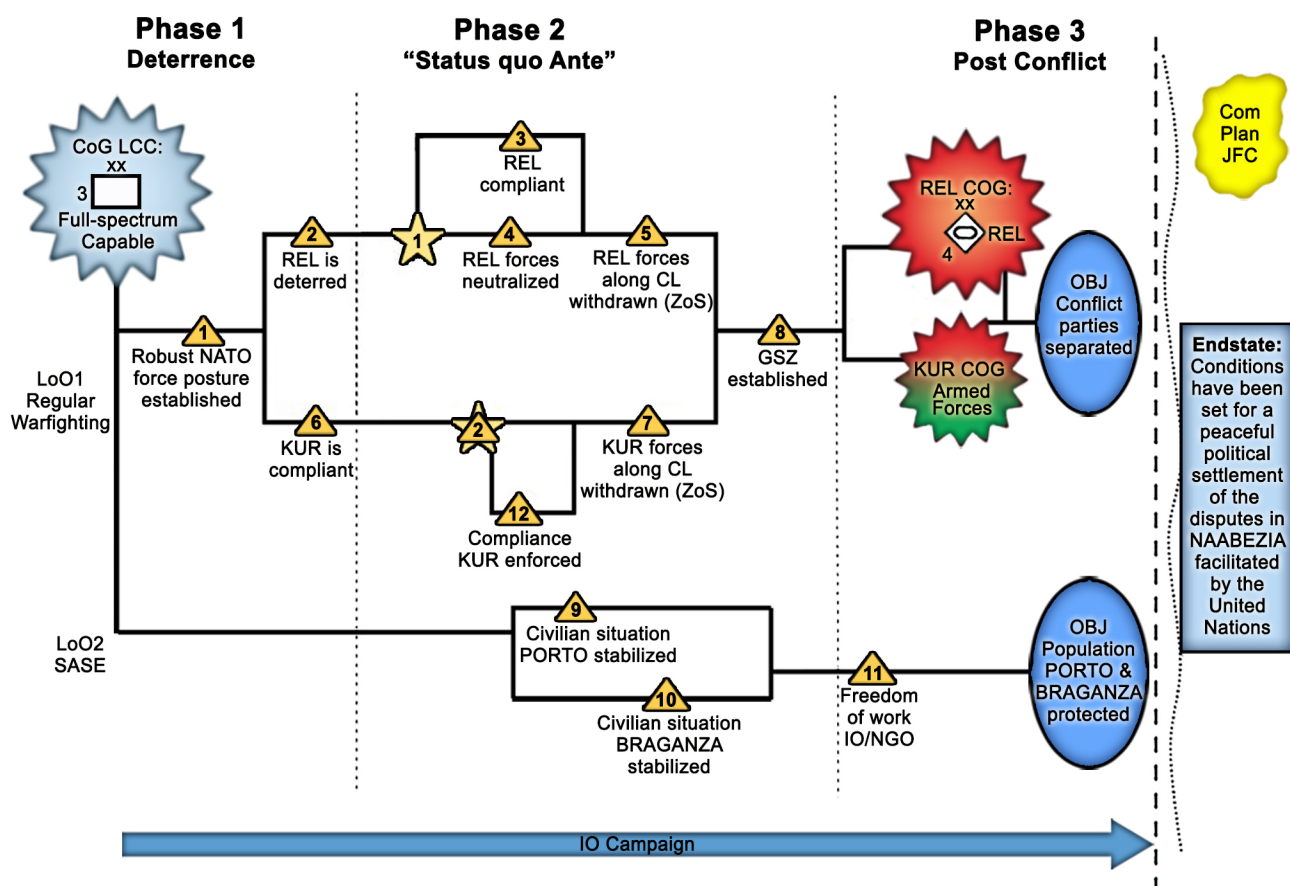


Figure 1. Top: Adapted from ATP 5-0.1's Figure 5-3, an operational approach is depicted that linearly links LoOs or LoEs. Bottom: The operational framework developed during Exercise Determined Effort has two LoOs (regular warfighting and a safe and secure environment), both of which include decision points and branch plans.

more adaptive plans. From there, it will be up to leaders to use their judgment as to which model to use based on their specific situation and planning timeline.

Linking tasks, effects

Developing a CoA from an operational approach can be a difficult task. The seemingly simple task of translating the operational approach's broad objectives into detailed tasks can be challenging. Also, the CoA-development team may or may not include planners who were involved with developing the operational approach. In either case, CoA planners may find themselves unsure about certain aspects of the operational approach. ATP 5-0.1 acknowledges some of the challenges of transitioning from conceptual planning to detailed planning, stating that "[b]riefing the results of ADM and handing over associated products to another planning team is not an effective approach. Often the same planning team that led the design effort leads the staff through the MDMP. If not, key members of the planning team are part of the core element of the planning team performing the MDMP."⁷

Although current Army doctrine does

not offer any specific solutions, one way to bridge the potential gap between conceptual and detailed planning is by developing and communicating the desired effects of each objective.

During Exercise Determined Effort, the staff employed a combination of doctrinal and procedural techniques to enable the transition from conceptual to detailed planning. Per the Comprehensive Operations Planning Directive (COPD), the design team developed a task-and-effects matrix that captured the desired effects and tasks for each objective on each LoO and LoE.⁸ Also, the chief of staff integrated design-team members into each CoA-development group to enable continuity in planning and ensure the group understood the operational approach. These doctrinal and procedural steps ensured effects were translated between planning phases and facilitated collaboration across staff sections.

The staff developed the task-and-effects matrix during conceptual planning to capture the results of the COPD's planning process, which began with determining the desired endstate and backward planning objectives,

decisive conditions, effects and finally, tasks (Figure 2).⁹ The completed task-and-effects matrix (Table 1) and the operational approach (Figure 1) subsequently served as a starting point for each CoA planning team. As the CoA planners developed their detailed plans, they referred to these documents to ensure their plan accomplished all the desired effects and stayed within the parameters of the operational approach.

The COPD conceptual planning process is mirrored in Joint Publication (JP) 5-0's (*Joint Operational Planning*) description of the elements of operational design (objectives, effects and tasks), but Determined Effort planners went a step further by linking each task and effect to specific objectives (Table 1).¹⁰ Looking at Army doctrine, ATP 5-0.1 does not include developing either effects or tasks during conceptual planning.¹¹ This leaves Army planners potentially susceptible to the aforementioned gap in understanding between the broad objectives developed during conceptual planning and specific tasks developed during detailed planning.

The second step the Determined Effort

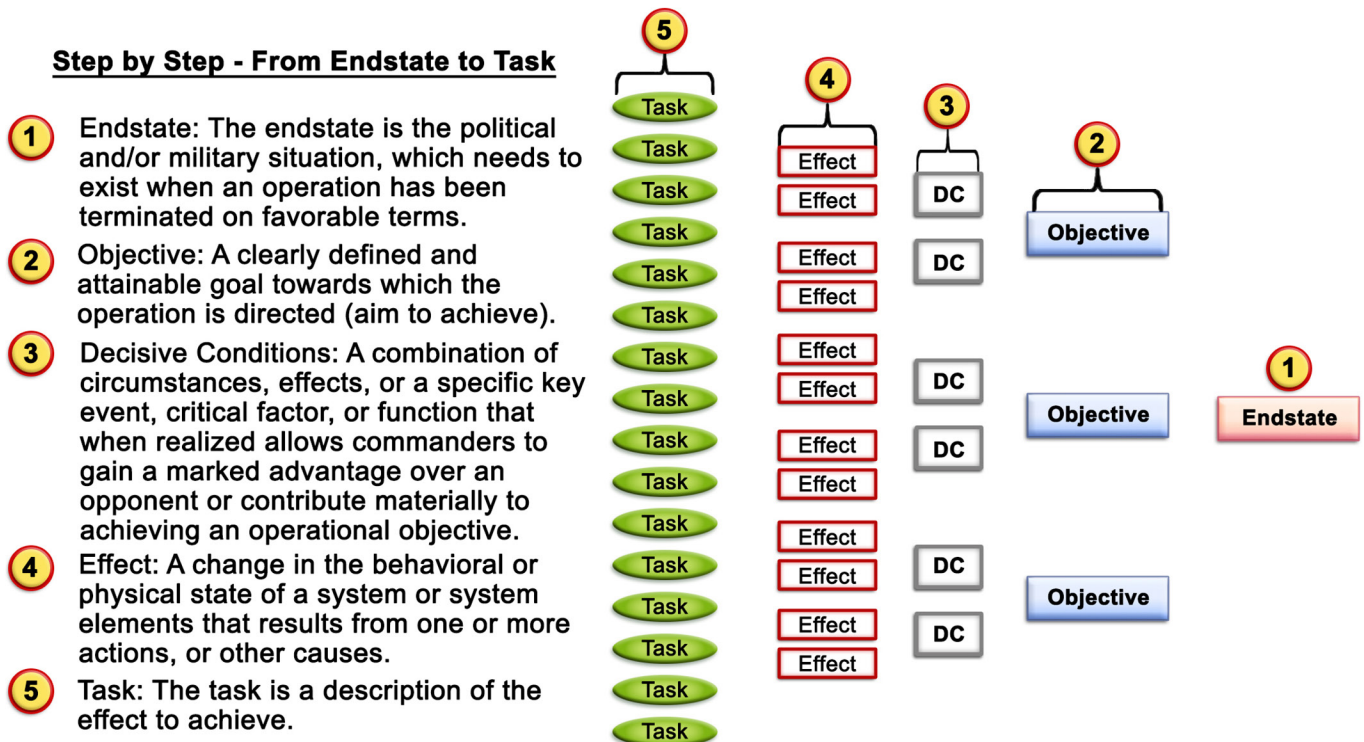


Figure 2. Tasks are linked to effects and decisive conditions that lead to the desired endstate. (Adapted from Figure 13, NATO standing operating instructions COPD)

No.	Decisive conditions	Effect	Action
1	NATO in AoO	1.1 NRF FOC 1.2 1 st (BER) Armoured Div FOC 1.3 LCC FOC	1.1.1 Early deployment of NRF forces NLT 2 Aug 20XX 1.1.2 Conduct RSOI 1.2.1. Early detachment of LCC LNO to 1 st (BER) Div 1.2.1 Conduct Joint exercises in JoA 1.3.1 Deployment of OLRT 1.3.2 Deployment of ICE 1.3.3 Buildup of LCC complete
2	KUR CoG retired	2.1 KUR armed forces transition out of PORTO area 2.2 KUR security forces transition out of PORTO area 2.3 LCC security forces in place 2.4 Civilian support for NATO ops 2.5 Establish CIMIC IVO PORTO	2.1.1 Establish division HQ in KUR 2.1.2 Establish LNO to KUR land forces 2.1.3 Coordinate withdrawal of armed forces 2.2.1 Establish LNO to KUR land forces 2.2.2 Identify locations of all forces being replaced 2.2.3 Coordinate withdrawal of security forces 2.3.1 KLE with PORTO authorities 2.4.1 IO campaign to convey that NAABFOR will secure the PORTO area 2.5.1 Establish CIMIC 2.5.2 Establish CRITIS 2.5.3 Establish CIMIC LNOs
3	FoM established	3.1 No air attacks on friendly forces 3.2 DPRE movements coordinated through LCC HQ 3.3 Facilitate POW 3.4 No IDF and AD attacks 3.5 NAABFOR movements not hampered by civilians	3.1.1 (REL) AHReg neutralized 3.1.2 Control airspace by ACC 3.1.3 Neutralize TBM 3.2.1 Establish DPRE C2 cell 3.3.1 Establish POW camps with capacity of minimum 2K 3.4.1 Neutralize IDF and AD attacks 3.5.1 IO campaign to gain civilian support
4	REL CoG neutralized	4.1 1 st Division not able to fight 4.2 5 th Division not able to fight 4.3 4 th Division not able to fight 4.4 BorderReg 600 not able to defend IRB 4.5 BorderReg 700 not able to defend IRB 4.6 Influence of HoS SAMPAIO decreased 4.7 C2 of REL divisions and brigades disrupted 4.8 COM 1 (REL) division persuaded to cease fighting	4.1.1 IO campaign convince (REL) 1 st Division to cease fighting 4.1.2 (REL) 1 st Division neutralized 4.2.1 IO campaign convince (REL) 5 th Division to cease fighting 4.2.2 (REL) 5 th Division neutralized 4.3.1 IO campaign convince (REL) 4 th Division to cease fighting 4.3.2 Com (REL) 4 th Division neutralized 4.3.3 (REL) 4 th Division neutralized 4.4.1 Locate and neutralize CP BorderReg 600 4.5.1 Locate and neutralize CP BorderReg 700 4.6.1 IO campaign to link HoS with UA/UP 4.7.1 Locate and neutralize CP with EW 4.7.1 Locate and destroy CP with ACC 4.8.1 IO campaign convince (REL) 1 st Division to cease fighting

Table 1. An excerpt from the Exercise Determined Effort mission-analysis brief. This task-and-effects matrix ties specific effects and actions (in other words, tasks) to each decisive condition from the operational approach to achieve the desired endstate.

staff took to facilitate the transition from conceptual to detailed planning was to integrate members from the design team into the CoA-development teams. This was key in facilitating shared understanding so that the staff did not “stovepipe” the design and CoA-planning processes. Representatives from the design team were integrated into the two CoA planning teams, and the rest of the design team remained available to answer questions, discuss desired effects and critique the CoA as it was being developed. It is important for leaders to consider how design planners contribute throughout the planning process to ensure the integrity of the plan.

Current doctrine does not provide any tools to facilitate the transition from conceptual to detailed planning, so ATP 5-0.1 should add an example of a task-and-effects matrix to fill this gap. A task-and-effects matrix is an outstanding tool to ensure detailed tasks are nested with the desired effects from the operational approach. Also, this matrix is an easy way to communicate these linkages to detailed planners, who will be charged with developing CoAs.

Finally, planners should heed the ATP’s advice to integrate members from the design team into CoA-development teams. These doctrinal and procedural steps will go a long way toward facilitating the transition from conceptual to detailed planning.

Factor analysis, running estimates

FM 6-0 states that mission analysis is the most important step of MDMP. During mission analysis, staff officers must analyze and share information from across the mission variables to ensure their effects are understood in terms of current and future

missions. Staffs often struggle with mission analysis and running estimates because they struggle to identify and analyze the most pertinent information.

ATP 5-0.1 lists several cognitive biases that staffs might face during this process. One of the most significant is the anchoring bias, which is explained as the “tendency for humans to use initial estimates or information as a starting point for adjustment. Even though additional information invalidates the initial estimate, humans unconsciously use the initial estimate as a starting point when making subsequent judgments.”¹² Understanding this bias is important during mission analysis because a staff must be cognizant of how existing running estimates and formats affect its analysis.

Planners can easily fall prey to two anchoring biases during mission analysis. The first is based on previous experience. When planning a new mission, staffs sometimes resort to dusting off pre-existing running estimates. This anchors their understanding of the current situation and may lead to false assumptions about the future. The second is based on planning formats or shells. Planners must constantly assess and review the format of their running estimates because it may anchor

thinking, too. FM 6-0 states that staffs and commanders should use running estimates that consider facts, assumptions, friendly-force status, enemy activities and capabilities, civil considerations, conclusions and recommendations.¹³ While these categories are useful to frame mission variables, they may constrain planners from thinking outside the box.

The NATO COPD describes a different way to analyze an operational environment called **factor analysis**, which may help planners avoid anchoring biases. The COPD defines a factor as the “circumstances, conditions, facts or other influences that will have an effect on your operation;” similar to what U.S. Army planners might call a mission variable.¹⁴ “The analysis of factors is executed to determine the key significant aspects of time, forces, space and information areas.”¹⁵ Table 2 describes the factor-analysis process, which requires planners to analyze factors to determine significant deductions (“so what”) and conclusions (“therefore”).¹⁶

The staff does not categorize its factors until it has determined its conclusions, and the conclusions are the only aspects of factor analysis that the staff presents during mission analysis. Instead of encouraging planners to fill up categories or charts, factor analysis

Factor	Deduction	Conclusion
Circumstances, conditions, facts or other influences that will have an effect on your operation. Should be written as a full sentence. -A factual statement?	Concise, relevant building blocks of analysis that lead to a logical conclusion. -So what? / which means?	Military requirements or conditions that must be established with respect to time, space and forces -So what can or should be done?
Conclusions/outputs		
A = assumption CAP = capability CCIR = commander’s critical information requirements CL = clarification CNMA = complementary / non-military action CST = constraint CT = critical timing DEC = decision DP = decision point	DC = decisive condition E = effect EEFF = essential element of friendly force FFIR = friendly-force information requirement HNIR = host-nation information requirement OBJ = objective ORJ = organization PG = planning guidance PfS = pre-condition for success	PIR = priority intelligence requirement PM = planning milestone RES = resource REQ = requirement RFI = request for information RI = risk RoE = rule of engagement T = task VUL = vulnerability

Table 2. Figure 9 from the NATO SOI COPD lists the three steps of factor analysis (identifying factors and developing deductions and conclusions). This process focuses on conclusions, which are categorized for future planning (A through VUL).

Key factors and conclusions			M&M (aviation) – LCC Opord 59991-26 Caspian Challenge				
G-2 / G-5	<p>Freedom of maneuver (FoM) is essential for operations</p> <p>1 REL armed forces, terrorist attacks and refugees might hamper FoM (current negative effect)</p> <p>2 Other actors like IO/NGOs will also use MSRs (positive effect)</p> <p>3 NATO forces will deploy and operate without hindrance in KUR (desired effect)</p>	T	Monitoring and securing along MSR	<p>Forces/systems available</p> <p>11D CAB(+) (Annex A): 1-6 Cav (ARS) (24xAH, 12x RQ-7); 1-1 ARB (24xAH); 2-1 GSAB (10xUH, 12xCH, 15xHH medevac); 3-1 AHB (AASLT) 30xUH; F/1 CAB (12x MQ-1C)</p> <p>82 CAB (II Corps asset): 3x ARS/ARBs; 2x AHBs; GSAB; MQ-1C, RQ-7</p>	<p>Assumptions</p> <p>11D ISR assets will not be pulled / retained at corps level</p> <p>82 CAB avn assets will be available for tasking during Phase III</p> <p>Air Force weather reporting (SWO) attached / assigned to 11D CAB</p> <p>CAB retains ASB and FSC to establish / maintain up to 5 FARPs</p> <p>11D CAB will be staging at Ganja at start of Phase III</p> <p>11D CAB will be TAAs / field sites in AO 4</p> <p>Recommended UAS operating levels will remain in place (C-10-6): Raven, SFC-1,000' AGL; RQ-2B Pioneer, 3,500'-4,500' AGL; RQ-7 Shadow, 5,000'-6,000' AGL (<13,000' MSL); RQ-5 Hunter, 6,500'-7,500' AGL (<13,000' MSL); MQ-1C Gray Eagle, 13,500'-17,000' MSL</p>	<p>Specified tasks</p> <p>Establish JAGIC to manage / integrate airspace (C-10-4)</p> <p>Coordinate with 82 CAB for AASLT support NLT 96 hours prior to execution (C-17)</p> <p>Units must submit ACMRs for all tactical towers, non-directional beacons and FARPs with LCC AE IOT be placed on the ACO ASAP (C-10-5)</p>	<p>Limitations</p> <p>11D CAB has one air traffic services (ATS) company – can manage only one airfield and two field sites</p> <p>Seasonal weather (poor visibility) results in moderate risk for avn and potentially limits visual acquisition of targets and hazards</p>
		CAP	Implement liaison element to IO/NGO				
		T	Use of MSR coordinated, control DPRE movement in close cooperation with IOs/NGOs IOT ensure FoM for NAABFOR at any time during operation	<p>Planning factors</p> <p>11D CAB assigned to 4ID (Annex A)</p> <p>82 CAB under II Corps, potential assets available for Phase III (Annex C-16)</p>	<p>Implied tasks</p> <p>Develop ACMs / ACMRs to assign, integrate airspace with corps G-3(A) and MNFACC</p> <p>Coordinate / integrate with JAGIC and Fires for FSCMs / ROZ development in AO</p> <p>BPT attack, air assault, air movement, airborne C2 and medevac ops ISO 4ID</p> <p>ASB and avn bn FSCs establish FARP(s) ISO avn operations</p>	<p>Additional capabilities needed</p> <p>If multiple airfields will be operating ISO 11D CAB, additional ATS assets will be required (TAOG, AOBs, USAF)</p>	
		REQ	Air transport for urgent logistic support				
		REQ	MilEng capabilities to enable fast movement	<p>Facts</p> <p>ACMRs due 96 hours prior to ACO execution (C-10-4)</p> <p>Coordination level in the JoA is 3,000' ACL (R/W & F/W) (C-10-5)</p> <p>Coordinating altitude is 19,000' MSL (C-10-5)</p> <p>4ID will control airspace in div AO (AO 4) from div rear boundary to FSCL (SFC to 3,000' AGL) (C-10-3)</p>	<p>Critical issues for the commander</p> <p>None at this time</p>		
		DC	FoM has to be established for IOs/NGOs and NAABFOR				
		REQ	NATO forces will need a lodgment in KUR from which to sustain operations				
		HNIR	NATO forces will need a port to provide maritime LCC sustainment				
CAP	KUR military and police will assist NATO forces with both military and peace-keeping missions						

Table 3. Left, an example of one of the factor-analysis slides from Exercise Determined Effort. Here the main focus is to relay a key aspect of the operation and its correlation to current or desired effects. This is then translated to tasks (T), capabilities (CAP), requirements (REQ), decisive conditions (DC) or host-nation information requirements (HNIR). By cataloguing information this way, information is more concisely packaged and addresses deeper analysis of the problem. Right, an example of a running estimate from Exercise Caspian Challenge at CGSOC. Here planning factors are listed, but there is no linkage of these factors to other facts, assumptions or other aspects of the running estimate. With this method, the running estimate often becomes a mass of information rather than concisely capturing the most pertinent information needed later in the planning process.

encourages staffs to identify and analyze the most important factors, regardless of category.

See Table 3 for a side-by-side comparison of a typical COPD factor analysis and U.S. Army running estimate.

The key to factor analysis is understanding that running estimates are “thought-engines” rather than simply data points or individual pieces of information. While information is the foundation of analysis, understanding its relevance within the context of the overall situation creates knowledge that is critical during planning. The best way to create this knowledge is usually through collaboration and dia-

logue across the staff.

To enable planners to develop more useful knowledge and conclusions during mission analysis, FM 6-0 should integrate its description of processing and analyzing information with its discussion of running estimates and mission analysis. The chapter on “managing knowledge and information” emphasizes processing and synthesizing information, but this must be integrated into the chapter on mission analysis as well, which does not currently emphasize “so what” and “therefore” conclusions.¹⁷ The COPD’s presentation of factor analysis is one way of doing this (Table 2). Also, the sections on running

estimates and mission analysis should emphasize the importance of collaboration across the staff. Ultimately, the desired output of mission analysis is a clear understanding of the operational environment and the key factors that will impact the mission. The COPD’s factor analysis does an outstanding job of doing this, and our doctrine could be improved to enable the same outcomes.

All WfFs contribute

According to FM 6-0, CoA comparison is “an objective process to evaluate CoAs independently and against set evaluation criteria approved by the commander and staff. The goal is to

identify the strengths and weaknesses of CoAs, [enabling the selection of] a CoA with the highest probability of success.”¹⁸ FM 6-0 goes on to state that staffs can use any technique to assist the commander’s decision-making, but it describes just one technique: the decision matrix. Many staffs use decision matrices because they enable staffs to quantify their recommendations, thereby attempting to make their process as objective as possible (Table 4). However, FM 6-0 goes on to admit that these quantitative comparisons may be based on subjective criteria and relative values.¹⁹ Instead of attempting to become entirely objective, it might be worth considering alternative ways for the staff to make recommendations to the commander.

Another challenge is that CoA comparison and decision matrices often focus on evaluation criteria that are maneuver-centric, even though the plan relies on the unit’s ability to sustain itself and interact with civil populations, and other factors as well. Along these lines, FM 6-0 states that CoA comparison starts with staff members evaluating the advantages and disadvantages of each CoA using their expertise; unfortunately, it does not suggest any techniques for each staff section to present this analysis to the commander.²⁰

During Determined Effort, each staff section conducted its own advantages-and-disadvantages analysis and presented its findings as part of the CoA decision brief. After each staff section presented its analysis and its recommended CoA, the lead planner presented an overall recommendation. The staff presented this information

using a format that included bulletized advantages and disadvantages supported by basic graphics (Figure 3). Although some leaders might be uncomfortable with different staff sections recommending different CoAs, their differences helped the staff highlight some of the risks of each CoA and enabled the commander and staff to consider additional mitigation measures as necessary.²¹

Following the Determined Effort CoA decision brief, the commander said that the most significant piece of information that influenced his CoA selection was the advantage-and-disadvantage analysis briefed by the G-9 (Table 4 and Figure 3). In CoA 1, the attack was going to traverse through a number of moderately populated and sensitive areas, while in CoA 2 the main attack was going to take place in a more sparsely populated area. The commander chose CoA 2 as a way to mitigate civil risk.

This is just one example of the information that the staff can provide to the commander during CoA comparison to ensure the commander is empowered to make the best decision possible.

To enable staffs to share the results of their CoA analysis and comparison, a figure should be added to FM 6-0 that shows a way for staffs to communicate the advantages and disadvantages of each CoA. A figure like that displayed in Table 4 and Figure 3 would provide a way for staffs to visually communicate their recommendations in addition to the usual narrative or quantitative approach. This will provide another option for planners to use depending on their specific circumstances,

including different commanders, most of whom receive information differently.

Conclusion

Army planning doctrine describes proven processes and techniques for staffs to analyze and plan operations. Unfortunately, staffs often apply these methods in isolation, creating gaps in planning. This article has explored four techniques adopted from the NATO COPD that can be used during ADM and MDMP to integrate existing doctrinal concepts and enable more effective planning. These techniques focused on four areas:

- Developing an operational approach with decision points and branch plans to enable flexibility during execution.
- Creating a task-and-effects matrix to enable the transition from conceptual to detailed planning.
- Increasing our emphasis on collaboration and developing “so what” and “therefore” conclusions during mission analysis to enable course of action development.
- Presenting the advantages and disadvantages of each CoA from the perspective of all WFF and subject-matter experts to enable a more holistic approach to CoA comparison.

Even if the recommended processes and tools are not included in future planning doctrine, leaders should consider using and adding them to their current planning standard operating procedures. All these techniques provide more options for planners to use during MDMP.

These techniques are only a small

Weight ¹	1	2	1	1	2	
Criteria ²	Simplicity	Maneuver	Fires	Civil control	Mass	Total
CoA						
CoA 1 ³	2	2 (4)	2	1	1 (2)	8 (11)
CoA 2 ³	1	1 (2)	1	2	2 (4)	7 (10)
Notes						
¹ The chief of staff (executive officer) may emphasize one or more criteria by assigning weights to them based on a determination of their relative importance. Higher weights correspond to emphasized or more important criteria.						
² Criteria are those approved by the commander during the mission-analysis brief.						
³ CoAs selected for wargaming having rankings assigned with regard to each criterion based on relative advantages and disadvantages of each CoA. For example, when compared for relative simplicity, CoA 2 is simpler than CoA 1 and is therefore ranked 1, with CoA 1 ranked 2.						

Table 4. Sample decision matrix. Most Army staffs use this matrix to quantitatively present the results of CoA comparison. It is the only technique specifically described in doctrine. (Adapted from Table 9-7, FM 6-0)

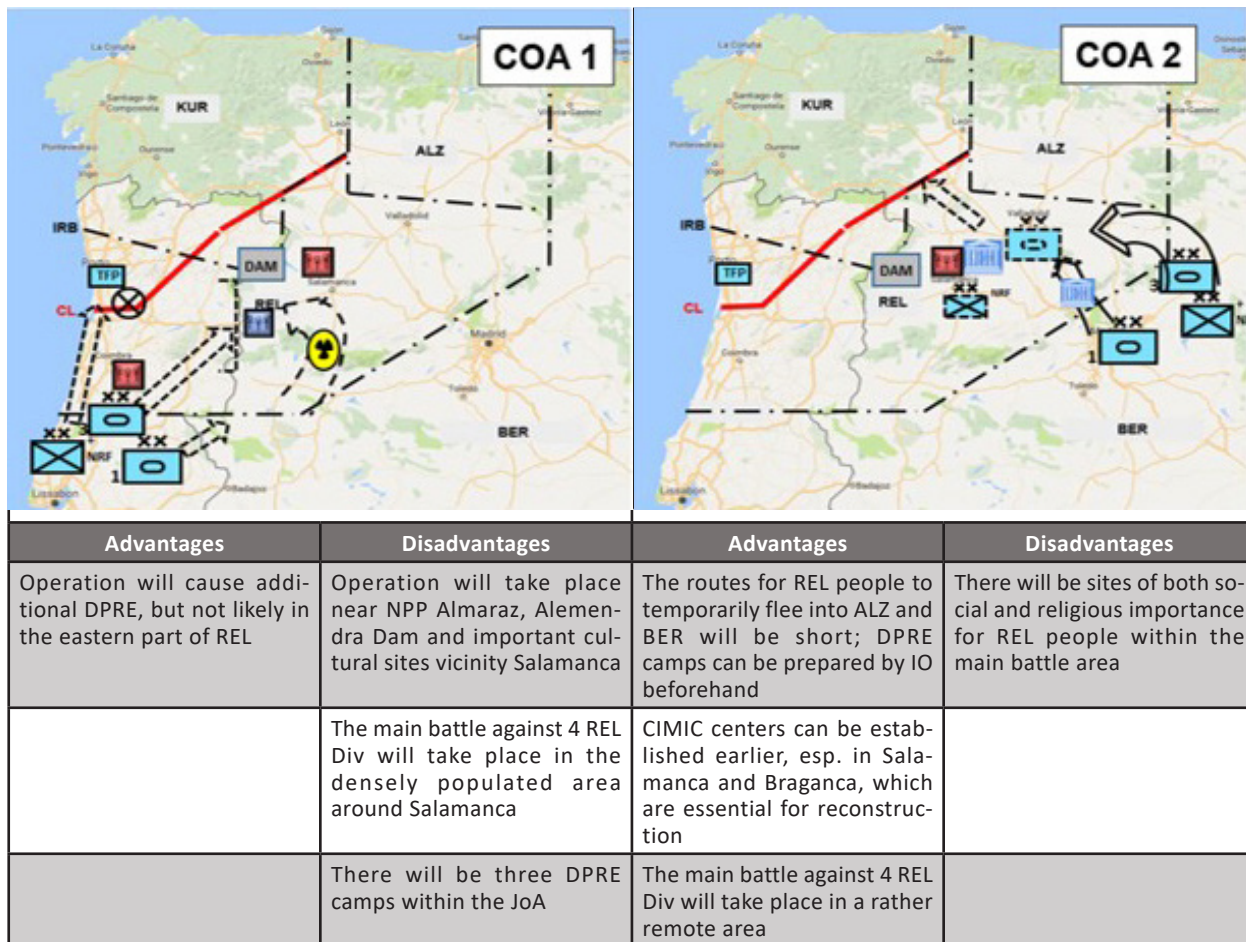


Figure 3. G-9's comparison of CoAs. Operation Determined Effort planners used a more qualitative assessment, including specific advantages and disadvantages as well as their recommended CoA. Each Wff lead presented based on their Wff, and then the lead planner presented an overall recommendation.

sample of the many things the U.S. Army can learn from foreign militaries. Although there is a tendency for some international organizations to adopt U.S.-centric techniques or for U.S. Army leaders to encourage others to adopt their techniques, U.S. leaders can learn a lot from other countries and organizations as well.

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Endnotes

¹ Gary M. Klein, "Doctrine: Our Professional Language and Observations from the Joint Readiness Training Center," *ARMOR*, April-June 2015.

² These methods are based on the authors' experience during Exercise Determined Effort, which was a combined planning exercise at the German Führungsakademie der Bundeswehr (FüAkBw). This exercise is the focal point of an annual student exchange between the FüAkBw and the U.S. Army's Command and General Staff Officer's Course (CGSOC). Exercise Determined Effort included officers from Canada, Estonia, France, Germany, Great Britain, Greece, Italy, the Netherlands, Norway, Poland, Sweden and the United States. The combined staff planned using the North Atlantic Treaty Organization's (NATO's) COPD as its foundation, with minor modifications from the German decision-making process. For more details on the exchange, read Josephine Ladner's Jan. 19, 2017, article in the *Leavenworth*

Lamp titled, “German Exchange Program Marks 50 Years.”

³ ATP 5-0.1, *Army Design Methodology*, Washington, DC: Government Printing Office, 2015.

⁴ The enemy CoA planners use to create the friendly CoA is one of the most significant assumptions during planning.

⁵ Other techniques for depicting decision points and branch plans during planning can be found in Gary M. Klein and Alan P. Hastings, “Decision-Support Planning and Tools: Planning to Support Decision Making,” *ARMOR*, April-June 2016.

⁶ Eisenhower Presidential Library, “Eisenhower Quotes,” Dwight D. Eisenhower Presidential Library, Museum and Boyhood Home, accessed April 30, 2017, https://www.eisenhower.archives.gov/all_about_ike/quotes.html.

⁷ ATP 5-0.1.

⁸ FüAkBw, “Arbeitshilfe: SOI COPG: Adaption of [COPD], Interim Version 3.0,” October 2016.

⁹ Ibid. The COPD refers to an “effects/actions matrix” and “effects matrix” interchangeably, but this article will use the term the Exercise Determined Effort staff used, which was “task and effects matrix.” The staff used this term because it includes other U.S. and German doctrinal terms that facilitate shared understanding.

ACRONYM QUICK-SCAN

ADM – Army design methodology
ATP – Army technical publication
CGSOC – Command and General Staff Officer’s Course
CoA – course of action
COPD – Comprehensive Operations Planning Directive
FM – field manual
FoM – freedom of maneuver
HHT – headquarters and headquarters troop
JMRC – Joint Multinational Readiness Center

JP – Joint publication
LoE – line of effort
LoO – line of operation
MCCC – Maneuver Captain’s Career Course
MDMP – military decision-making process
NATO – North Atlantic Treaty Organization
O/C/T – observer/coach/trainer
SOI – standing operating instructions
WfF – warfighting function

¹⁰ JP 5-0, published 2011, describes a generic nesting of endstates, objectives, effects and tasks on pages III-20 to III-22, but it does not describe developing specific linkages as the Exercise Determined Effort planners did.

¹¹ ATP 5-0.1.

¹² ATP 5-0.1.

¹³ FM 6-0, *Commander and Staff Organization and Operations*, Washington, DC: Government Printing Office, 2014.

¹⁴ FüAkBw, “Arbeitshilfe: SOI COPG: Adaption of [COPD], Interim Version 3.0.”

¹⁵ Ibid.

¹⁶ Factor analysis is similar to the

“three-column format” the British Army uses in its combat estimate as well. The three-column format requires the staff to analyze “why” and determine “so what” outputs for each factor.

¹⁷ FM 6-0.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ All CoAs must pass the screening criteria of suitable, feasible, acceptable, distinguishable and complete; but not all CoAs are going to be optimized to each WfF, which formed the basis for each staff section’s recommendation.

Maximizing the Benefits of Digital Ranges

by Samuel Epstein

A new armor crew walks into an after-action review (AAR) conducted by a recently promoted sergeant vehicle-crew evaluator (VCE) who just graduated from training. The tank commander, gunner, loader and driver eagerly wait to learn how well they engaged the presented targets during their Table VI crew gunnery qualification. They know they dropped one engagement but feel confident about the others.

Earlier that morning, contractors had appended Integrated Player Unit Recorders (IPURs) and thru-sight video (TSV) optical devices on their sights to capture their conversations, location, bus data, scanning techniques and targeting procedures.

The crew did not do as well as expected on this daytime run. They passed four of the five engagements, with 377 points and an ability to obtain Q1 status with a successful night event. They saw the engagements captured with TSV and field cameras and didn't disagree with any of the scores.

"I don't know," the vehicle commander (VC) said as he walked away with less confidence than he possessed 20 minutes earlier. "I still don't know why we missed two of the three targets on that final engagement."

How did this happen? The AAR occurred immediately after the table execution, involved all participants in the discussion and focused on training objectives and standards. Unfortunately, this crew never learned why they dropped the engagement, even with available answers, because:

- There was little to no leader presence or participation in the AAR (AAR fundamentals derive from **The Leader's Guide to After-Action Reviews**);
- Leaders and VCEs do not know how to use the instrumentation available on digital ranges;
- VCEs were not qualified on the

platform on which they give the AAR;

- Planners made a conscious decision not to employ the full array of feedback enablers; and
- The VCE by default was the AAR gunnery expert and facilitator rather than someone who supports the experienced facilitator and trainer (two levels up) with scoring and information retrieval.

The vignette reflects a real encounter observed during a 12-month post-fielding training-effectiveness analysis (PFTEA) of the Digital Range Training System (DRTS) that the Army's deputy chief of staff G-3/7 initiated. The crews and units participated in Gunnery Tables V/VI, IX and XI/XII in M1 Abrams tanks, M2/M3 Bradley Fighting Vehicles (BFVs), Stryker Infantry Carrier Vehicles and AH-64D Apache helicopters.

The Combined Arms Center-Training (CAC-T) Training Support Analysis and Integration Directorate (TSAID) conducted the PFTEA, working in unison with U.S. Army Training and Doctrine Command (TRADOC) Capability Manager (TCM)-Ranges and Program

Executive Office for Simulation, Training and Instrumentation (PEO-STRI). The team assessed the effectiveness of DRTS-equipped ranges "to determine whether units achieve desired readiness levels with or without DRTS" and to "determine optimal management options." The team coordinated all data-collection efforts with U.S. Army Forces Command and the Army National Guard Bureau.

TSAID used surveys, observations and discussions with leaders and planners during site visits for its analysis. It collected responses from 739 Active Component and Army National Guard Soldiers (privates through lieutenant colonels) assigned to nine units across four installations using digital and non-digital ranges.

Based on the PFTEA results, CAC-T started incorporating recommended programmatic changes to improve DRTS. PEO-STRI testing is underway on new sights and equipment to improve the human interface. However, only the chain of command can implement the necessary steps to maximize train-

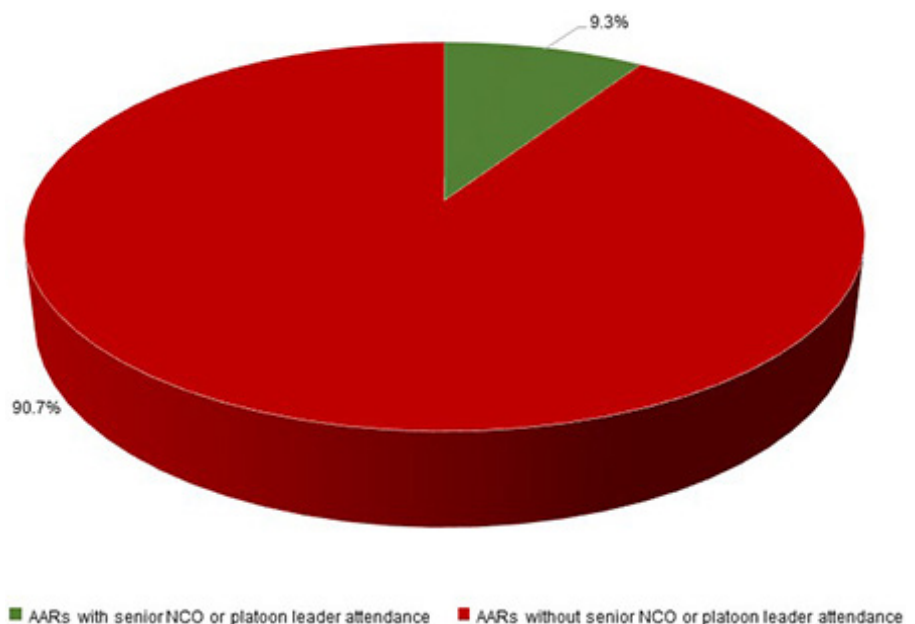


Figure 1. Observed senior NCO or platoon-leader attendance at crew-level qualification AARs during one site visit.

ing effectiveness on the ranges.

Step 1: leader presence at AARs

Throughout the PFTEA, analysts noted little to no leader presence or participation at armored brigade combat team (ABCT) crew-level AARs. For example, during two days of crew-level Table VI qualification events, on two ranges, analysts attended daylight AARs for two tank companies and 30 Bradley crews. A platoon leader, master gunner or senior noncommissioned officer (NCO) (staff sergeant or above not a member of the vehicle crew) attended just five AARs (Figure 1). Two of those five AARs had external senior leadership in the audience, and two had platoon leaders as the crew commander. Enlisted VCs benefited from senior mentorship for only one of the AARs.

Other ranges and installations lacked leadership during ABCT crew-level AARs. For example, during Table V/VI gunneries on the non-instrumented multi-purpose range complex, the battalion command sergeant major attended one AAR. During two consecutive days of observing daylight Table VI events, the analyst did not see the company commander or first sergeant at any AAR, nor observe platoon sergeants or platoon leaders regularly attend crew debriefs.

Because leaders abrogated their training responsibilities, VCEs conducted AARs and served as the primary trainers during qualification training. While enthusiastically conducting their duties, some VCEs do not have the background, experience and/or vehicle

expertise to effectively scrutinize crew interactions and dissect gunnery techniques. Current directives do not uniformly require VCEs to hold qualifications on the evaluated platform or as a vehicle commander. The VCE's mostly platform-neutral instruction emphasized scoring vice targeting and crew coordination.

Leaders cannot forfeit their duties to VCEs. They provide experience and expertise and should team with VCEs to explore areas of improvement based upon an inherent understanding of the crew's strengths while simultaneously gaining insight on possible unit-wide training shortfalls. During the PFTEA's observations, leaders – not the VCE or crew – initiated almost every instance of positive AAR feedback and real learning.

Step 2: know the equipment

Learning how to use the ability available through the DRTS instrumentation to provide “ground truth” rapidly allows AAR facilitators to leverage those capabilities to enhance feedback sessions.

Digital (i.e., “instrumented”) and non-digital ranges provide comparable maneuvering area and train similar echelons (Table 1). However, digital ranges also collect Global Positioning System (GPS) information for the vehicle and deliver live TSV (including scanning sectors); internal and external audio communications; and internal bus information (vehicle-dependent) through an integrated network (Figure 2).¹ This immediately enables the AAR's facilitator to establish the

cause-and-effect of crew actions and allows the facilitator and the crew to move rapidly forward to the learning necessary to improve crew performance.

Between four and 12 field cameras (depending on the installation and range) provide color and thermal images that operators may configure to automatically slew to the targets in each engagement upon exposure. DRTS incorporates Aerial Weapon Scoring System (AWSS) (on the Digital Air-Ground Integration Range) or portable AWSS (other digital ranges) for aviation units. Leaders may request information on a DVD or upload the results to a hard drive for review back in the command area. The ability to reuse AAR products and high-quality video allows leaders to leverage these products to assess crew improvement and provide examples of exceptional performance, or provide techniques and procedures of highly trained crew to crews that may not yet be at that level.

DRTS' scenario-development tool (SDT) provides a stand-alone software package that guides master gunners through preparing a targeting plan that meets the commander's intent. SDT, normally (but not necessarily) located at the Range Control Safety Office, allows personnel to create and export a scenario file without physically visiting the range. This tool allows commanders and their master gunners to introduce operational variables and conditions to challenge crews.

However, some said the instrumentation simply took too long to install. During timed installations, contractors required less than 20 minutes to

RANGE FACILITY		Non-automated	Automated	Instrumented	Team / section / squad	Platoon	Company	Mounted	Unstabilized	Stabilized	Aviation	Air defense	Unmanned aircraft system	Indirect
DIGITAL RANGES	Battle Area Complex (BAX)		X	X	X	X	X	X	X	X	X	X	X	X
	Digital Air Ground Integration Range (DAGIR)		X	X	X	X	X	X	X	X	X	X	X	X
	Digital Multipurpose Range Complex (DMPRC)		X	X	X	X	X	X	X	X	X	X	X	X
	Digital Multipurpose Training Range (DMPTR)		X	X	X			X	X	X	X	X	X	X
NON-DIGITAL RANGES	Automated Multipurpose Range Complex-Heavy (MPRC-H)		X		X	X	X	X	X	X	X	X	X	X
	Automated Multipurpose Training Range (MPTR)		X		X			X	X	X	X	X	X	X
	Scout/Recce Gunnery Complex (SRGC)		X		X			X	X	X		X	X	

Table 1. Range-capabilities matrix (from TC 25-8, Training Ranges, July 22, 2016).

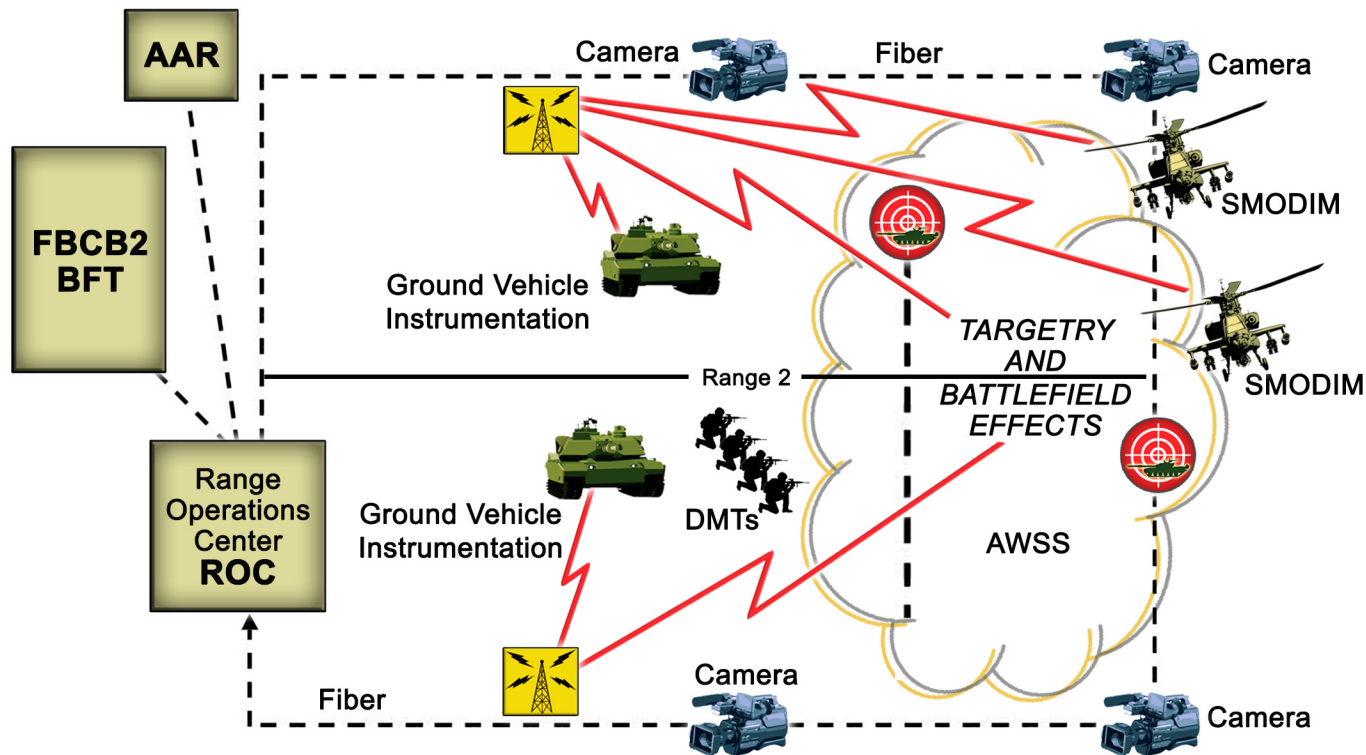


Figure 2. Typical layout of an Instrumented Range (IR)/DRTS.

append DRTS equipment on vehicles. Crews and contractors overwhelmingly reported less than one hour to mount IPUR network gear. For a very small amount of time invested, the digitally supported AAR with an experienced trainer/facilitator can dramatically improve training effectiveness.

Leaders may also incorporate the Dismounted Tracker (DMT), which provides real-time GPS position location of dismounts throughout the digital range. Facilitators may subsequently use DMT playback and camera information during AARs.

Depending on the vehicle, DRTS records the targeted and true range to an objective based on GPS. With DRTS, the VCE begins assembling the AAR in the tower during gunnery events the unit plans. Master gunners, working with commanders, continue to assess execution of the gunnery tables according to field manuals and training circulars (TCs).

During engagements, the VCE may mark specific segments for review or prepare the chart for areas of interest. This allows the VCE to assist a trained and experienced AAR trainer/facilitator to focus the AAR on specific areas for improvement. Again, users on a

digital range may request DRTS contractor operators to burn AARs to DVDs or download them to a unit-provided hard drive for later review (Figure 3).

DRTS allows tower operators, master gunners, unit leadership and VCEs to see targets as sighted by the crew during live-fire events. Not only does this afford opportunities for more comprehensive AARs, senior leaders also noted it provided more safety. DRTS also offers line alerts, useable as phase lines in an operations order, which trigger targets to expose during a step or engagement. Force XXI Battle Command Brigade and Below (FBCB2) tactical-operations center kits allow the user to create and transmit Blue Force Tracker (BFT) messages to meet the digital requirements of gunnery tables. This enables the complex training environments that our maneuver force requires to fight and win in a complex world.

TSV, coupled with information from the IPUR network, presents a wealth of information for crew, team and platoon-level AARs. With appropriate leadership participation and properly experienced and trained VCEs, DRTS provides multiple methods to positively reinforce proper techniques and

guide the crew to improve proficiency where needed. In other words, it offers video, audio, spatial and graphical representations for an AAR's "sustains" and "improves" (Figure 4).²

Step 3: employ all feedback enablers

DRTS provides the ability to conduct an AAR immediately as crews dismount from their vehicles and report for their evaluation. Responses to the statement that the AAR "proved worth the wait" did not differ significantly between the digital and non-digital ranges (Figure 5).

On a practical level, DRTS offers insights not available on standard, non-instrumented ranges. For instance, during one site visit, one sergeant first class said during a Table V AAR preview before the VC's entrance, "He needs to see this to understand why he's not hitting it." On the following day on a different range, a VCE asked a crewmember while engaging the target, "Why didn't you narrow the field of vision?"

When employed by engaged leadership, supplemented with an experienced and qualified VCE, DRTS provides an array of capabilities not

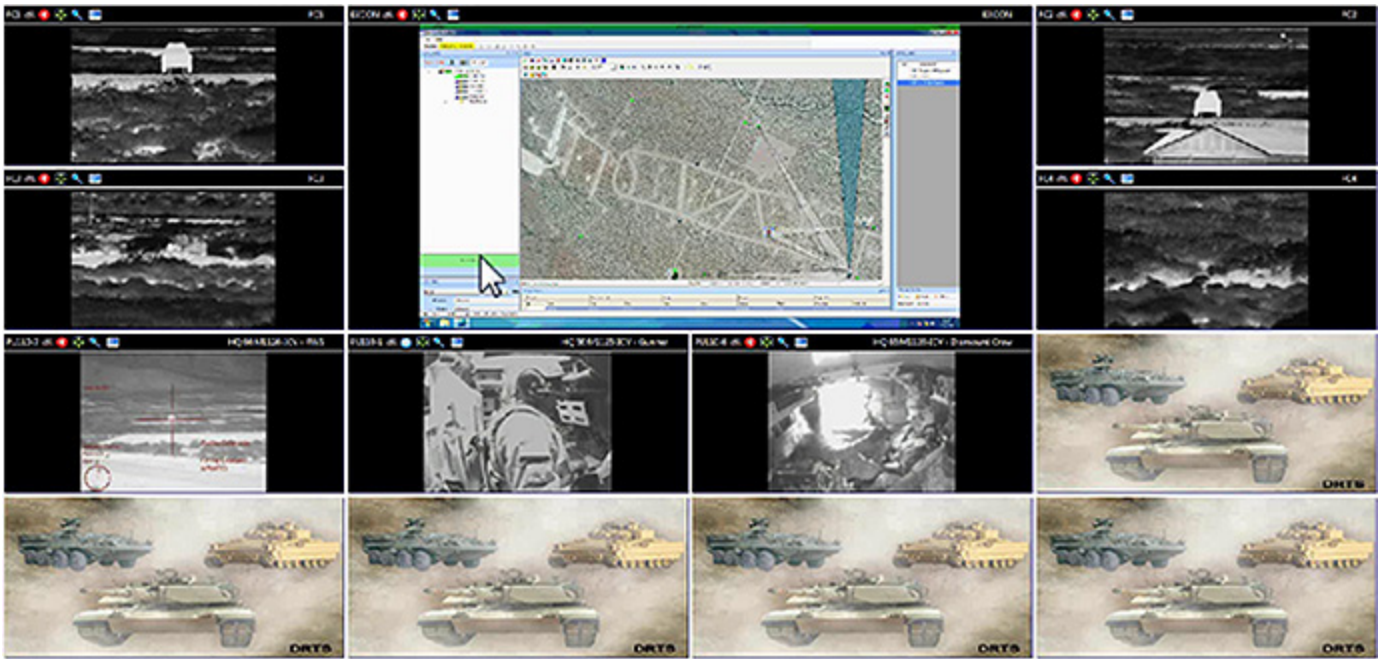


Figure 3. A view of the AAR take-home package.

available on a comparable non-digital range. The ability to incorporate easily audio, video, targeting and positioning information to provide graphic insights – without requiring extra time to prepare the AAR – allows crews to use multiple learning styles of self-identified methods of improvements and offers the potential to advance gunnery outcomes.

ABCT AARs primarily used instrumentation and TSV as an instant replay during crew-level (Table V/VI) events the PFTEA observed, not to correct gunnery procedures. Quantifying an example from one site visit, over a four-day period on two ranges with different vehicles and units, only three AARs

witnessed by one analyst used TSV to correct gunnery techniques (although one AAR used it on multiple occasions).

Several months later, with a different unit, a VCE used a portion of information available from the TSV to review gunnery procedures. Unfortunately, other important aspects of the Table VI event, including leaving the sight in boresight mode, only became obvious to the crew upon interjection by the brigade master gunner, present because of a visit by senior leaders.

Leaders can schedule digital multi-purpose range complexes for 24-hour operations for up to 10 consecutive days and DMPTRs for 16-hour operations

for up to 10 consecutive days. While unhesitatingly using the DRTS training areas, no ABCT elected to append instrumentation on all their vehicles for every Table XII event. Company first sergeants appeared unaware of the ability to track dismounted Soldiers via the DMT.

During the hotwash conducted following one Table XII, the company commander noted the BFV along the right flank failed to engage multiple targets. Had the unit used TSV and a geographic display of scanning techniques in the AAR, the evaluation would likely contain more definitive information as to the number of targets not engaged and help assess why the crew did not shoot at the targets during their lane transit. The crew did not use any audio or video feedback during their hotwash, nor did they capture it for future replay in a take-home package.

At a separate Table XII event, platoons scored primarily in the 60 percent to 70 percent range (with one platoon scoring in mid-80s). The lead evaluator (an infantry first lieutenant) and the VCE (an Armor sergeant) did not know that DRTS could show the Armor platoon's scanning procedures and each combat vehicle's sector. Only two vehicles included TSV and IPURs.



Figure 4. DMPTR AAR.

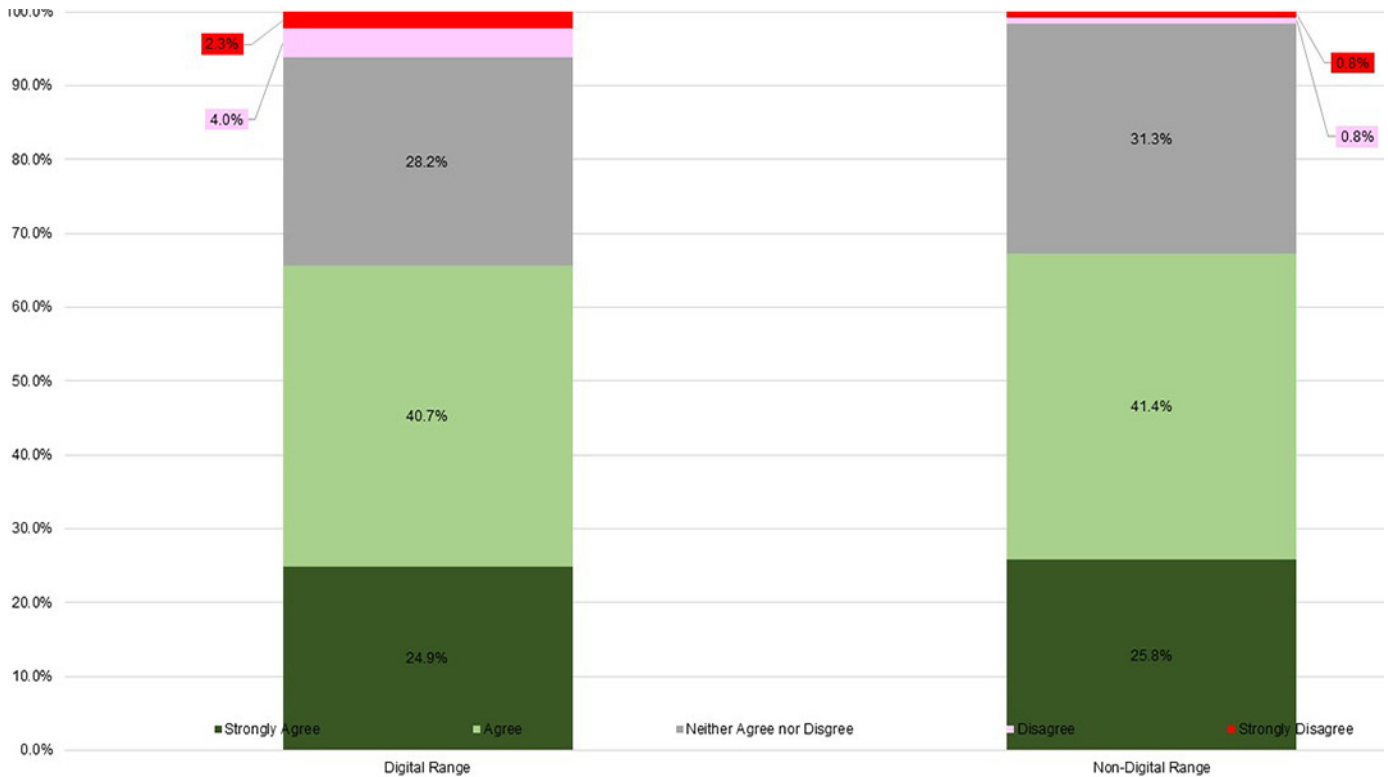


Figure 5. Leadership response to the AAR proved “worth the wait.”

Step 4: leadership offers gunnery expertise with VCE support

During the PFTEA, analysts observed that AH-64D crews worked in conjunction with the RQ-7 Shadow unmanned aerial vehicle and dismounted Soldiers during training events on a digital range. With master gunners, battalion staff and company commanders attending or delivering the AH-64D AARs,

crews benefitted from multiple levels of experience. They also routinely used the advanced feedback that instrumentation provides.

In both surveys and conversations, AH-64D crews strongly favored digital ranges and the AAR capabilities. During company events, AH-64D crews benefitted from visualizing sensor orientation, crew audio and video, multiple target-effect data and aircraft

location, and target-effect data. Not surprisingly, AH-64D aviators expressed a strong preference for the digital range (Figure 6).

Conversely, ABCT crews expressed ambivalence toward digital ranges. The Army’s digital ranges provide tanks, Bradleys and Strykers the same level of feedback available to aviators. While offering the same technical infrastructure, ABCTs failed to use the demonstrably capable feedback tools to assess performance.

Way ahead

The PFTEA identified aspects of program management that may expand the availability of training hours on digital ranges. However, only commanders can take the most effective actions to improve live-training events. Steps within the commander’s purview include:

- Consider the VCE’s qualifications. If not satisfied with the VCE’s level of experience, express your concern to the division master gunner and S-3.
- Conversely, only assign NCOs to VCE training that already hold VC qualifications in a crew-level gunnery event. In other words, assign a VCE for training and observation with the

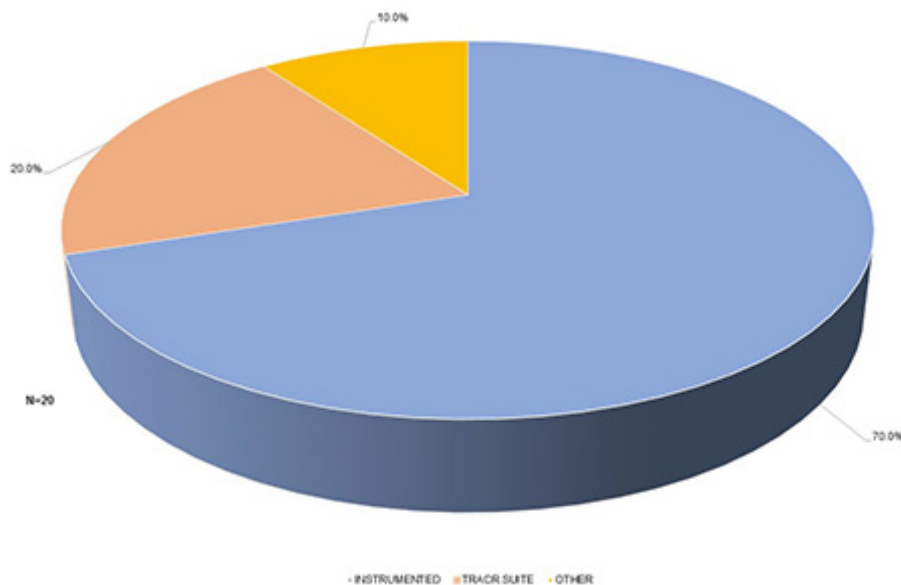


Figure 6. AH-64D aviator range preferences.

same skills and experience sought for AARs.

- Learn what DRTS provides and how to incorporate the information during AARs while planning the gunnery event. Discovering the capabilities when arriving on the range will not afford enough time to instruct VCEs and unit leadership how to maximize DRTS.
- Equip dismounted Soldiers with DMT to graphically display approach patterns.
- Plan to use the AAR facilities available on DRTS ranges. DRTS operators provide instrumented inputs to VCEs with enough lead time as to allow training to continue unabated. During observations, leaders did not report any variance in the time necessary to receive the AAR with the enhanced feedback DRTS provides.
- Inquire into expanding time on DRTS ranges. Though nominally available for five days a week, installations can extend the range hours – without adding overtime – with advanced notification.

Most importantly, **leaders must engage their crews in AARs**. Unit leadership, whether a senior NCO or someone external to the platoon or company, improves the feedback crews receive. Training is only as effective as the feedback the events receive. Technology cannot eliminate the need for a leader's participation, nor can it mitigate the lack of leader involvement.

Digital ranges offer incontrovertible and quantitative feedback to ground combat and aviation crews not available on their non-instrumented counterparts. Through use of sight optics, GPS location data and sensor feedback, digital ranges offer expanded awareness of the crew's gunnery event.

One year of observations only confirms that engaged leadership two levels up remains the most important aspect of any training event.

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Endnotes

¹ Product manager, digitized training and TCM-Ranges, IR/DRTS concept of operations, Feb. 1, 2016.

² TSAID, July 26, 2016.

ACRONYM QUICK-SCAN

AAR – after-action review
ABCT – armor brigade combat team
AWSS – Aerial Weapon Scoring System
BFT – Blue Force Tracker
BFV – Bradley Fighting Vehicle
CAC-T – Combined Arms Center-Training
DMPTR – Digital Multipurpose Training Range
DMT – Dismounted Tracker
DRTS – Digital Range Training System
FBCB2 – Force XXI Battle Command Brigade and Below
GPS – Global Positioning System
IPUR – Integrated Player Unit Recorder
IR – instrumented range
NCO – noncommissioned officer
PEO-STRI – Program Executive Office for Simulation, Training and Instrumentation
PFTEA – post-fielding training-effectiveness analysis
SDT – scenario-development tool
TC – training circular
TCM – TRADOC capability manager
TRADOC – (U.S. Army) Training and Doctrine Command
TSAID – Training Support Analysis and Integration Directorate
TSV – thru-sight video
VC – vehicle commander
VCE – vehicle-crew evaluator

The Rehearsal Is the Thing!

by CPT Luke C. Bowers

The combined-arms rehearsal (CAR) had just completed. The battalion executive officer stood on the terrain model, satisfied with the thorough execution; the staff had, after all, rehearsed it many times before the rest of the battalion leaders arrived. The staff and commanders had briefed their parts well; all the actions occurred just as developed in the wargame and the rehearsal to the rehearsal.

In closing, the executive officer conducted one final survey of the team: "Anyone have any final questions?" All the attendees were quiet, their heads swaying left and right indicating they did not. The executive officer, again satisfied, concluded the rehearsal and dismissed the leaders.

Immediately, the audience began to move about seeking each other and discussing the operations. As the executive officer walked about, he heard key leaders requesting clarification of

tactical triggers and possible decision points. Platoon leaders were asking about signals for shifting fires; a company fire-support officer (FSO) asked when his company would receive Army attack aviation; the reserve didn't know where the passage lane and link-up point were in the decisive operation's area of operation.

How could this be? The team just conducted a CAR with the leaders two levels down ... right?

The rehearsal is the thing. Just like Shakespeare's character Hamlet used a play to reveal the king's conscience, a good rehearsal reveals our conceptual and detailed understanding of an operation. However, a good rehearsal, unlike a play, requires active participation, not simple observation. Army leaders know that rehearsals are important. We even **want** to do rehearsals; we do them intuitively, especially if we are trying to save face. We do it with less obvious events: when we have a significant presentation to give, during training for a hands-on

examination or when we deliver bad news. The phenomena of units rehearsing how they will conduct a rehearsal (rehearsal to the rehearsal) further exemplifies its value. Why, then, are our rehearsals for tactical operations often ineffective?

My purpose with this article is twofold: I'd like leaders to appreciate rehearsals and see their true utility, and I want to share a technique that engages all participants and promotes shared understanding.

Regarding the first purpose, Field Manual (FM) 6-0, **Commander and Staff Organizations and Operations**, plainly states that rehearsals allow leaders to practice key aspects of their operations and orient themselves to the environment and other units before executing the operation.¹ The same publication also refers to rehearsal as a tool to ensure staff and subordinates understand



the commander's intent and concept of the operation. The rehearsal is a powerful construct; it is not a terrible obligation to conduct before an operation. Rather, it is a practice to assess and improve our understanding of the operation. Creating shared understanding and clear intent are among the guiding principles of the mission-command philosophy, according to Army Doctrinal Reference Publication (ADRP) 6-0, **Mission Command**.²

As to the second purpose, the frequency modulation (FM) "speak" rehearsal, or speaking with radio etiquette, is an excellent technique for rehearsing an operation, especially a CAR. This article will demonstrate the technique's application, but first, we need to examine rehearsals in a broad sense.

What happens, what shouldn't happen

Rehearsals of any type – key leader, full dress, etc. – often fail to be effective in enabling shared understanding because leaders drive toward a friction-free presentation as the desired outcome. Rehearsal participants usually meet multiple times to ensure the lines and sequencing of critical, or "friction," points are well understood before conducting the actual rehearsal.

This practice is in direct opposition to why we rehearse for combat operations. In fact, we should minimize our preparation for the role as "actors" but demonstrate our understanding and agility of the operation's plan through good unscripted execution.

This invites the question of who are the right persons to participate in the rehearsal. Rehearsals are commonly dominated by staff and commanders, but that isn't the right group. Understanding the plan is implicit for the staff – they wrote it. The commanders equally understand the plan – they've studied it deeply to build their own. These participants, the commanders and staff, are not the group who needs to demonstrate their understanding or how to adapt to uncertainty within the commander's intent of that plan. Leaders two levels down, those achieving the assigned tactical task, are the members who need to rehearse.

I've witnessed many rehearsals, from

company to brigade level, led and dominated by those who planned (and won't execute) the operation. I've seen the staff wax eloquent on the terrain board showing their complete comprehension of the operation. Simultaneously, I've recognized that platoon leaders and other leaders fail to understand the relationship between their task and how it enables and complements adjacent units.

Commanders need to get the staff and the planners out of the spotlight during the rehearsal. It's a danger that leaders will roleplay the product of the staff's course-of-action (CoA) analysis (wargame) and prove it correct instead of demonstrating understanding where initiative will occur. We should want to see how the platoon leader or squad leader will react – and hopefully operate within the commander's intent – when presented with an unexpected event. We should see the leader employ tactics based on knowledge of terrain and enemy – consistent with intent or leverage-enablers available – because he understands what needs to be accomplished despite the plan.

When we see that happen, we've seen shared understanding. Then the rehearsal has performed the task and has been the tool we wanted.

Best practices, general comments

Before discussing the "FM speak" technique, it's worthwhile to discuss a few best practices, tips and ideas for rehearsals in general.

Key-leader and the FM-technique rehearsals require large terrain models. How large? Large enough to allow all the rehearsal participants (again, two levels down) to occupy their positions on the represented terrain at the same time for the event or phase rehearsed. The terrain model needs to be this large because we want the participants to see where they are in relation to each other.

A forward-passage-of-lines, for example, can be executed according to a unit standard operating procedure (SOP); however, one can appreciate the value of allowing leaders who will actually meet on the ground and execute the task to meet each other and

see relative positioning. The planners will only see unit icons conducting a tactical-enabling task during CoA development, but the executors will see each other and confirm the signals and procedural details – increasing understanding.

The terrain model should show relief. Building a large two-dimensional map with graphic control measures (GCM) is easy, but integrating terrain relief shows an understanding of the terrain's effects to maneuver. This will be valuable for creating spatial awareness when injecting uncertainty and task reorganizing.

The terrain model should be complete and populated with GCMs and enemy icons (size, composition or combat slant). As a rule of thumb, if someone will brief a threat, GCM, unit position and so on, then that briefer should be responsible for generating that representation on the terrain model.

For example, the FSO should create the markers signifying fire-support control measures like coordinated fires line, no-fire areas and targets instead of a tactical-operations center radio-telephone operator or driver. That FSO will need to brief, so he/she should build and place that piece on the model to ensure it's present in the correct position, and includes details relevant to the rehearsal such as target number/trigger/location/observer/delivery system/attack guidance/communication, or TTLODAC, an acronym for organization of indirect-fires planning considerations.

Similarly, the S-2 or assistant S-2 should build the enemy composition and array according to the disposition from the mission or CoA analysis.

Whenever possible, the battalion-and-above current operations (CUOPS) integrated cells should drive the rehearsal. The rationale is the same as having subordinates two levels down brief during the rehearsal instead of the staff or planners. Once future operations (FUOPS) has created and published the order, it should transition to the CUOPS team for execution and assessment. The rehearsal is the ideal practice to demonstrate that the transition from FUOPS has occurred and a thorough knowledge of the operation's

details are understood by the team that will “fight the plan.”

Also, the CUOPS team should drive the rehearsal to better exercise battle-tracking and to recognize decision points and contingencies from the plan while rehearsing. Their participation will increase understanding and enable better recognition of opportunities for initiative or recommending to stay the course during the operation.

Good rehearsals will exercise the plan and uncertainty in the operation’s execution. Rehearsals should include elements of uncertainty that are not scripted, on the execution check list or known by participants. Introducing uncertainty and ambiguity in the rehearsal process enables leaders to see how their subordinates actually react and adhere to the commander’s intent with creativity and adaptability – applying mission command.

Leaders can create realistic uncertainty by presenting various elements different from the enemy CoA – for example, an element templated in the battlezone fighting far forward in the disruption zone. The rehearsal lead can significantly reduce the combat power available to a leader by changing the forces available to him during a phase. A leader could create a surprise meeting engagement or contact with indirect fires to force an assessment from the subordinate leader to choose between maintaining the CoA and recommending a task reorganization.

Another option is to manipulate the enablers and attachments available to a unit. For example, take a company/team breach force organized with engineers, then introduce a requirement to task-reorganize the engineer attachment, thus requiring the company/team to reduce an obstacle within its organic assets. This can be applied in a similar manner with enablers such as aviation and priority of support.

Train, certify, rehearse

We need to make our rehearsals an ingrained part of the organization. FM 6-0 states that effective and efficient units habitually rehearse during training. The rehearsal, because it is an important tool to exercise mission command, should be trained as well.

We should train to rehearse before we conduct collective-training exercises. We need to teach leaders how we want rehearsals conducted before we require and employ them as part of the operations process. Units should include the introduction and instruction of their rehearsal SOPs to new leaders as part of certifying those leaders for each level they lead.

We train other collective tasks by ensuring proficiency in supporting tasks at the lower echelon first. Training and certifying leaders becomes more important with a technique like “FM speak” or unscripted rehearsals because the technique is less familiar and requires more thinking in the moment.

‘FM style’ or ‘FM speak’

The “FM speak” technique is not a type or method of rehearsal listed in FM 6-0; however, it would probably position between “terrain model” and “key leader” on the rehearsal-type continuum. The “FM speak” concept places participants on a terrain model where they exercise the unit’s scheme of maneuver using only call signs and radio-protocol etiquette to communicate their actions to each other. This technique closely replicates the advantages of a full-dress rehearsal without the time and operational-security risks associated with it.

The constraint of using radio procedures only – assuming brief transmissions – prohibits the participants from misrepresenting their understanding of the actions required of them in time and space. In other words, if you don’t know the plan, you can’t fake it by just speaking your lines from a script.

The “FM speak” rehearsal concept is not new; many leaders and units employ the technique in various forms and methods. My former leaders taught me the technique, having learned it from other mentors during their careers.³

I’ve seen units attempt to employ the technique but struggle to get a satisfying repetition at different levels. I believe the main challenge is simply getting rehearsal started. Practitioners new to the technique find themselves awkwardly stalled in the beginning because they don’t know how to start the

rehearsal with a radio call. Time spent in staff briefings or training meetings have conditioned us to open with wordy introductions, agendas and read charts and analysis; speak in numerical and alphabetical order; and wait for final comments. In a sense, we trained ourselves to conduct our rehearsals like we brief orders and command and staff.

Units can overcome this with a very brief introduction from the S-2 to present the enemy disposition. To begin, have leaders “join the net” with call signs as roll call and report their combat slant. The CUOPS can initiate a net call with leaders reporting combat power and front-line traces. For example: *“Dealer X-Ray, this is Demon 6. Set at Attack Position Dog, slant 10/4/0/3. Over.”*

The S-2 can set the stage with an operations and intelligence update. During this update, the S-2 speaks in radio etiquette to describe enemy forces’ disposition and actions they’re conducting, per his estimate. The scout-platoon leader can also help develop the rehearsal’s setting by providing reports. For example:

“Dealer X-Ray, this Recon 16. Over.”

“Recon 16, this is Dealer X-Ray. Over.”

“Dealer X-Ray, this is Recon 16. Observing four BRDMs in NAI 2002 moving east to west. Observation answers PIR 3. I recommend ... Over.”

With this single transmission, the unit can establish an action that allows the operation to develop. The S-2 can provide an assessment in “FM speak,” and the line companies can respond to this stimulation with an action on the terrain model according to the scheme of maneuver. Once a unit begins the simulated FM traffic, leaders quickly become comfortable responding to their cues or triggers, and the rehearsal becomes interactive. This is when the rehearsal becomes engaging and revealing, thus building shared understanding.

To appreciate the FM technique’s value in creating shared understanding, consider a complicated event such as a combined-arms breach. Imagine the support force (Red Platoon) set in a support-by-fire (SBF) position,

suppressing an enemy to enable the breach force (White Platoon) to reduce an obstacle and pass the assault force (Blue Platoon) to an objective. Participants would sound something like this:

“Demon 6, this Red 1. Slant 4 with 2/4/0 enemy BDA. Recommend initiation of the breach. Over.”

“Red 1, this is Demon 6. Breach criteria is met with that BDA. Break. White 1, attack along DoA Sword and execute the reduction. Over.”

“Demon 6, this is White 1. Roger. Over.”

“Red 1, this is White 1. Executing PL California. Over.”

“White 1, this is Red 1. Acknowledge PL California. Shifting from TRPs 1-4 to 3-4. Over.”

“Demon 6, this is White 1. Identified the lead edge of the obstacle. Local SBF suppressing between TRPs 2-4. Over.”

“Dealer 95, this is Demon 95. Cease fire on Target AB1005. Fire Target AB10101, smoke. Over.”

“Demon 95, this is Dealer 95. Acknowledge ceasefire on Target AB1005 and initiate obscuration with Target AB10101.”

“Demon 6, this is Blue 1. Initiating movement from assault position to execute the passage lane. Over.”

Here the commander, Demon 6, recognizes that the platoon leader, Blue 1, has reacted to an incorrect tactical trigger per his operations order. The commander does not disrupt the rehearsal to correct the platoon leader out of turn; rather, he uses FM procedures:

“Blue 1, this is Demon 6. Limit your advance on DoA Sword to PL Oregon. Maintain weapon control status-hold and do not resume movement until White 1 reports PL New Mexico. Over.”

The “FM speak” rehearsal

demonstrated that Blue 1 didn’t fully understand the conditions that triggered his maneuver from the assault position to the passage lane through the obstacle.

The technique is applicable at nearly all echelons and type of tactical operations. Once a team understands how to conduct FM speak, the rehearsals become fluid and effective for all participants. Commanders see how their leaders understand the plan, react to uncertainty and adapt to meet their intent.

The “FM speak” rehearsal is an excellent tool for leaders and possibly one of the best for creating shared understanding by bring mission orders and commander’s intent together during the prepare phase of the operations process. Rehearsing with this technique will challenge warfighters, staffs and commanders to think critically and creatively vs. reading lines on a script. Rehearsing with uncertainty replicates the truest condition of combat operations and prepares leaders to fight the enemy and not the plan.

The FM technique, or simply rehearsing with an outline only, requires leaders to think and decide – that is more valuable to rehearse than a simple script. Ultimately, the rehearsal is the thing – the thing we must do well to prepare us to apply mission command.

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ACRONYM QUICK-SCAN

ADRP – Army doctrinal reference publication
BDA – battle-damage assessment
BRDM -- *Boyevaya Razvedyvatelnaya Dozornaya Mashina*, a Russian amphibious armored patrol car
CAR – combined-arms rehearsal
CoA – course of action
CUOPS – current operations
DoA – direction of attack
FM – field manual
FM – frequency modulation
FUOPS – future operations
GCM – graphic control measure
GPO – Government Printing Office
FSO – fire-support officer
MCCC – Maneuver Captain’s Career Course
NAI – named area of interest
PIR – priority intelligence requirement
PL – phase line
SBF – support-by-fire
SOP – standard operating procedures
TRP – target-reference point

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Endnotes

¹ FM 6-0, **Commander and Staff Organizations and Operations**, Washington, DC: Government Printing Office (GPO), May 2014.

² ADRP 6-0, **Mission Command**, Washington, DC: GPO, May 17, 2012.

³ BG Omar Jones, my former brigade combat team commander, learned the “FM speak” technique from former commanders during his career. Email correspondence dated April 10, 2017.

Make Reporting Routine Again

by CPT Nicolas J. Fiore

Incorporate reporting into your gunnery training program and realize improved performance throughout collective training and external evaluations (exevals). Without good reporting, gunnery is little more than mounted marksmanship practice. Fortunately, units can easily and doctrinally combine standard fire commands with common reports. Try these ideas to use crew gunnery as an opportunity to ingrain reporting into crew muscle memory and train tactical mission-command nodes in preparation for collective training, Tier-1 exevals and deployment.

Idea in brief

Many units experience difficulty getting timely and accurate reports during force-on-force (FoF) field-training exercises.¹ One possible explanation is that reporting is rarely taught in foundational training, so crews and leaders do not always incorporate reporting into the muscle memory they rely on when they are in contact.

Gunnery is the foundational training for Armor and Cavalry units. Although gunnery trains crews to operate their weapons platforms, it does not prepare crewmen well for collective training and combined-arms maneuver. Instead of waiting for collective training to teach reporting, get a head start and build good habits by requiring contact and situation reports during crew gunnery. These fundamental reports are critical for maintaining shared situational understanding, synchronizing individual engagements with the collective fight and allowing command posts (CPs) to maneuver more assets to assist troops in contact.

Incorporating reporting into crew gunnery also gives CPs early practice so they gain proficiency before battalion and brigade command-post exercises (CPXs) and simulations.

Finally, with the advent of Objective-T reporting and Integrated Weapons Training Strategy (IWTS), units need to start training mission-command systems earlier in the training cycle. Crew

gunnery is often the first opportunity to train CPs.

Idea in practice

Evaluate and score reporting within the existing detect-identify-decide-engage-assess (DIDEA)-based nine-step standard fire-command structure. After the “termination” step in the fire command, vehicle commanders must send a correct (according to standard operating procedure (SOP)) contact or situation report to their platoon leader or company CP or sustain a crew cut. Including reporting in the crew’s gunnery score is likely to cause resistance initially, but it is doctrinally correct, easy to evaluate and will reward your unit throughout collective training and exevals as the unit prepares to deploy, fight and win in the current operational environment.

Battalion commanders should direct their master gunners to incorporate reporting into the engagement scoring criteria because crews will perform to the grading standards. For example, failing to report in accordance with the battalion SOP can be assessed as a 10-point crew cut. Master gunners must then train the reporting SOP during gunnery-skills testing (GST), vehicle-crew evaluator (VCE) academy and in the gunnery simulator so all crew members and VCEs are comfortable with the reports.

Executive officers should use the reports generated in crew, section and platoon gunnery to formalize SOPs and tracking tools for their CPs. Use the same DIDEA process to evaluate these mission-command processes and aggregate CPs to a battalion CPX to load-test communications systems.

S-3s should plan these mission-command exercises into the gun-line so that systems can be evaluated months before the first battalion FoF field problem and to integrate combined-arms teammates from across the brigade whenever possible.

Move beyond mounted marksmanship

Mounted marksmanship, also known

as crew gunnery, has been the foundation of mechanized training in the U.S. Army for the 100 years since tanks and armored cars were first used in battle during World War I. Gunnery is a logical outgrowth of dismounted marksmanship training, but it is not the only measure of individual and crew tactical proficiency. For example, Russian armored competitions focus on mobility and tactical maneuver.²

Also, U.S. Soldiers in Afghanistan found that requesting indirect strikes from artillery and aviation platforms was more effective than employing direct fires. In the future operating environment of multi-domain battle, Soldiers may find the importance of direct fire eclipsed by the lethality and availability of cross-domain fires. Semi-autonomous systems may even improve direct-fire targeting to the point that human marksmanship as a tactical competency could become as obsolete as hand-to-hand combat is today. In response to our current operating environment, U.S. Army units should require gunnery to train more than just direct-fire marksmanship.

Gunnery is and will likely remain the U.S. Armored Corps’ preferred method of training and metric for measuring crew proficiency, but in its current form, gunnery does little to contribute to the collective-training proficiency required for units to succeed in FoF exevals and combat-training center (CTC) unit-validation exercises. These exercises require units to coordinate resources and mass battlefield effects, so tactical reporting to maintain a common operating picture (COP) and coordinate maneuver are as important as the ability to engage individual enemies with precision direct fires. Reporting is the foundation of that COP; it is the trigger for commanders to employ more resources to a situation and helps staffs anticipate transitions between phases of the operation.³

Unfortunately, the CTC observation reports continue to highlight that reporting needs to be improved across the board to enable unit mission-essential-task-list (METL) performance.⁴ This

article proposes to remedy this common deficiency in unit exeval performance by integrating reporting during foundational training instead of waiting to incorporate reporting requirements later in the unit's training cycle. If units sow a culture of timely and accurate reporting during foundational training such as crew gunnery, mission-command nodes at all tactical levels will reap the benefits of improved performance throughout collective training. Fortunately for commanders and tactical leaders at all echelons, it is easy, inexpensive and doctrinally sound to incorporate reporting into each gunnery engagement to build reporting into every crew's tactical muscle memory.

Train reporting with crew gunnery

Every crewman in the U.S. Armored Corps is intimately familiar with using fire commands in gunnery. Most crewmen can tell you that the first element in that fire command is "Alert" and that the fire command ends with a termination. They may not recognize, however, that the "alert" step in the fire command is actually an abbreviated contact report,⁵ and that after terminating an engagement, the vehicle commander (VC) should report the engagement, current situation and enemy battle-damage assessment (BDA) to higher headquarters.⁶

When an alert is combined with the target description, direction and distance (Steps 3-5 of the fire command), the crew has just received a contact report in "3-D" format (description, direction, distance). The final termination step, often "target [destroyed], cease fire," contains the nucleus of a BDA report. Our crews are proficient at internal reporting because they train it with the nine-step fire command and are evaluated to ensure they complete all steps. Even though that fire command already enables reporting to higher headquarters, crews often are not evaluated on the quality, accuracy and timeliness of their reports to higher; the predictable result is that crews are not proficient at reporting and often fail to send any reports at all during collective training and evaluations.

Field Manual (FM) 3-20.21, *Heavy Brigade Combat Team (HBCT) Gunnery*, formalizes the crew direct-fire engagement process for all platforms using DIDEA.⁷ DIDEA is an active decision process that crews experience in the form of the more-familiar nine-step fire command. In both processes, there are two places where reporting to higher should naturally and doctrinally occur (marked with stars on Figures 1 and 2). Star 1 in both figures denotes an opportunity for a VC to give a brief contact report at the alert step of the fire command. At the termination step of the fire command, marked with Star 2 in

both figures, a VC should be required to send at least a complete contact report and, if practical, a situation report according to the unit SOP.

For descriptions of contact and situation reports, see Figures 1 and 2.

To clarify expectations at Star 1: although the information required to send a contact is available to the VC at the alert step and is technically possible using crew communications systems, sending even an abbreviated contact report such as "Contact, tanks" would be extremely difficult for all but the most expert crews. Master gunners should not require a report to higher at Star 1 but instead focus on training reporting at Star 2 (termination step).

For commanders who have mastered the engagement process, it is doctrinally sound to use a contact report (see Table 1) to higher headquarters as the alert to the crew, and this technique could improve the crew's engagement. For example, if the crew is operating under restricted weapons-control status, there is an advantage to reporting early in the fire-command process instead of waiting until the complete command is issued to ask for permission to engage.

Early contact reports also afford platoon leaders and company commanders the opportunity to give collective fire commands that mass efficient di-

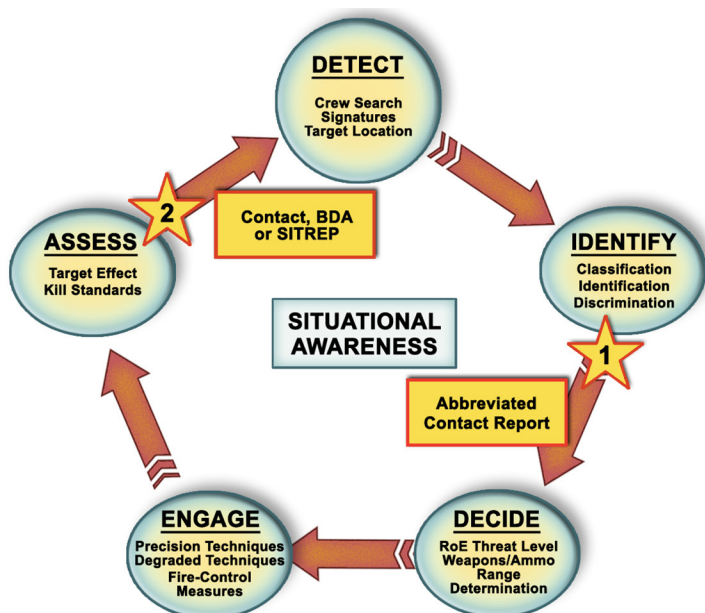


Figure 1. The DIDEA engagement process. (From FM 3-20.21, Chapter 5, Section I)

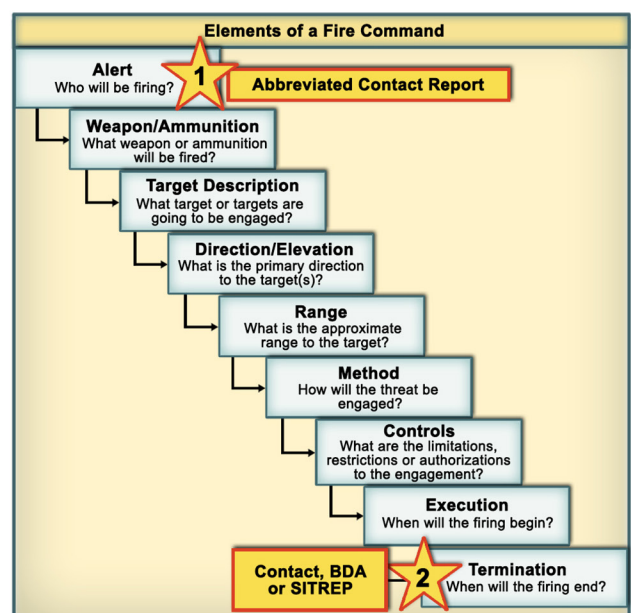


Figure 2. Elements of a fire command. (From TC 3-20.31-4, Direct-Fire Engagement Process (DIDEA), Chapter 4)

<p>FM 6-99: BLUE-1 SALUTE format is the doctrinal standard.</p> <p>3-D format is most commonly used in dismounted operations.</p> <p>According to the SOP, may abbreviate. For example, “Contact, tanks, TRP 2,” even dropping the transmitter’s call-sign and “out” to maximize brevity.</p>	<p>SALUTE format:</p> <p>S – Size</p> <p>A – Activity</p> <p>L – Location</p> <p>U – Uniform/unit</p> <p>T – Time</p> <p>E – Equipment</p> <p>3-D format:</p> <p>D – Description</p> <p>D – Direction</p> <p>D – Distance</p>
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Table 1. Contact report (spot report). A contact report is sent any time a member of an element identifies a threat to alert the element for orders to react.

rect fire on groups of targets.

Finally, reports sent at Star 1 will be received a minute or more before a report sent at Star 2 and will have the advantage of seizing the unit’s attention before the shooting starts.

Despite these advantages, given the time constrained need to rapidly engage enemy targets for crew survivability, master gunners should use crew gunnery to train termination reporting (Star 2).

Star 2 occurs at the brief pause following each engagement’s termination. In FoF collective training, these pauses are frequent and can last a long time, so it is critical that units train crews to report as soon as possible after the first enemy contact. Crews must be comfortable sending a contact report while still in contact – that is, the crew may have to report before they have destroyed all enemy in their sector. Otherwise, there is risk that the crew will fail to report in time for higher to react and assist, or the crew may be destroyed before they remember to report.⁸

After terminating a single-target gunnery task, a proficient crew should be expected to send a situation report (sitrep) (Table 2) that contains the enemy contact’s information. If there are multiple engagements in the gunnery task, the crew should send a contact report (Table 1) after engaging the first target (for example, while reloading or scanning to acquire the next target) and

send the complete sitrep after all targets are engaged. To prepare for collective training, commanders should also send a sitrep whenever they cross phase lines (PLs) and transition phases (if the table is conducted under tactical control measures), and digital COP sitreps should be used to complement voice-transmitted abbreviated sitreps.

Commanders and master gunners should assess reporting in addition to evaluating crews for marksmanship, fire commands and safety. For example, VCEs can grade a contact report against the battalion SOP and assign a five-point crew cut for errors or a 10-point crew cut for failing to report. The crew is already conducting internal reporting through DIDEA-based fire commands; it is a small incremental step to ask them to conduct external reporting at the termination of each engagement. There are simple formats available in the battalion SOP, and all VCs will have to learn those reports anyway to conduct collective training.

There is, however, exceptional value in starting to train reporting early because the habits set during crew gunnery become the baseline for that crew’s performance. Crews who incorporate reporting starting with Table II will continue to report in all future training events. This will make sections, platoons and companies more lethal and survivable and help battalion and brigade CPs be more adaptive and responsive in the face of a thinking enemy.

Reporting links individual engagements into collective action

The character of war continues to stress the importance of collective action over individual combat. Reporting is critical to the mission-command systems that synchronize action across all domains and warfighting functions to defeat threats and accomplish missions.⁹

When crews are too focused on the engagement at hand and fail to report to higher headquarters, our proverbial combined-arms phalanx disintegrates into a number of gladiators fighting individual combat, and much of the resources a brigade deploys to enable joint combined-arms maneuver go unused. The result is a less lethal and survivable battalion, company or platoon; too often, the first report of contact is also a leader’s “dying breath” transmission that his entire element has been destroyed. The higher element may not even know where to commit the reserve or what enemy it may face.

With accurate and timely reporting, crews can gain the opportunity to ask other platforms to observe, suppress or kill for them. This ability to mass additional effects from other platforms increases the crew’s lethality and survivability, which will become increasingly important in the future multi-domain battlefield environment as platforms need to mass effects on their target while minimizing their own sig-

<p>FM 6-99: BLUE-2. Level of detail varies by echelon.</p> <p>Receipt of transmission should always be confirmed.</p> <p>STAR format is common in mounted formations.</p> <p>According to the SOP, may abbreviate. For example, “Call-sign, location, continuing mission, over” to maximize brevity when there is nothing significant to report.</p>	<p>STAR Format:</p> <p>S – Slant (strength)</p> <p>T – Trace (location)</p> <p>A – Activity</p> <p>R – Recommended action</p> <p>Example platoon sitrep, STAR format, with contact report in 3-D format:</p> <p>Call sign – Blue 1</p> <p>S – Slant 2/2/1 (tanks/Bradleys/squadrons)</p> <p>T – PL Raiders</p> <p>A – defending, destroyed two BMPs, 2,500m east</p> <p>R – continuing mission</p>
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Table 2. Sitrep. Leaders send sitreps to inform higher headquarters on the element’s activity and progress toward accomplishing the mission.

nature.

As currently executed across the Armor Corps, gunnery training emphasizes crew proficiency and neglects collective action. Elements start to incorporate basic reporting at section and platoon gunnery, but fire and maneuver are largely controlled through repetitive rehearsal because leaders and CPs aren’t yet proficient. This foundational failure of training strategy severely impacts collective training as tasks, conditions and standards become more complex.

At battalion combined-arms live-fire exercises (CALFEXs) – supposedly the capstone evaluation for a unit that has certified all subordinate elements – commanders are inhibited and reporting is fragile. Units at CTCs consistently have difficulty exercising mission command as a warfighting function,¹⁰ which undermines the commander’s ability to exercise mission command (the philosophy),¹¹ and the root of the problem is at home-station training.¹²

One problem is that CPs do not generate reporting traffic at representative levels of volume, variety and velocity, so CPs at all levels struggle to gain proficiency. As a consequence, staffs may not learn to analyze information well, and system managers miss an opportunity to test their teams at full capacity. If a unit chose to train mission-command systems to the same degree as marksmanship, that unit should perform better entering an

exeval or National Training Center (NTC) validation exercise.

Mechanized and cavalry units spend a large portion of their training time and budget shooting gunnery, but gunnery can also be an excellent opportunity to develop responsive and robust mission-command nodes. The immediate purpose of incorporating reporting into crew gunnery is to cultivate the habit of sending contact and sitreps, but the principal benefit is to train mission-command nodes at all echelons.

Main CPs control current operations for the commander. In maneuver units, tactical reporting from subordinate elements feeds the targeting process and helps the CP synchronize more resources to assist the maneuver element in contact.¹³ Gunnery is an excellent opportunity to train CPs because there is an active feed of information that CP personnel can process using the same DIDEA framework that drives crew engagements: radio-telephone operations can be evaluated and trained on their ability to handle reports; executive officers can battle-track; and the operations sergeant major can validate and improve battle drills. Proficient CPs and staffs will learn to identify commander’s critical information requirements, triggers and transition points that require concise reporting to the next higher echelon.

As gunnery moves to collective training, the same contact and sitreps are the triggers for CPs to integrate

combined-arms assets such as unmanned aerial vehicles, close air support and engineers. Contact reports should also serve as a warning order for the fire-support team to prepare for a call-for-fire request. Also, battalions can use the information generated by these reports to integrate air defense, electronic warfare, chemical-biological-radioactive-nuclear and even cyber elements into training events.

Finally, as staffs become comfortable receiving information and analyzing it to anticipate battlefield events, commanders can be more responsive to an adaptive and complex enemy. CTC rotations and exevals, as a reflection of the operating environment, are increasingly complex and require CPs to manage a synchronized combined-arms effort to fight and win.

Improving reporting through unit mission-command nodes will also enable the entire unit’s ability to use mission-command philosophy at the tactical level. Instead of yoking their organization to an execution checklist to control (and synchronize) operations, proficient CPs can actualize mission command for their commander. Although Army Doctrinal Publication (ADP) 6-0, **Mission Command**, does not specifically mention reporting, it describes the process of information exchange as essential in enabling commanders to conduct operations because it is the basis for creating and maintaining shared understanding and mutual trust.¹⁴

Senior commanders genuinely want to extend trust so their subordinates can exercise disciplined initiative, but trust depends upon credibility, and credibility is earned through demonstrated proficiency. Commanders whose CPs consistently demonstrate good reporting are trusted to operate with more degrees of freedom because the higher echelon receives a continuous but managed flow of information as the tactical unit develops the situation. Commanders and their staffs can use gunnery-based CPX experience to build cohesive and proficient teams that ensure the flow of relevant and accurate information and gain the trust of their higher commands.

Armor and Cavalry leaders should train reporting during foundational training so their units are prepared to link individual engagements into collective action. Crews who train contact reports in gunnery will remember to report during collective training. CPs that practice mission command in iterations of gunnery will already have baseline proficiency when FoF training increases the complexity and load of the information they process. Staffs who

practice integrating combined arms and multiple-domain efforts during platoon and company live-fire exercises will be ready to employ the additional resources and thrive in the complexity of FoF maneuvers such as exevals and CTC validation exercises.

If staff and CP proficiency can credibly exceed the higher command's expectations, battalions and brigades may even experience the trust, empowered initiative and adaptability of mission-command-driven operations. There are many ways to train reporting and CPs, but since cavalry and mechanized formations already spend so much time in crew and collective gunnery, incorporating reporting into foundational training is the most efficient way to improve collective performance.

Objective-T and IWTS evaluate reporting

The transition from FM 3-20.21 to TC 3-20.0, *Integrated Weapons Training Strategy*, in Fiscal Year (FY) 2018 will change the way the Armored Corps approaches gunnery. The new IWTS will reboot maneuver weapons training for all weapons, systems, platforms and

small units in the Army (squad through battalion).¹⁵

IWTS' goal is to standardize weapons training across the Army and to ensure Soldiers understand both how to operate their weapons as well as how to employ them tactically. All weapons training will move through six tables, starting with a class on the fundamentals, then progress through virtual and training aids, devices, simulators and simulations (TADSS)¹⁶ training – culminating with externally evaluated live-fire qualification (Table 3).

The major changes begin with collective training, starting at the section level, which will also be structured in six progressive tables (Table 3). HBCT gunnery conducted section qualification in three tables: sections progressed from Multiple Integrated Laser Engagement System to TADSS to live-fire qualification. IWTS adds tables that will require the sections to conduct situational-training exercises (STX), fire-coordination exercises (FCX)¹⁷ and field-training exercises (FTX) training before the section can qualify and progress to platoon collective training. These new tables will require crew proficiency in

IWTS tables for individual and crew weapon systems					
Table I	Table II	Table III	Table IV	Table V	Table VI
PMI/GST Live	Engagement Skills Trainer/Advanced Gunnery Training System etc. Virtual	Drills Live – TADSS	Basic Live – live-fire	Practice qualifica- tion Live – live-fire	Qualification Live – live-fire
IWTS collective-training tables for a maneuver squad, platoon and company					
Table I	Table II	Table III	Table IV	Table V	Table VI
Class Live	STX-V Virtual	STX Live – TADSS	FCX Live – live-fire	FTX Exeval Live – TADSS	Live-fire exercise Exeval Live – live-fire
Notes: Table VI for a company is a CALFEX. As used in this table, the term “live” means hands-on training in combat uniform on combat-configured equipment, whereas “live – live fire” means combat-configured Soldiers and equipment shooting live ammunition. Structuring training in six tables has been the Army standard for gunnery since 2009 but may feel new for small arms, rockets, mortars and other weapon systems.					
IWTS collective-training tables for a maneuver battalion					
Table I	Table II	Table III	Table IV	Table V	Table VI
Staff exercise (STAFFEX), SOP or class Live	STAFFEX or COM- MEX Blended	Logistics exercise Multi-echelon Live	FCX and CPX Multi-echelon Blended	FTX Exeval FoF Live - TADSS	CPX and CALFEX Multi-echelon Live/blended

Table 3. IWTS tables. Tables for individual and crew weapon systems are from TC 3-20.0's Chapter 1. Collective-training tables for a maneuver squad, platoon and company are from TC 3-20.0, Chapter 5, Tier 2. Collective-training tables for a maneuver battalion are from TC 3-20.0, Chapter 1.

reporting as early as Table II, and reporting within the section and to higher headquarters will be externally evaluated in Table V and VI. Crews who practiced sending contact and sitreps at the termination of each engagement in crew gunnery will be able to focus on the maneuver and fire-integration training objectives, and command nodes will already be proficient at receiving the reports prior to exevals.

Units must train these six tables at every echelon (squad/section, platoon, company and battalion) to report Tier-1 readiness. Units at each echelon will be pressured to rapidly progress through the qualification tables while meeting all training and evaluation outline (T&EO) criteria¹⁸ for METL tasks because brigades must complete a brigade FCX and battalion CALFEX before they can report T-1 status.¹⁹

At battalion level (Table 3), most of the collective training focuses on exercising command nodes in communications-exercise (COMMEX) and CPX format. By training reporting and company CPs during crew gunnery, battalions will be able to progress rapidly through the required CPXs and demonstrate proficiency at the battalion FTX and CALFEX.

IWTS is integrated with the objective task-evaluation strategy, or Objective-T, to nest weapon-systems proficiency and METL proficiency. Just as in HBCT collective gunnery, an element's evaluation score reflects both marksmanship and mission task proficiency as evaluated against the T&EO.²⁰

The first performance measure in most maneuver task T&EOs, regardless of echelon, is to maintain situational understanding using sitreps. Contact reports are steps in the "execute" critical performance measures, and throughout the evaluation leaders are required to report the developing situation to their higher headquarters.²¹

Units should start training crews and CPs to use these reports as early as possible in the training cycle so that when the battalion FTX and CALFEX are conducted, reporting is smooth, accurate and timely. These collective training events will be externally evaluated and are critical for preparing the unit for the complex and dynamic

operating environment the brigade will face during its CTC validation exercise, but commanders can start preparing for them before collective training by evaluating reporting during crew gunnery.

Improve unit performance at battalion, brigade exevals

Habitual reporting is foundational to everything else a unit during its mission validation exercise.²² August's Cavalry Leaders' Warfighting Forum did not mention a need to improve unit marksmanship, but it did discuss at length the difficulties units had in establishing situational awareness to maintain mission command.²³

Armor and Cavalry leaders can dramatically improve collective performance outcomes by incorporating reporting into foundational training. Gunnery is the best place to start training reporting because crews already conduct internal reporting via the nine-step fire command, and the DIDEA process naturally and doctrinally allows VCs to send contact or sitreps to higher headquarters after terminating the engagement.

CPs and leaders at all echelons need practice receiving and analyzing these reports to make decisions and synchronize effects; there is no reason to wait until collective training to develop these mission-command processes.

Finally, IWTS and Objective-T will require units to change the way they plan, execute and assess collective training. Units will be rigorously evaluated throughout their collective training, and a unit's METL performance is fundamentally correlated to its proficiency at reporting.

These training and evaluation changes are necessary because in the future operating environment commanders will need to mass greater effects faster than ever before, ideally without creating a signature that gives away our most forward maneuver elements. The Armored Corps should take this opportunity to move beyond gunnery as high-tech mounted marksmanship and start training gunnery in a way that prepares crews for collective training and combined-arms maneuver on a multi-domain battlefield.

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Endnotes

¹ Center for Army Lessons-Learned (CALL) Bulletin No. 16-14, CTC observations, 3rd and 4th Quarters, FY 2015 (published May 2016). Improve Observation #14, reporting procedures and mission command.

² Russian tank biathlon, https://en.wikipedia.org/wiki/Tank_biathlon. I also recommend YouTube videos such as "Russia: World Championship Tank Biathlon holds final competition day," posted Aug. 13, 2006, at <https://youtu.be/y4jLRac2-qk>.

³ Army Doctrinal Reference Publication (ADRP) 3-90, *Offense and Defense*, Chapter 1 on tactics: A commander seizes, retains and exploits the initiative by achieving and maintaining a better understanding of the tactical situation than that possessed by enemy decision-makers.

⁴ CALL Bulletin No. 16-03, CTC observations, 1st and 2nd Quarters, FY15 (published October 2015). Improve Observation #3, the common operating picture.

⁵ FM 3-20.21, *Heavy Brigade Combat Team (HBCT) Gunnery*, Chapter 8, Section II, on fire commands. This section does not require a contact report but states that contact reports to higher by the VC or gunner can serve as the alert in a fire command.

⁶ FM 3-20.21, Chapter 10, Section III, on reports. This section recommends sending either a BLUE-2 (sitrep) or BDA report in accordance with unit SOP.

⁷ FM 3-20.21, Chapter 5, Section I, on the engagement process. DIDEA is an iterative, standardized and systematic approach to target engagement in both surface and air domains to ensure rapid destruction of the correct target.

⁸ Senior-leader comments during the online Cavalry Warfighter's Forum Aug. 4, 2017: "Slow reporting results in dead scouts. ... This was evident in the [Gainey Cup] live-fire exercise event."

⁹ Army Technical Publication (ATP) 6-02.53, **Techniques for Tactical Radio Operations**. This manual is an excellent reference for all radios (including digital networks) that allow reporting to enable warfighting across all phases of the operation.

¹⁰ ADRP 3-0, **Operations**. Mission command (the warfighting function) is the related tasks and systems that develop and integrate those activities enabling a commander to balance the art of command and the science of control to integrate the other warfighting functions.

¹¹ ADP 6-0, **Mission Command**. Mission command (the philosophy) is the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of unified land operations.

¹² Senior-leader comments during the online Cavalry Warfighter's Forum Aug. 4, 2017.

¹³ ATP 6-0.5, **Command Post Organization and Operations**, Chapter 1 on CPs.

¹⁴ ADRP 6-0, **Mission Command**, Chapter 2, about "the mission-command philosophy of command: create shared understanding." A critical challenge for commanders, staffs and unified-action partners is creating shared understanding of their operational environment and the operation's purpose, problems and approaches to solving them. Shared understanding and purpose form the basis for unity of effort and trust.

¹⁵ The new version of TC 3-20.0 is available for download in final draft but is not yet published. Its supporting manuals

(squad through battalion) are not yet available to the force, but the Maneuver Center of Excellence has detailed information in the Army Knowledge On-line's Master Gunner Toolbox, <https://www.us.army.mil/suite/files/43325400> (Common Access Card log-in required).

¹⁶ TADSS are intended to enable progressive training in preparation for live-fire training and as a way to mitigate risk, reduce cost and improve feedback in complex training.

¹⁷ FCX are live-fire events that train commanders, staffs and key leaders in planning and integrating direct fires, indirect fires, attack aviation and close air support in support of maneuver. The key task is for one platform to identify a target and coordinate for another platform to engage it. For example, a vehicle can identify an enemy, report the contact and direct the other vehicle in the section to engage.

¹⁸ FM 7-0, **Train To Win in a Complex World**, Chapter 3, on conducting training events. T&EO criteria are used to assess an element's proficiency at a task. The October 2016 objective task-assessment guidelines, commonly referred to as Objective-T, use a matrix to determine the element's overall proficiency. Common inputs to the matrix are conditions complexity, combined-arms integration, meeting 100 percent of critical performance measures and greater than 90 percent of all element and leader-performance measures.

¹⁹ TC 3-20.0 introduction. The brigade combat team (BCT) collective live-fire gates require BCTs to achieve T status in a BCT FCX and maneuver battalion CALFEX for the brigade to report Tier-1 readiness.

²⁰ TC 3-20.0 introduction.

²¹ FM 3-20.21, Chapter 18, Section I, on evaluating collective gunnery. Elements conducting collective gunnery are scored on a combination of their collective task assessment and their marksmanship. Elements are also required to send a digital report and must call for indirect-fire support.

²² T&EO for conduct a movement-to-contact for a combined-arms battalion (armored BCT), task number 17-BN-1074. This T&EO is written in the new Objective-T format. It clearly denotes critical

ACRONYM QUICK-SCAN

ADP – Army doctrinal publication
ADRP – Army doctrinal reference publication
ATP – Army technical publication
BCT – brigade combat team
BDA – battle-damage assessment
CALFEX – combined-arms live-fire exercise
CALL – Center for Army Lessons-Learned
COMMEX – communications exercise
COP – common operating picture
CP – command post
CPX – command-post exercise
CTC – combat-training center
DIDEA – detect-identify-decide-engage-assess
Exeval – external evaluation
FCX – fire-coordination exercise
FM – field manual
FoF – force-on-force
FTX – field-training exercise
FY – fiscal year
GST – gunnery-skills testing
HBCT – heavy brigade combat team
IWTS – Integrated Weapons Training Strategy
METL – mission-essential task list
NTC – National Training Center
PL – phase line
Sitrep – situation report
SOP – standard operating procedure
STAFFEX – staff exercise
STX – situational-training exercise
TADSS – training aids, devices, simulators and simulations
T&EO – training and evaluation outline
TC – training circular
VC – vehicle commander
VCE – vehicle-crew evaluator

performance steps and leader steps; discusses what conditions qualify for a dynamic environment and complex threat; and enumerates required leader and personnel presence for the evaluated unit to achieve a T (fully trained) rating.

²³ Senior-leader comments during the online Cavalry Warfighter's Forum Aug. 4, 2017: "Reporting over distance from the lowest echelon to the highest headquarters is incredibly important to everything [the rotational training unit does while training at NTC]."

Improving Casualty Evacuation for Our Next Decisive-Action Fight

by CPT David W. Draper

As the U.S. military transitions from counterinsurgency (COIN) operations, the U.S. Army is preparing for our next conflict using decisive-action (DA) training. The Army's National Training Center (NTC) – where brigade combat teams (BCTs) train against a thinking, near-peer oppositional force – is of course at the forefront of DA training, currently focusing on 10 training areas such as combined-arms breach, fires and counter-fires, air and ground information collection, DA in an urban environment, the commander-driven operations process and sustainment in DA.

These efforts are important aspects of DA training, but our Army and our nation as a whole has largely forgotten the overwhelming number of casualties produced in conventional warfare against a near-peer adversary. Based on observations from NTC, Army

Medical Department (AMEDD) lessons-learned and doctrine, this article will illustrate a need for improving individual and collective casualty-evacuation (casevac) training as well as outline recommendations to improve casevac operations that can and will save lives on the battlefield.

Trends from NTC

Simply put, U.S. Army casevac skills have atrophied. This is evident in NTC's casualty died-of-wounds (DoW) rates. The NTC average number of urgent and priority casualties – meaning patients requiring medical treatment in one or four hours respectively – is currently 863 with a 49-percent DoW rate. This equates to about 420 preventable Soldier deaths in a single BCT over a 14-day period.

Most, if not all, Army leaders will agree this impact on combat power is unacceptable and unsustainable to meet mission requirements. The observation begs the questions, "Why is the DoW rate so high?" and "what can be done to lower this rate?"

As will be discussed, casevac is the crux of the problem, but first we must analyze and accurately depict DoW lessons-learned in conventional warfare as well as casevac operations in NTC's DA training environment.

Lessons-learned, NTC observations

Some casualties will die in combat regardless of treatment given or care provided. This is a fact of war. The U.S. Army as a profession of arms must embrace this somber fact while still exhausting every effort to mitigate casualty mortality. Doing so prevents unnecessary loss of life and sustains combat power.

AMEDD continuously analyzes wartime patient mortality through research and studies in an attempt to improve combat-casualty care. However, these studies primarily focus on definitive medical treatment at a Role 1 aid station or higher echelons of care.

One study, on the other hand, took a different approach. Originally



published in *Military Medicine* (1984), COL (Dr.) Ronald Bellamy – an Army thoracic surgeon who significantly contributed to the U.S. military’s research in tactical combat-casualty care – observed that most combat deaths occur on the battlefield before evacuation to a medical treatment facility (MTF) occurs.¹ Furthermore, Bellamy found that 20 percent of all casualties are essentially killed in action and that DoW rates are a direct function of evacuation time. In simple terms, the greater the evacuation time, the higher the DoW rate.

Research like that of Bellamy’s led the Army to emphasize the importance of tactical combat-casualty care (TCCC), which is critical for the Army to decrease casualty mortality without sacrificing a tactical advantage. TCCC, originally developed in the mid-1990s for Special Forces, was intended to avoid preventable death due to trauma and provide good medicine with good tactics.² The global war on terrorism led the U.S. military to universally adopt the principles of TCCC, which is now the foundation of our combat-medical and combat-lifesaver (CLS) training programs. Despite being adopted during the global war on terrorism and the associated COIN operating environment, TCCC is just as, if not more important, in a DA operating environment against a near-peer adversary.

There are three phases of TCCC: care under fire, tactical field care and tactical evacuation care. NTC emphasizes the importance of all three phases of TCCC, but units commonly struggle with two of them: care under fire and tactical field care. Of particular concern are casualty collection point (CCP) operations and the integration of ground casevac and medical-evacuation (medevac) platforms. Ground medevac is preferred when possible, but the ground medevac vehicles organic to a BCT are too few to manage the high casualty loads in DA. Consequently, we are finding that units are overwhelmed with high casualty loads and too much time is wasted getting casualties to the CCP.

To reiterate Bellamy, DoW rates are a function of evacuation time, and NTC’s notional casualties are dying because they simply run out of time. More

specifically, casualties are running out of time between the point of injury (Pol) and CCP.

What does doctrine say?

Army Technical Publication (ATP) 4-25.13, *Casualty Evacuation*,³ is the most logical doctrine starting point for this discussion. However, this doctrine primarily discusses the how-to aspects of casevac from the individual Soldier perspective. In other words, the Army’s single casevac publication focuses on individual Soldier training and omits unit-level casevac operations. ATP 4-25.13 does not address critical unit casevac tasks such as how to establish a CCP or who is responsible for managing it.

As stated previously, most casualty fatalities occur before the patient arrives at a Role 1 MTF, and the same observation holds true at NTC. If ATP 4-25.13 does not tell us how to execute unit-level casevac operations, then what doctrine does?

Perhaps the best doctrinal reference for unit-level casevac operations is Field Manual (FM) 3-21.10, *The Infantry Rifle Company*. In this publication, the importance of casevac is emphasized in Chapter 11, “Sustainment Operations.” The following is an excerpt under the first sergeant’s responsibilities (Chapter 11, Paragraph 6): “In addition to his tactical responsibilities, the [first sergeant] is a key player in sustaining the company. ... He normally supervises the evacuation of casualties. ... He performs command and control over the company medic and oversees the evacuation plan from platoon to company CCP.”⁴

FM 3-21.10 also describes the roles and responsibilities of the company’s senior medic: “The senior company medic must oversee and provide guidance to platoon medics, triage the sick and wounded at the company CCP... and request and coordinate the evacuation of sick, injured or wounded personnel under the direction of the company [first sergeant].”

FM 3-21.10 Chapter 11, Paragraphs 76 through 85, provide general guidance on casevac operations and, most importantly, emphasizes important aspects of casevac such as rehearsals,

care under fire, standing operating procedures (SOP), triage and integration of the battalion medical platoon.

What to do: techniques that work

There is no single recipe for success in casevac operations. Nonetheless, there are a few simple techniques units can exercise to drastically improve casevac operations and overall patient survivability.

First and foremost, the company/battery/troop first sergeant must supervise the unit casevac plan. Evacuation from Pol to CCP is strictly a company-level responsibility. To best employ an effective CCP using the principles of TCCC, first sergeants need one or more designated casevac vehicles with litters, litter straps and CLS equipment, as well as company medics and combat lifesavers staged at an established CCP.

When a vehicle or fighting position sustains casualties, those casualties must be quickly pushed or pulled to the CCP using dedicated aid and litter teams. This is where care under fire transitions to tactical field care. Once a casualty is brought to the CCP, the company medic conducts patient triage, begins patient assessment and determines evacuation precedence.

Soldiers, combat lifesavers and combat medics need to know their roles and responsibilities during all three phases of TCCC. To build shared understanding in casevac and medevac operations, Soldiers at all levels need to be enabled with the right information, and a casevac/medevac concept sketch is a great leader tool to accomplish this.

The use of a casevac/medevac concept sketch and/or smart card as part of a unit SOP can prove invaluable in enabling Soldiers down to the individual warfighter. The concept sketch does not need to be complicated; in fact, the simpler it is, the more effective it is. As long as the casevac/medevac concept sketch accurately depicts friendly units, CCP locations, aid-station locations and coordinating instructions like radio frequencies, call signs and Joint Capabilities Release (JCR) role names, the concept sketch serves its purpose.

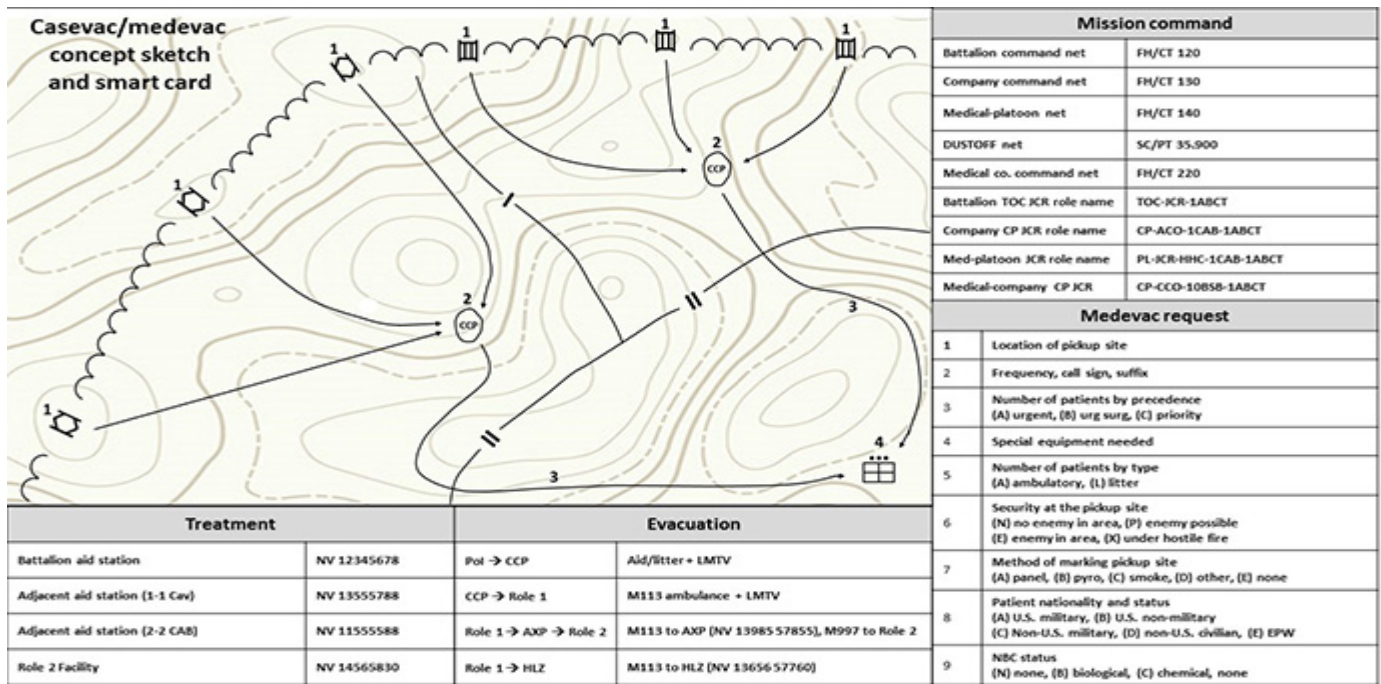


Figure 1. A sample casevac/medevac concept sketch and nine-line medevac-request smart card.

At battalion level, the medical-operations officer (MEDO) is the staff officer responsible for integrating and synchronizing air and ground casevac and medevac for his or her respective unit. This is best accomplished throughout the military decision-making process (MDMP) with bottom-up refinement from company-level leadership like the commander and first sergeant. At the conclusion of the MDMP's final step, orders production, company commanders and first sergeants could have a casevac and medevac concept sketch, produced by the battalion MEDO, for rehearsals and troop-leading procedures (TLPs).

Rehearsals such as the combined-arms rehearsal and sustainment rehearsal are also critically important to casevac and medevac operations. Recent observations at NTC have shown that units are often woefully unprepared to discuss the health-service-support (HSS) plan, which includes the air and ground casevac and medevac plan. A thorough HSS script, briefed by the battalion or brigade MEDO, is absolutely necessary for effective casevac and medevac. The MEDO must be prepared to discuss the five most important medical functional areas: medical mission command, treatment, evacuation, medical logistics and hospitalization. If a casevac and medevac concept

sketch is produced during MDMP, the MEDO can use his/her sketch as a briefing tool during rehearsals, which will foster shared understanding and rehearsal effectiveness.

NTC prep and casevac SOPs

As mentioned, NTC has 10 training focus areas, one of which is sustainment in DA. Medevac and casevac fall under the sustainment warfighting function, but this is a small piece of sustainment operations. Given the myriad of sustainment requirements like food, water, fuel, ammunition and repair parts, casevac and medevac operations can easily be forgotten or omitted in the planning process. We can rationalize high DoW rates at NTC all we want, but high DoW rates at combat-training centers can easily equate to real deaths on a real battlefield in our country's future.

The adage "nothing happens until something moves" is particularly relevant in the casevac and medevac discussion. The bottom line is that time is the most critical factor for patient survivability, and casevac needs to be efficient to maximize time. Based on observations from NTC, the most significant time lost in the casevac process is between the Pot and CCP; therefore, this is where units can focus their

training effort. To set conditions for successful casevac, brigades can use staff-assisted visits and an organization inspection program to assist battalions with their CLS program, casevac SOP, individual and collective medevac/casevac training and medical-equipment inventories.

The first, and arguably easiest condition to set, is individual casevac training as part of unit training plans. Individual casevac training can be concurrent with CLS training, which is highly encouraged because it maximizes training time with closely linked topics. However, the CLS program should not be perceived as the sole means of casevac and TCCC training. Units often decide to make 100 percent CLS training and certification the standard. Although the training is useful, compulsory CLS training for all Soldiers creates the false assumption that everyone is a qualified CLS, and leaders therefore fail to assign an individual CLS for each squad, team or crew. Rather than mandatory CLS training across an entire formation, units are encouraged to scrutinize whom they assign as CLS and enable those Soldiers with the necessary medical supplies and follow-on training to be effective.

The second most important condition to set is company and battalion casevac SOPs. An effective casevac SOP



Figure 2. Combat medics from Company C, 299th Brigade Support Battalion (BSB), 2nd Armored Brigade Combat Team (ABCT), 1st Infantry Division, escort notional patients to a helicopter landing zone (HLZ) at Camp Buehring, Kuwait, in November 2016. (Photo by CPT David Draper)

addresses the specifics of standard and nonstandard vehicle marking, aid and litter teams, CLS and combat medic personnel and equipment checklists (pre-combat checklist (PCC)/pre-combat (PCI)), reporting, medevac requests and communications using frequency modulation (FM), digital and visual methods. Once adopted, a casevac SOP can be routinely tested with all, or nearly all, platoon-level-and-above training, which leads to the final recommended condition for successful casevac operations – that condition being culture change.

As an Army, we need to build casevac and medevac into our training culture. Every field training exercise (FTX), situational-training exercise, live-fire exercise, gunnery, weapons qualification, physical-training event, roadmarch, etc., is a casevac-training opportunity. Units are encouraged to incorporate self-aid, buddy aid, casualty carries and drags, medevac requests and the overall principles of TCCC into their training culture. Also, multi-echelon collective training such as FTXs are great opportunities to allow medical platoons to train ground casevac and medevac. This training stresses mounted land navigation, digital and FM communications, patient loading and unloading, in-route medical care, PCC/PCIs, use and requisition of Class VIII and overall TLPs that all medical platoons need the opportunity to exercise. While medical platoons practice their own critical task of ground medical evacuation, the

opportunity for multi-echelon training can be used to validate company-level casevac SOPs.

A great example of multi-echelon medevac/casevac training is the integration of a medical platoon's evacuation squad to link up at a company CCP during weapon qualification. The

company executing weapon qualification can exercise TCCC concurrent training (for example, care under fire and establishing a CCP) while the medical platoon exercises mounted land navigation, linking up at a CCP, patient exchange and in-route medical care. Training such as this improves TCCC proficiency at the individual warfighter level, increases training efficiency and fosters a unit culture that emphasizes the importance of medevac and casevac.

Conclusion

The anticipated casualties in DA against a near-peer adversary is an uncomfortable subject when considering the associated wounds, injuries and sickness. The overall number of casualties sustained in conventional warfare can quickly become overwhelming if we as an Army do not prepare ourselves. A 49-percent average DoW rate for urgent and priority patients, as currently observed at NTC, is not acceptable. The U.S. Army cannot tolerate nearly half its seriously injured casualties to die of their wounds.



Figure 3. 2LT Richard Fischl, medical-platoon leader for 1-64 Armor, center, briefs CSM Lash Bailey, 1-64 Armor's command sergeant major, right, and SGT Katherin Dawson, senior company medic for Company D, 1-64 Armor, on the casevac plan during NTC Rotation 17-05 for 1st ABCT, 3rd Infantry Division, in April 2017. (Photo by CPT David Draper)

By focusing training on casevac operations, units can significantly improve patient survivability. Most important to patient survivability is the rapid movement of casualties on the battlefield to higher echelons of medical care. Evacuation time is the leading contributing factor of DoW rates, so units must train themselves to maximize the use of time in the casevac and medevac process.

First-sergeant-led casevac operations at the company, battery and troop level; CLS training that incorporates individual casevac tasks; casevac SOPs; casevac/medevac rehearsals; and a unit culture that emphasizes multi-echelon casevac/medevac training between companies and their battalion medical platoon are the primary recommendations for units to improve overall evacuation operations. Units that aggressively execute these recommendations will undoubtedly be better prepared to conduct casevac operations and prevent unnecessary loss of life on the battlefield.

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Endnotes

¹ COL R.F. Bellamy, "The Causes of Death in Conventional Land Warfare: Implications for Combat Casualty Research," *Military Medicine*, Vol. 149, 1984.

² K.B. Butler and L.H. Blackbourne, "Battlefield Trauma Care Then and Now: A Decade of Tactical Combat Casualty Care," *Journal of Trauma and Acute Care Surgery*, Vol. 73, No. 6, Supplement 5, 2012.

³ ATP 4-25.13, *Casualty Evacuation*, Headquarters Department of the Army, 2013.

⁴ FM 3-21.10, *The Infantry Rifle Company*, Headquarters Department of the Army, 2006.

ACRONYM QUICK-SCAN

ABCT – armored brigade combat team
AMEDD – Army Medical Department
ATP – Army technical publication
AXP – ambulance exchange point
BCT – brigade combat team
BSB – brigade support battalion
CAB – combined-arms battalion
Casevac – casualty evacuation
CCP – casualty collection point
CLS – combat lifesaver
COIN – counterinsurgency
CP – command post
DA – decisive action
DoW – died of wounds
EPW – enemy prisoner of war
FM – field manual
FM – frequency modulation
FTX – field training exercise
HLZ – helicopter landing zone
HSS – health-service support
JCR – Joint Capabilities Release
LMTV – light medium tactical vehicle
Medevac – medical evacuation
MEDO – medical officer
MDMP – military decision-making progress
MTF – medical treatment facility
NBC – nuclear, biological, chemical
NTC – National Training Center
PCC – pre-combat checklist
PCI – pre-combat inspection
PoI – point of injury
SOP – standing operating procedures
TCCC – tactical combat-casualty care
TLP – troop-leading procedures
TOC – tactical-operations center



Return of the Fighting Executive Officer

by 1LT Matthew Rohrback

The cavalry troop in today's armored brigade combat team (ABCT) represents the eyes and ears of the brigade commander in a formation that remains unmatched in its ability to employ precision armored firepower in the land domain. The troop is uniquely suited to fight for information when conducting reconnaissance and to employ lethal direct and indirect fires during security operations. Yet the executive officer remains ill-equipped to support the troop or assume command due to the platform limitations of the M1068A3 Command Post (CP).

This shortcoming is compounded in the conduct of combined-arms maneuver (CAM), when the troop is routinely hamstrung by the inability of all its M113 family vehicles to keep pace with the Bradley. This is not news to Army leaders, as the Armored Multi-Purpose Vehicle (AMPV) and variants are scheduled to replace the M113 chassis in the 2020s.¹

However, these pending improvements lead cavalry leaders to ask a fundamental question about the armored

troop organizational structure: should a mission-command (MC) vehicle be included in our modified table of organization and equipment (MTOE) for the executive officer? This question must be answered in two distinct time horizons: 1) the Army must decide if the MC-variant AMPV should remain in the cavalry-troop MTOE for the executive officer in the future; 2) while also struggling with the interim inclusion of the M1068 in light of recent changes to squadron structure and limitations the vehicle places on troop maneuver.²

While both of these provide ample opportunity for discussion, this article seeks to evaluate the suitability of the M1068 and AMPV in light of the current operational environment and contemporary doctrine, explaining why a transition from MC platforms to any Bradley variant is not only feasible but preferable for cavalry formations.

Beyond M1068

Since it was fielded in 1960, the M113 and its variants have served as a central component – albeit an antiquated one – of armored formations in every major American conflict since their

introduction to the force.³ Calling any variant of the M113 outdated and in need of replacing comes as a surprise to no one. More than a year ago, the Maneuver Center of Excellence's director of mounted requirements and the Armor Branch historian stated the case plainly: "[The M113] lacks the survivability, mobility and digital-networking capability required for current and future operations."⁴

After the cancellation of the Future Combat Systems Manned Ground Vehicle (2009) and Ground Combat Vehicle (2014), the unveiling of the first AMPV prototype offers a promising platform to replace the M113 family of vehicles.⁵ The AMPV will offer modular designs to replace all current M113 chassis vehicles, with the general-purpose, 120mm mortar carrier, medical-evacuation, medical treatment and MC variants scheduled to replace their counterparts in the squadron starting in the 2020s.⁶

While potential changes to the troop MTOE during the platform transition are indiscernible so far in the future, there is little cause to believe that the

executive officer will not command the MC AMPV when it is fielded in armored brigades. The new platform will address many of the limitations the M1068 creates for the troop and the executive officer:

- The MC AMPV offers an impressive array of network and communications capabilities to future troop CPs.
- Two 400-watt generators will support the MC technology suite and afford the integration of a DUKE3 system to combat asymmetrical threats.⁷
- Improvements to mobility, which will be inherent in the adoption of a Bradley-chassis vehicle, will allow AMPVs to follow close behind Bradleys and Abrams tanks with little compromise for terrain or speed.
- Crew survivability and force protection will be greatly augmented through increased armor, a steeper front glacis and an improved fire suppression system.
- Based on the AMPV prototype unveiled in December 2016, crews can expect to employ a turret-mounted medium or heavy machinegun, which is a welcome change from defending the CP with personal weapons.

Nevertheless, these platform improvements fail to deliver the necessary platform capabilities for future cavalry-troop executive officers to support the troop and assume command in combat.

Fighting executive officer?

The executive officer's doctrinal role is inherently flexible but centers on the MC and sustainment warfighting functions (WfF) in both implied and specified duties:⁸

- In conjunction with the troop first sergeant, executive officers manage sustainment operations for the troop.
- Executive officers conduct tactical coordination with attached, higher and follow-on units – a core competency in cavalry-troop operations when conducting a passage of lines.
- Executive officers lead the troop quartering party when establishing a new tactical-assembly area.
- Operating the troop CP with the

forward signal noncommissioned officer, the executive officer must compile reports and track developments to report higher and provide the commander current, accurate information so he or she can make sound tactical decisions.

The improvements of the AMPV over the M1068 augment the executive officer's ability to conduct all these operations – yet, while these improvements are necessary, they are not enough.

All current doctrinal references for troop-level mechanized formations identify the first duty of the executive officer as second in command of the unit.⁹ Ultimately, this is where current designs for the MC AMPV fall short. MC AMPV designs are limited to crew-served weapon armaments and do not provide the necessary direct-fire capabilities to merit fielding in the armored-cavalry troop when a "5" call sign may need to immediately assume command as the "6" and lead. Indeed, the potential scenarios in which an executive officer may need to assume command of a troop brings with them the distinct probability of the formation being in contact – or with direct-fire contact imminent. Without the M242 Bushmaster – or comparable armament – available to the executive officer's platform, he or she is ill-prepared to assume command.

Uniqueness of armored cavalry

This capabilities gap in succession of command transitions comes at the peril of the troop and the squadron. Perhaps more so than any other BCT, the armored brigade must be prepared to engage threats and adversaries – whether nation-state or non-state actors – who possess mechanized and motorized formations in all geographies.¹⁰ The proliferation of dismounted anti-armor capabilities in the hands of any formation reinforces this reality, and the renewed importance of crew survivability will be vital.¹¹

The squadron organizational structure has adapted to the operational environment with the transformation to two 6x36 Bradley platoons troop and the addition of one tank troop. Fourteen more M1A2 Abrams tanks lend

the squadron commander a new degree of tactical flexibility, as the tank troop can operate as an organic formation in support of scouts or with tank platoons put under operational control of cavalry-troop commanders. Moreover, with a triangular design for the ABCT, the squadron possesses the ability to pass off contact from one troop to each combined-arms battalion (CAB).¹² These changes – combined with an ability to maintain direct-fire contact and destroy armored and light-armored forces surpassing that of battalion scout platoons – highlight a core competency of the armored-cavalry troop: to fight for information for squadron, battalion and brigade commanders.

Even with the increased lethality of the 13-Bradley cavalry troop, current doctrine and history remind us that cavalry organizations are only as valuable as the information they can provide a commander.¹³ Cavalry troops need to not only relay information reports to squadron but also to adjacent units. This is especially true during a passage-of-lines, where cavalry troops will often be required to coordinate directly with another battalion. Likewise, executive officers are better suited to coordinate horizontally for ground medical evacuation or sustainment operations, or to pass off contact internal to the squadron in a platform with redundant and effective communications systems.

These requirements pose a powerful argument to the inclusion of a MC vehicle in the troop – especially during cavalry operations spanning great distances. Indeed, fighting for information is only advantageous should that information lead to a better decision by a commander.

Beyond rapid and accurate reporting, the executive officer is the node for his or her troop's exercise of the MC and sustainment warfighting functions to enable the troop's maneuver and intelligence-collection efforts. Losing frequency modulation (FM) or digital communications in any organization is dangerous, but in the cavalry it can quickly become disastrous.

The M1068 and the AMPV have, and will, provide a reliable delivery platform for reports and orders. Yet in

ensuring reliability in MC and sustainment, we sacrifice lethality in an unnecessary tradeoff. In the ABCT, the Army has already solved the problem of intermittent and ineffective communications with higher echelons through the fires warfighting function.

To better understand how the Army has retained constant connectivity between the line-company elements and higher headquarters across great distances, cavalry leaders should look to the M7A3 Bradley fires-support team (BFiST).

Past as prologue: M7A3 BFiST

Though not without its flaws, the BFiST integrates the coordination of mortar, artillery and air assets to support maneuver at the troop level, even given the dispersed nature of cavalry operations. While providing the mobile, protected firepower of the M3, the platform delivers digital and FM communication with the squadron fires cell and has the capacity to simultaneously conduct FM communications in very-high-frequency bandwidths on four nets. The BFiST also provides an ergonomic workspace for fires planning during troop-leading procedures, allowing its crew the ability to battle-track and generate or process fire missions while conducting reconnaissance-and-security operations.

With a BFiST, the troop commander gains a wingman to maneuver with during operations and is afforded the option of attaching the FiST directly to the troop main effort, or to a platoon in contact, with reassurance that the attached asset will not become a liability due to inadequate platform mobility or survivability. In short, the M7A3 effectively balances the necessities of reliable communication, force protection, mobility and lethality at the troop-level in CAM and wide-area security.

The history of the BFiST is also instructive toward modern-day challenges based on its development history. During Operation Desert Storm, units from 1st Cavalry Division moved their FiSTs from the inadequate M981 FiST-V into Bradleys to keep pace with mechanized formations on the offense.¹⁴ Along with the FiST, laser locator-designators

were moved from the M981s to M2s in lieu of the tube-launched, optically tracked, wire-guided missile launcher. The new FiST platform provided the necessary mobility to keep FiSTs on pace with maneuvering units over long distances while also affording greater survivability and firepower.

This *ad hoc* solution provided the initial framework for the M7A3 BFiST fielded in 2000.¹⁵ The same pattern of functional imperatives driving tactical ingenuity can, and should, shape the development of a new platform for the armored-cavalry troop executive officer in future operations.

Looking ahead

At a minimum, the armored-cavalry troop executive officer's M1068 should be replaced by a M7A3 BFiST or M3 variant with comparable communications capabilities. Particularly in today's operational environment – where reports from our combat-training centers and conflicts in Eastern Europe indicate the limitations and vulnerabilities of traditional CP employment techniques – cavalry commanders require the flexibility afforded with the firepower and survivability of a Bradley in CP operations.¹⁶ Commanders can effectively deny adversaries the ability to monitor and intercept our communications by positioning their CP parallel to the forward-line-of-troops rather than perpendicular to friendly formations.¹⁷ However, to do so in an unarmed M1068 or insufficiently armed AMPV in such a position requires great tactical risk. These compromises can be avoided with the adoption of a Bradley-based troop CP.

An executive officer in a Bradley augments troop-quartering-party security and no longer limits occupation time to the crawling speed of the M1068. Tactical transitions internal to the troop, and handovers of contact and reconnaissance with CAB scout platoons, will be accelerated with a platform change. During security operations, where at present the executive officer is functionally incapable of applying the concepts of supporting range and distance, the addition of a Bradley variant with main gun and coax will lend more depth and breadth to a commander's screen. In security

operations, keeping an easily identifiable MC platform out of the troop will deny adversaries the ability to sense mobile CPs as high-payoff targets in their counter-reconnaissance efforts.¹⁸

Even with no engineering modifications to the M7A3, it is preferable to the M1068 due to increased mobility, survivability and firepower. Minor engineering adjustments will continue to improve the platform for executive-officer duties. Remove the stand-alone computer unit and install a Joint Capabilities Release (JCR) with touchscreen interface, and the executive officer has the same digital battle-tracking capabilities as an M1068. Replace the Fires Support Sensor System with an auxiliary power unit, and the mobile CP will be able to conserve fuel and reduce its noise signature in security operations.

The same basic capability requirements would drive the change necessary to move the troop executive officer into the M2A3 or M3A3. Though it would be preferable to engineer the squad-leader display to allow touchscreen JCR capabilities with keyboard, it would not be necessary. Every tank executive officer in the squadron, and every infantry-company executive officer in the brigade, operates from the turret of a fighting vehicle.¹⁹ Armored-cavalry-troop executive officers need not be different.

Ultimately, questions of future design modification would be answered by engineers, not maneuver lieutenants. But without bringing to light the necessary platform capabilities for armored-cavalry-troop executive officers, we risk diminishing our future formations' ability to bring to bear the mobility, firepower and shock effect that make the cavalry lethal. The change from the M1068 will play to the strengths of our mechanized forces and yield great dividends for armored-cavalry troops and our ABCTs. The options available and the minimal adjustments required are cause for encouragement in armored-cavalry formations.

Perhaps most encouraging is that the Army has already solved challenges like this on a limited scale in the recent past. Beyond the adaptation of the BFiST in Operation Desert Storm, but

still concerning the fires Wff, the Army fielded the Short-Range Air Defense Bradley in the 1990s and converted to the M6 Linebacker in the early 2000s.²⁰ While both systems were phased out in the mid-2000s, they proved the M2's adaptability to meet tactical needs.

We have faced this situation before with respect to mission command. In 2003, 4th Infantry Division developed and fielded five battle-command on-the-move (BCOTM) Bradleys and sent four to Iraq with markedly successful results.²¹ The platform enabled then-MG Ray Odierno to command 4th Infantry Division during the Battle of Taji from a redesigned M7A3 and subsequently announce "it is the way ahead" with respect to battle command.²²

That was nearly 15 years ago. The transformation from BFiST to BCOTM Bradley took less than three months. Armored-cavalry troops are ready for a similar change today.

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Endnotes

¹ Sydney J. Freedberg Jr., "Tank Goodness, At Last: Army, BAE Roll Out AMPV To Replace 56-Year-Old M113," *Breaking Defense*, Dec. 15, 2016; accessed March 11, 2017 at <http://breakingdefense.com/2016/12/tank-goodness-at-last-army-bae-roll-out-ampv-to-replace-56-year-old-m113/>.

² These doctrinal changes are highlighted in Army Technical Publication (ATP) 3-20.96 and the culmination of the ABCT standard scout platoon (SSP) force-design update (FDU). The new squadron K-series MTOE includes the addition of one tank company, and the SSP FDU sets conditions for the squadron to transition all six

of its scout platoons to 6x36 Bradley formations. See ATP 3-20.96, *Cavalry Squadron*, Washington, DC, May 2016, and the Armor School's *Thunderbolt Blast*, February-March 2014.

³ Dr. Robert S. Cameron and COL William T. Nuckols Jr., "Don't Harness an Ox to a Racehorse: Get the M113 Out of the Armored Brigade Combat Team ... Now, Please!" *ARMOR*, January-March 2016.

⁴ Ibid.

⁵ U.S. Army Acquisition Support Center, "Armored Multi-Purpose Vehicle (AMPV)," 2017; last accessed March 20, 2017 at <http://asc.army.mil/web/portfolio-item/gcs-ampv/>.

⁶ Ibid.

⁷ AMPV Industry Day, Sterling Heights, MI, April 24, 2012.

⁸ ATP 3-20.971, *Cavalry Troop*, Washington, DC, March 2016.

⁹ As seen in ATP 3-20.971, Chapter II, and ATP 3-90.1, *Armor and Mechanized Infantry Company Team*, Washington, DC, January 2016.

¹⁰ Field Manual (FM) 3-98, *Reconnaissance and Security Operations*, Washington, DC, July 2015. Also, see ATP 3-20.96, Chapter 2, listing capabilities and limitations of each BCT's squadron.

¹¹ Scott Stewart, "Anti-Tank Guided Missiles Pose a Serious Threat," *Stratfor*, April 30, 2015; last accessed March 27, 2017 at <https://www.stratfor.com/weekly/anti-tank-guided-missiles-pose-serious-threat>.

¹² SPC Derrik Tribbey, "1st ABCT Soldiers reflect on past, future with Triangular Design Ceremony," Dec. 23, 2015; last accessed March 17, 2017 at https://www.army.mil/article/160386/1st_ABCT_Soldiers_reflect_on_past_future_with_Triangular_Design_Ceremony. How many CABs the squadron in the aggregate passes contact off to is determined by how the squadron is operating in the overall brigade concept. See FM 3-98, Chapter 1, Table 1-1.

¹³ For current doctrine, see FM 3-98, Chapter 5, Section 1, Paragraph 5-5: Report all information rapidly and accurately. Historically, J.E.B. Stuart's employment of Confederate cavalry in the weeks leading to the Battle of Gettysburg is an oft-referenced example of failing to provide the commander with the necessary collected intelligence and information. As a result, Robert E. Lee's Army of Northern Virginia was drawn into battle without the eyes and ears of the force. See Daniel Landsman, "Lee's Cumbersome Cavalry: J.E.B. Stuart's Troubled Ride to Gettysburg," 2014; last accessed March 13, 2017

at <http://www.civilwar.org/battlefields/gettysburg/gettysburg-history-articles/lees-cumbersom.html>.

¹⁴ Nuckols and Cameron.

¹⁵ "M981 Fire-Support Team Vehicle," online article last accessed Nov. 25, 2013, at <http://www.flickr.com/photos/34540417@N07/7978083684/>.

¹⁶ CPT Joshua T. Christian, "Mastery of the Fundamentals of Passive Counter-reconnaissance to Survive against a Hybrid Threat," *ARMOR*, July-September 2016.

¹⁷ ATP 6-02.53, *Techniques for Tactical Radio Operations*, January 2016.

¹⁸ That is, to deny all measures taken by an enemy commander to counter reconnaissance and surveillance efforts. See ATP 3-20.97, 4-16.

¹⁹ ATP 3-90.1.

²⁰ "M6 Bradley Linebacker," *Global Security*, 2017; last accessed March 20, 2017 at <http://www.globalsecurity.org/military/systems/ground/m6.htm>.

²¹ Rebecca Morley, "Battle-Command On-The-Move (BCOTM) Bradley," *United Defense*. And, Chief Joseph Kosbar and Rebecca Morley, "Battle Command on the Move," Department of Defense Command and Control Research Program, Fort Monmouth, NJ, 2004; last accessed March 14, 2017 at http://dodccrp.org/events/2004_CCRTS/CD/papders/225.pdf.

²² Retired LTC Edward J. Erickson and MG Raymond T. Odierno, "The Battle of Taji and Battle Command on the Move," *Military Review*, July-August 2003.

ACRONYM QUICK-SCAN

ABCT – armored brigade combat team
AMPV – Armored Multi-Purpose Vehicle
ATP – Army technical publication
BCOTM – battle-command on-the-move
BCT – brigade combat team
BFiST – Bradley fires-support team
CAB – combined-arms battalion
CAM – combined-arms maneuver
CP – command post
FDU – force-design update
FiST – fires-support team
FM – frequency modulation
FM – field manual
JCR – Joint Capabilities Release
MC – mission command
MTOE – modified table of organization and equipment
SSP – standard scout platoon
Wff – warfighting function

FROM THE SCREEN LINE

Your Reconnaissance and Security Courses

by LTC Jeffrey J. Barta

Greetings, fellow Cavalry troopers and combined-arms maneuver leaders. In this "From the Screen Line," I would like to report about some recent refocusing efforts within your reconnaissance and security (R&S) functional courses. Established at Observation Post (OP) Harmony Church on Fort Benning, GA, 3rd Squadron, 16th Cavalry (part of 316th Cavalry Brigade), is your school for educating R&S leaders.

Recent reporting from Named Area of Interest (NAI) 0001 during last spring's Gainey Cup contained several indicators of the readiness of our R&S enterprise. As CPTs Patrick Zang and Josh Christian described in the Summer 2017 issue of *ARMOR* (<http://www.benning.army.mil/armor/eARMOR/content/issues/2017/Summer/pdf/3Zang-Albert17.pdf>), the areas needing improvement for our scouts are land navigation, vehicle identification, call for fire and actions on contact. These individual and small-unit collective tasks are arguably the most important things we need our scouts to perform to help fight for information to help commanders seize, retain and exploit the initiative. Our R&S formations performed admirably in an economy-of-force role during the past decade and half, but we have room for improvement on our fundamental R&S skills required in a decisive-action environment. Many units are adding increased emphasis on the basics, and your leader-enhancing functional courses in 3-16th Cavalry Brigade are doing the same.

Shifting observation to NAI 0316, the focus of the three R&S courses – the Cavalry Leader's Course (CLC), Army Reconnaissance Course (ARC) and the Reconnaissance and Surveillance Leader's Course (RSLC) – was adjusted within the past two years. Organized under

a common Department of Reconnaissance and Security, these courses have recently been refocused to train our R&S leaders at echelon, moving away from what many senior troopers remember as parochial branch-specific schools.

CLC continues to educate officers, chief warrant officers and noncommissioned officers to execute the planning and execution of reconnaissance-collection and tactical-security tasks at the troop, squadron and brigade combat team (BCT) level.

ARC now primarily focuses on training scout-platoon leaders and platoon sergeants while developing advanced skills in R&S beyond those taught within primary military education.

RSLC traces its roots to the now-inactivated long-range surveillance companies. It builds on those fundamental skills and now focuses on training at the squad and team level, giving leaders the knowledge, skills and attributes (KSAs) to apply the fundamentals of reconnaissance at the small-unit level. This is now for squad and section leaders within all cavalry and R&S formations and is a best fit for dismounted squad leaders as 6x36 scout platoons grow to develop long-duration OP capabilities as well as infantry BCT (IBCT) task force scout platoons and IBCT Charlie Troop leaders.

These mutually supportive courses provide trained reconnaissance leaders to fill key positions in the operational force.

In addition to the revised leader-echelon concentration, these physically and mentally challenging courses drive students to expand on their existing knowledge and thrive in dispersed and uncertain situations. RSLC and ARC are increasing instruction on land navigation and vehicle and equipment

identification while maintaining current outcomes. Notable topics of emphasis across the portfolio of R&S classes include:

- Application of the fundamentals of R&S while leading units at echelon from troop to squad and specialized teams;
- Understanding the link between maneuver commanders' decisions, priority intelligence requirements (PIR) and the creation and execution of commanders' R&S guidance;
- Analysis of the factors of intelligence preparation of the battlefield when planning for operations using the troop-leading procedures (TLPs) or the military decision-making process (MDMP);
- Evaluation of terrain by use of threat and friendly forces while applying advanced land-navigation techniques oriented on reconnaissance objectives in Global Positioning System-denied environments;
- Understanding and application of advanced communications techniques with high-frequency (HF) radios, valuable in electromagnetically contested areas.

As your premier combined-arms functional training brigade, 316th Cavalry Brigade highly encourages Soldiers from Career Management Fields 11, 19, 35 and 74 – as well as combined-arms leaders from the Army, joint or international community – to attend these classes to improve the readiness of our operational R&S units. Interested troopers should apply through their unit schools representatives in the Army Training Requirements and Resources System and frequently check the official Website (<http://www.benning.army.mil/armor/316thCav/>) for

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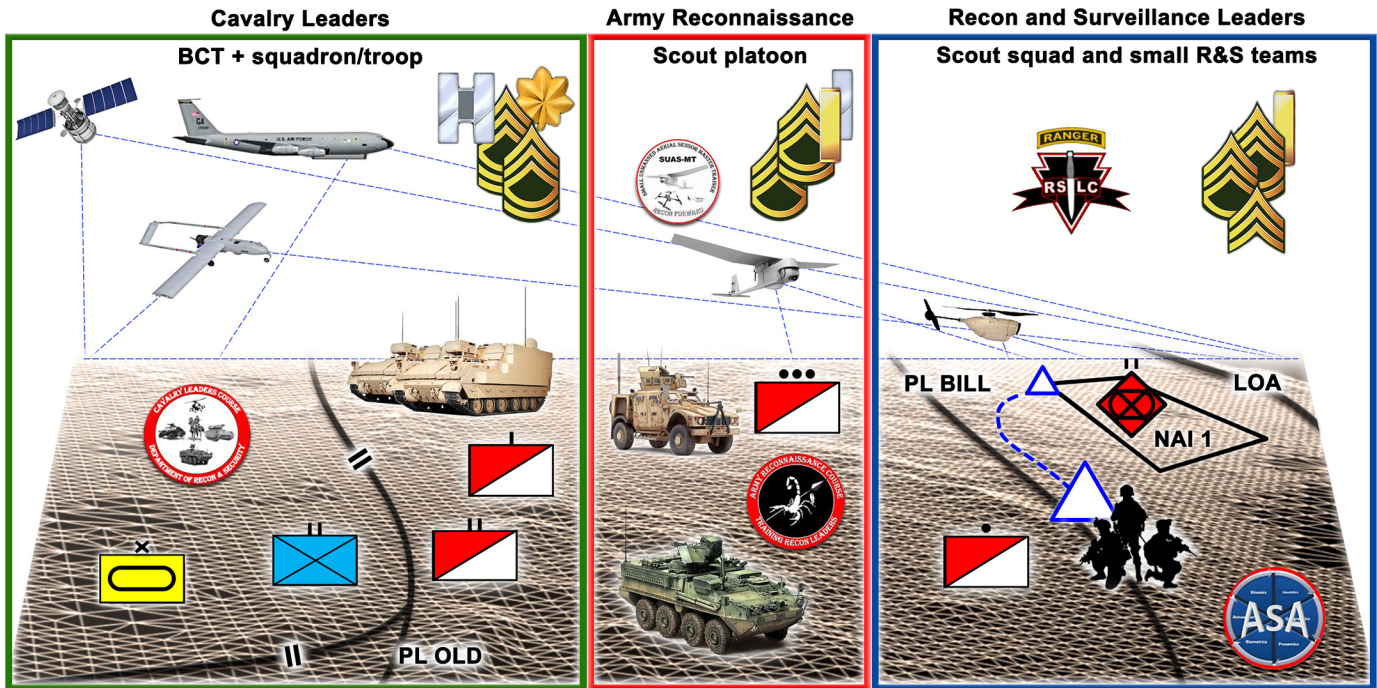


Figure 1. Focus for each R&S course and its nesting with other R&S courses.

More details for R&S courses



SUAS-MT (F7B): Provides brigade-level master trainers the KSAs to train and conduct effective reconnaissance and information

collection; develops proficiency in:

- Advising and assisting with the Aircrew Training Program (ATP);
- Tracking operator currency and proficiency;
- Developing unit-specific tasks based on their mission-essential task list;
- SUAS regulation and guidance.



RSLC (6B): Provides squad-level leaders across BCT types with the KSAs to conduct effective reconnaissance and information collection;

develops proficiency in:

- Detailed understanding of TLPs;
- Long-duration and extended-distance area reconnaissance and surveillance;
- Mission command;
- Insertion and extraction techniques;
- Beyond-line-of-sight (BLOS)

communications (HF, satellite communications (satcom));

- Target identification and acquisition;
- Covert PIR collection + imagery collection/reporting;
- Advanced navigation and route planning.



CLC (C6): Provides troop-and-above-level leaders across BCTs the KSAs to develop troop and squadron plans to conduct effective

R&S ops; develops proficiency in:

- Planning R&S MDMP and rapid decision-making and synchronization process (RDSP) at the troop, squadron and brigade levels;
- Area and zone reconnaissance;
- Security ops: screen, guard, cover;
- Understanding and integrating enablers and intelligence assets;
- Problem-solving and decision-making in a competitive, time-constrained environment.

ARC (R7): Provides platoon-level leaders across BCT types with the KSAs to plan and conduct effective R&S ops;

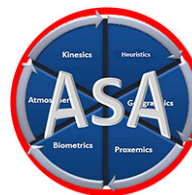


develops proficiency in:

- Planning R&S at the platoon level;
- Route, area and zone

reconnaissance;

- Security ops: screen;
- Basic and advanced land navigation;
- Frequency modulation (FM) and HF communications;
- Problem-solving and decision-making in a competitive, time-constrained environment.



ASA-A/B: Provides squad- and team-level leaders across BCT types with the KSAs to conduct effective critical thinking, problem-

solving and decision-making; develops proficiency in:

- Knowledge of the human sensory system;
- Knowledge of the human-behavior domain;
- Situational understanding.

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the most up-to-date information. Students should also review Field Manual 3-98, **Reconnaissance and Security**, the course prerequisites and packing list prior to arrival. Upon graduation, students will return to their operational units prepared to execute R&S operations to shape the battlefield and improve the operational readiness of our Cavalry enterprise. Keep up the R&S fight on your screen line. Scouts out!

LTC Jeff Barta commands 3rd Squadron, 16th U.S. Cavalry, 316th Cavalry Brigade, Fort Benning, GA, and chairs the Department of Reconnaissance and Security, Maneuver Center of Excellence. Previous assignments include professor of military science, Slippery Rock University Army Reserve Officer Training Corps, Slippery Rock, PA; BCT S-3 observer/coach/trainer (O/C/T) (Bronco 03) for the National Training Center (NTC) Operations Group at Fort Irwin, CA; maneuver task force S-3 O/C/T/

(Scorpion 03), Operations Group, NTC; BCT S-3, 4th BCT, 101st Airborne Division, Fort Campbell, KY; battalion executive officer, 2nd Battalion, 506th Infantry, Fort Campbell and Khost, Afghanistan; maneuver task force S-3 and O/C/T (Warhog03), Ops Group, Joint Multinational Readiness Center (JMRC), Hohenfels, Germany; and company/team O/C/T (Warhog 11), Ops Group, JMRC, Hohenfels. His military education includes the U.S. Army Command and General Staff College, CLC, Armor Captain's Career Course and Armor Officer Basic Course. He holds a bachelor's of science degree in environmental science from the University of Illinois and a master's of science degree in administration from Central Michigan University. LTC Barta also deployed to Operations Enduring Freedom, Iraqi Freedom and Assured Delivery, and has 46 training rotations as an O/C/T at NTC and JMRC. He has been awarded the Bronze Order of Saint George and Gold and Silver Spurs from 1st and 12th Cavalry Regiments.

ACRONYM QUICK-SCAN

ARC – Army Reconnaissance Course
ASA – Advanced Situational Awareness (course)
BCT – brigade combat team
CLC – Cavalry Leader's Course
HF – high frequency
IBCT – infantry brigade combat team
JMRC – Joint Multinational Readiness Center
KSA – knowledge, skills and attributes
LoA – limit of advance
MDMP – military decision-making process
NAI – named area of interest
NTC – National Training Center
O/C/T – observer/coach/trainer
OP – observation post
PIR – priority intelligence requirement
PL – phase line
R&S – reconnaissance and security
RSLC – Reconnaissance and Surveillance Leader's Course
SUAS-MT – Small Unmanned Aerial Sensor master trainer
TLP – troop-leading procedure

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BOOK REVIEWS

From Victory To Stalemate: The Western Front, Summer 1944, C.J. Dick, Lawrence, KS: The University Press of Kansas, 2016, 1,465 pages with maps, photographs, footnotes and bibliography, \$30.52.

From Defeat To Victory: The Eastern Front, Summer 1944, C.J. Dick. Lawrence, KS: The University Press of Kansas, 2016, 1,354 pages with maps, photographs, footnotes and bibliography, \$39.93.

Former British army officer, historian and accomplished author C.J. Dick presents a two-volume work on the operational art of warfare. These works explain why and how the Allied forces of World War II conducted military operations in the closing days of the conflict. Volume 1 deals with the Western Allies – the United States, Great Britain and Canada – and their military operations in France from June to September 1944. Volume 2 addresses the Red Army's actions along the Eastern Front in Summer 1944. The author's purpose is to "put forth broad arguments about the conduct of the war at the operational level – the handling of armies and army groups by both the Western Allies and the Red Army in contemporaneous campaigns."

The two-volume set follows staff-ride methodology by "setting out the operational-strategic context, examining the situation at the start of each operation as perceived by the commanders tasked with its execution, outlining their plans, discussing developments at key points during the evolution of the operation and decisions made in consequence, and evaluating the results and assessing the generalship involved."

These works are not analytic descriptions and discussions of a given battle; rather the author presents event summaries that set the stage for his analysis. He places heavy emphasis on the least understood and most vital subject of logistical planning and support. In developing his theme, Dick reviews

the principals of war, the effect of pre-war doctrine and the educational background of the principal Allied leaders.

As the Western Allies entered World War II, they were "more tactically than operationally minded: they were happier when directing set-piece battles and relying on superior firepower than when conducting inherently less controllable operations that emphasized superior mobility to outmaneuver the enemy into a position where his destruction became certain."

Alone among the Western Allied leaders, GEN George S. Patton practiced the operational art. The author defines this method of warfare as "the sequencing and synchronization by theater, army group and armies of a series of operations and battles conducted by subordinate formations." He further states that "the skill of the operational-level commander lies in using deception, interdiction, operational maneuver, logistic resources and carefully orchestrated battles to structure a successful campaign."

As the author presents his arguments for developing and practicing the operational art, he provides insights on the principles of war, the challenges of command and importance of a staff, and the chain of command in the Allied Expeditionary Forces along with American, British and Canadian approaches to war. Given this solid foundation, subsequent chapters provide insights into the accomplishments, shortcomings and failures of the Allies as they conduct military operations against the Germans in France.

Dick's insightful review of the battles and operations include discussions on the first seven weeks of actions following the successful landing in Normandy, the planning and execution of the breakout from the beachhead and the frustrating Battle of the Falaise Gap. With each battle, the author emphasizes that Field Marshal Sir Bernard Montgomery, leading the British 21st Army Group, and LTG Omar Bradley of the U.S. 12th Army Group, "tended to exercise tight supervision and control,

allowing little room for creativity." Dick notes that several subordinate army commanders "accepted this as right and proper." However, Patton "was inclined to interpret his orders as creatively as possible, exercise initiative and exceed the goals set in his mission."

While the campaign in Western Europe was successful, the author points out that "the campaign became one of hasty improvisations, and these were not always based on a holistic appreciation of the situation and its possibilities. As a result, battles were not always purposefully sequenced and synchronized, and some were fought unnecessarily. The desirability of maneuver in place of attack was frequently ignored, and the dividends to be gained from deep operations were generally passed up in favor of a risk-averse, security-first approach to the exploitation of success."

Throughout his analysis, Dick emphasizes the failure of logistical planning, execution and leadership as the reason for the strategic pause in Allied forward movement by September 1944. The early seizure, for example, of the port of Antwerp was not exploited by securing the Scheldt Estuary passage. The tremendous expenditure of men and materiel by the Canadian army to clear the passageway is relayed in vivid prose by the author. The same holds true for his disdainful remarks on the American Service of Supply system and its leader, LTG John C. Lee.

Whereas the first volume critiques the Western Allied leadership's strategic and operational approach as they executed their mission to "enter the continent of Europe and undertake operations aimed at the heart of Germany and the destruction of her armed forces," the second volume concentrates on the Soviet methods of warfare.

The author is well-versed in Soviet military doctrine and procedures, having been a senior lecturer and director of the Soviet Studies Research Center. In Volume 2, the author discusses the "Soviet articulation, acceptance and

practice of the 'operational art' which distinguished the Red Army's performance in Summer 1944 from that of the armies of the Western Allies. From the standpoint of military art, this conditioned the Red Army's comparative success."

Appreciating that readers may lack an understanding of the structure of the World War II Red Army, Dick provides a detailed guide to Soviet military terms and organizations. Given this foundation, he moves onto to discuss Soviet doctrine before 1944. As he states, "The initial period of the Great Patriotic War cruelly exposed the unrealistic expectations and deficiencies of the Red Army, from leadership through doctrine and organization, equipment and training to

deployment." How Joseph Stalin and his military subordinates reversed this trend so that by 1944 they were masters of the battlefield is clearly brought out by Dick.

The author definitively explains through historical examples the Red Army's "optimal mix of firepower, mobility and staying power to achieve given operational objectives." Charts and tables are presented to support these conclusions.

Given the Russians' deep reserve of manpower and materiel, they "displayed a growing superiority in the conduct of the operational art, which often rendered the adroitness of German units and minor formations inconsequential as they were swallowed up

in vast operational catastrophes." As he reviews the major clashes between the Russian and German forces, one is left wondering how the Germans managed to delay the Soviets for even a brief period of time.

It is worth noting that the author does not compare the Western Allies and the Soviet approaches to warfare. As with any competent war-college instructor, Dick presents his analyzed data that one is free to accept, modify or reject. These two volumes are designed to make the reader think about the manner in which warfare has been and should be conducted. They are impressive works which demand a prominent place in any professional reading library.

RETIRED COL D.J. JUDGE

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.](https://play.google.com/store/apps/details?id=mil.army.gtac)

[google.com/store/apps/details?id=mil.army.gtac](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>.

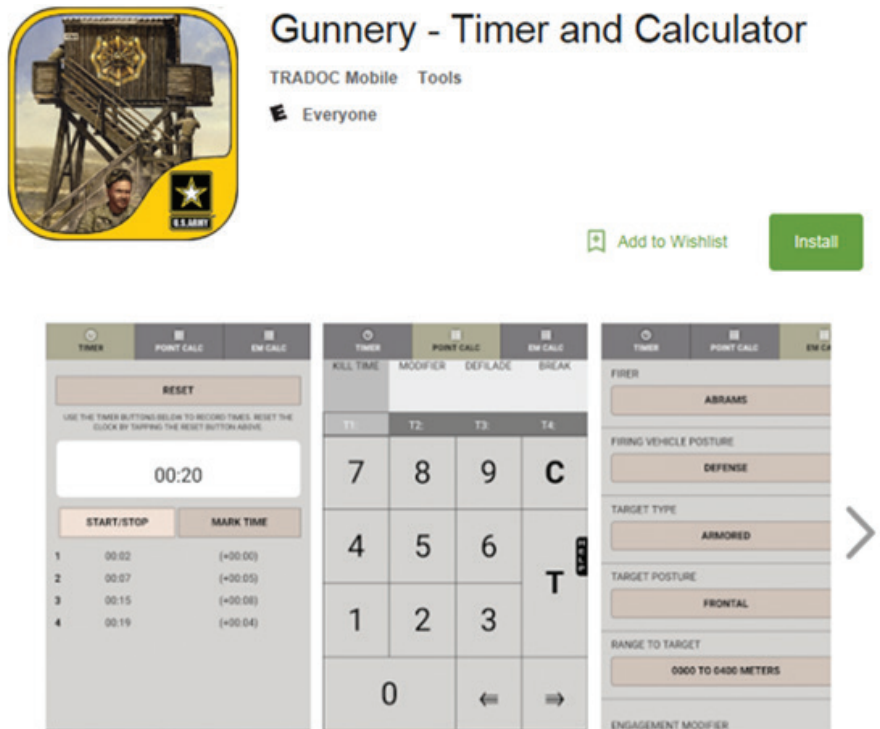


Figure 1. A screenshot from the gunnery application.

77TH ARMOR REGIMENT



The carnivorous tiger is symbolic of the “enemy devouring” qualities of the organization. Unlike the man-eating lion, which only attacks man in his dotage, the ferocious tiger attacks at all ages and at any time; the battle-axe symbolizes the offensive mission of a tank battalion. The motto translates to “Stand To It Stoutly.” The distinctive unit insignia was originally approved for 753rd Tank Battalion June 22, 1942. It was redesignated for 77th Heavy Tank Battalion June 22, 1950. The insignia was redesignated for 77th Armor Regiment Feb. 15, 1962.



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

We are the premier mounted maneuver force comprised of the best trained, best led, best equipped, and most lethal Tankers and Scouts in the world. Soldiers first, we are experts in the art of maneuver warfare; mounted and dismounted reconnaissance and security operations; and the employment of combined arms and joint capabilities on the battlefield.

Armor and cavalry troopers thrive in conditions of ambiguity, uncertainty, and complexity; comfortable away from the main body --- out front or on the flanks --- and decisive when leading it. We operate with a mission command mentality always seeking opportunities to seize, retain, and exploit the initiative; creating and preserving freedom of action for our force while denying the enemy options.

Armor and cavalry leaders combine the superior capabilities of our equipment with the ingenuity of our Troopers to find, fix, close with and destroy the enemies of our nation through combinations of mobility; precise, lethal, and overwhelming firepower; and devastating shock effect.

Armor branch is a team of teams ready to fight and win anytime, anywhere, under any conditions of battle.

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Thunderbolt 7

Thunderbolt 6