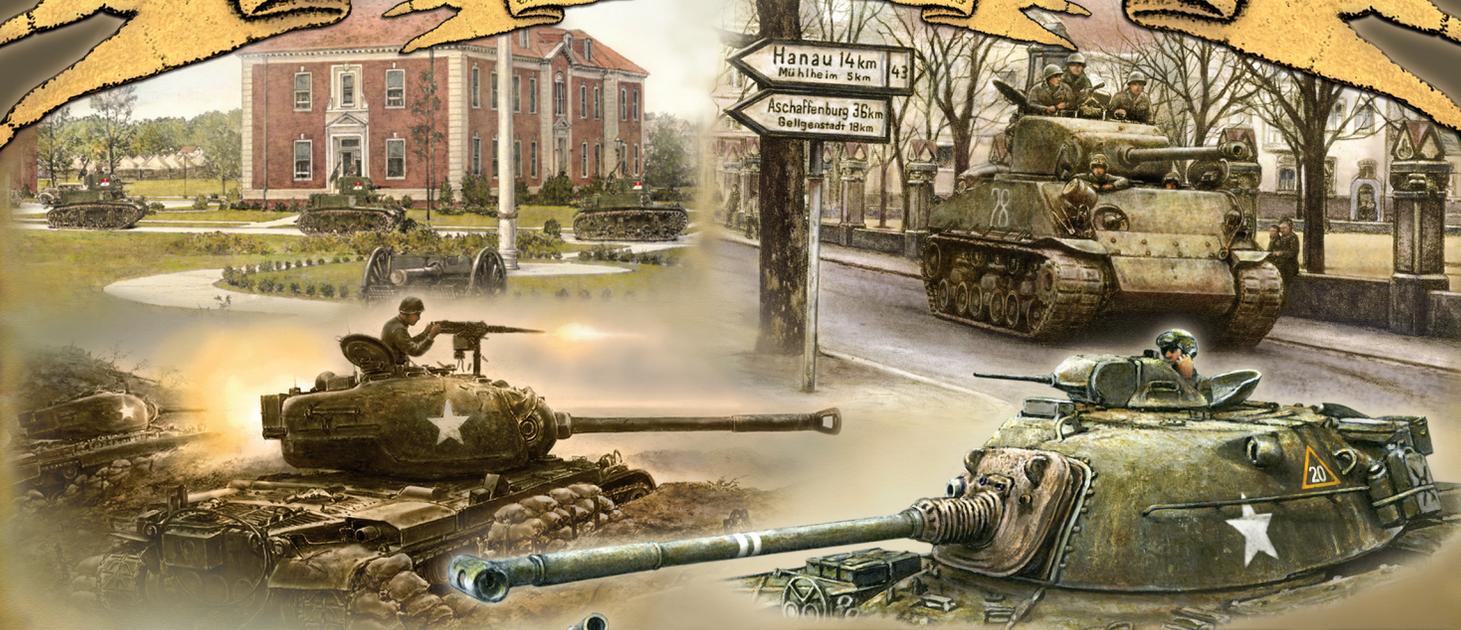


1940 THE ARMORED FORCE 2015

75TH ANNIVERSARY



ARMOR

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July-September 2015



TREAT 'EM ROUGH!

ARMOR

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Redefining and Re-learning the Role of the Cavalry Squadron

With the inception of modularity in 2004, the Army transformed to a brigade combat team (BCT)-centric force to meet the needs of resourcing two theaters of operation. During these wars in Iraq and Afghanistan, our Army operated within a division construct but essentially as BCT and battalion independent stability operations. This was most likely an appropriate decision to sustain 14 years of continuous actions; however, institutionally we lost many organizational procedures and processes that were in place to ensure accountability of readiness, training and maintenance management, and decisive-action skillsets.

Today, as we transition institutionally out of these wars, the Army is striving to regain our decisive-action or high-end combat-operation competencies while retaining the lessons of the last 14 years. With the Army Operating Concept guiding our efforts, the Maneuver Center of Excellence is re-evaluating "how we fight" within the context of the future complex environment.

The central idea of "how we fight" is based on formations that can continuously develop situational understanding; rapidly task-organize for purpose; and operate within the joint, inter-organizational and multinational environment to achieve positions of relative advantage and consolidate gains.

Continuously developing situational understanding (SU) and consolidating gains are at the core of our reconnaissance and security operations, and thus the Cavalry squadron should be optimized to meet this requirement.

Cavalry squadrons have been employed as battlespace owners over the last decade, and observed trends from combat training centers demonstrate a significant degradation in our knowledge and abilities to conduct reconnaissance and security operations. Field Manual 3-98, **Reconnaissance and Security Operations**, published in July 2015, provides a doctrinal base for reconnaissance and security operations at the BCT level and below, and is a good foundation for leader-development programs to re-establish competencies. The Cavalry squadron is critical to develop continuous situational understanding – whether fighting for information within its means, developing SU by engagement with multinational forces and organizations or interacting with civilian populations. The skillsets required to operate within this construct requires us to reassess our training and development of our Soldiers. This effort is deemed as the scout-of-the-future concept, where fundamental reconnaissance and security skills, cultural understanding, language proficiency and regional expertise must be developed

from accession and throughout a scout's career.

As important as our ground reconnaissance and security operations are, Cavalry interoperability with air assets is critical. The AH-64 is now the primary rotary-wing reconnaissance platform, and in this role, we need to develop how we employ the platform as part of reconnaissance and security operations. We should not think of them as air-weapons teams that respond to troops in contact, although the armed capability and our experience in Afghanistan and Iraq will drive scouts in that direction. The former division Cavalry organizational structure may offer insights, but we have yet to define how we organize the division battlespace given the lack of assets remaining at that echelon. Manned and unmanned teaming should be a central theme in the concept of employment, especially with the addition of the Grey Eagle unmanned aerial system.

Interoperability between BCT types is an essential element of task-organizing for purpose. However, our Cavalry squadrons are on multiple platforms that are not conducive to interoperability for communications and situational awareness. The Joint Light Tactical Vehicle (JLTV) is the primary candidate for the interim Light Reconnaissance Vehicle for the infantry BCT. However, the JLTV cannot carry six

scouts and therefore must be organized with nine vehicles per platoon. An alternative for the interim platform is the Stryker Reconnaissance Vehicle (RV); the RV provides room to accommodate the 6x36 scout platoon and would be interoperable with Stryker BCT Cavalry squadrons, as well as with some Special Operations Forces that employ a similar platform. Also, by fielding a common platform, task-organization for purpose is facilitated, and future initiatives such as the 30mm and Remote Weapon Station-Javelin could address lethality shortcomings found in the infantry BCT.

There are plenty of counterarguments such as size of the vehicle, logistical requirements and so on, but I would argue these will all be inherent in any other platform currently being considered. Interoperability, lethality and mobility are the key parameters in our future Cavalry squadrons, and the Stryker RV provides a viable solution now that does not require development (acquisition) and optimizes these

operating characteristics.

We look forward to hearing your thoughts on redefining and relearning the role of our Cavalry squadrons. Reconnaissance and security remains the core mission, but how we execute and how we are organized in the future complex environment needs more development. Further, as technology continues to evolve, the Cavalry squadron's ability to employ manned and unmanned teaming to extend its reach – coupled with an increased capability to link into lethal targeting assets – clearly demonstrate the mandate to revise doctrine and leader development.

Finally, I want to personally thank CSM Mike Clemens on his superb tenure as the Armor School command sergeant major. His dedication to the Armor and Cavalry force has been significant, and he truly leaves an indelible legacy in his role of Forging the Thunderbolt!

Treat'em Rough!

Acronym Quick-Scan

BCT – brigade combat team
JLTV – Joint Light Tactical Vehicle
RV – reconnaissance vehicle
SU – situational understanding

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



Contributions of the Armored Force

The U.S. Army's Armored Force has been the combat arm of decision since CPT George Patton first reported to the American Expeditionary Force's Tank Corps commander, COL Samuel Rockenbach, in 1918. Although the tank of World War I was slow, clumsy, unwieldy, difficult to control and mechanically unreliable, its value as a combat weapon had been clearly proven in action, where it restored mobility to the battlefield and drove home the firepower and shock effect that would become the corps' hallmarks.

The performance of the Tank Corps during World War I was so valuable that the American Expeditionary Force's commander, GEN John J. Pershing, penned a personal letter to then-BG Rockenbach praising its splendid work and gallant record. He wrote in part: "Its history in active operations, though short, is a bright and glorious one. In both the American offensives at St. Mihiel and Meuse-Argonne of the First American Army, it was a material assistance in the advance. In the breach of the Hindenburg Line with the British near La Catelet, it also won glory. The high percentage of casualties among the officers and men tells the tale of splendid morale and gallantry in action of your personnel and of the unselfish devotion to duty."

Clearly, the men of the Armored Force had proven their worth and established a benchmark for those who would follow.

With the formation of the Armored

Force July 10, 1940, BG Adna Chaffee took control of all tank units that had been part of both the Infantry and Cavalry Branches. Pioneering the use of armor as a highly mobile force capable of penetrating and exploiting enemy weak points, the formation of an Armor Branch also allowed for the expansion of the force as the Army federalized National Guard units and began drafting eligible males.

Combat operations would soon follow. Early during American involvement in World War II, the activated National Guard tankers of 192nd Tank Battalion were ordered to defend the Philippines during the Japanese invasion and participated in the first tank-on-tank combat of the war. A tank platoon led by LT Ben R. Morin was ordered to move north from the town of Damortis, when on Dec. 22, 1941, the platoon of M3 Stuarts ran into Japanese Type 95 light tanks from the Imperial Japanese Army 4th Tank Regiment. In the ensuing tank-on-tank battle, the lead 192nd tank immediately left the road to maneuver but was hit and caught fire. The remaining four Stuarts also received hits but withdrew from the field, only to later be destroyed by enemy aircraft. Morin was wounded, and he along with his crew were captured. The 192nd continued to skirmish with 4th Tank Regiment as they retreated toward Bataan.

Tank losses during the fighting required the reorganization of some units. Consequently, tank companies were reorganized into 10 tank

companies with three tank platoons, and one tank for the company commander. During the remaining struggle for Bataan, the tank battalion defended the beaches and the airfield, and provided support for the infantry until April 8, 1942, when the 192nd received orders to prepare to destroy their M3s. Upon receiving the code word "Crash," the crewman destroyed their remaining tanks and the U.S. Army and its allies on Bataan surrendered April 9, 1942.

Though not initially successful, the Armored Force would continue to grow, eventually incorporating more than 89,000 tanks into 16 divisions and 118 separate tank battalions and participating in virtually every campaign during World War II.

Just five years later, the Armored Force would be called on again, participating in the defense of our South Korean allies. Often individual tank platoons and companies, working in conjunction with the infantry, would make the difference between a successful mission and being overrun by enemy forces. An early example is the "Battle for the Bowling Alley" in August 1950, where Company C, 73rd Tank Battalion, was attached to 27th Infantry and defended a narrow valley north of Tabudong, Korea.

The approaching North Koreans had been first spotted near Ch'onp'yong, 800 yards forward of 27th's lead elements. The commander of the

attached C/73rd Tank Battalion overheard the enemy advance and deployed two of his M-26 tanks onto the road. Three other tanks stayed in a streambed that was more or less at a right angle to the road. Another four or five tanks were in a column farther back, each about 75 yards apart.

The lead T-34 stopped and fired. Its first round was 25 yards short. The second round set a U.S. truck on fire. The light of the burning vehicle revealed an enemy tank about 300 yards from the American tanks, accompanied by infantrymen in the ditches. Two North Korean People's Army tanks following the first opened up on the M-26s to the rear, but the leading M-26 returned fire with a 90mm high-explosive round, striking the leading T-34's front plate. This was followed by five high-velocity armor-piercing rounds, which destroyed the enemy

tank. The three M-26s in the stream then joined the duel.

The combined efforts of the tankers, infantrymen and well-placed artillery carried the day and caused one infantryman to remark: "The North Koreans never stood a chance, despite their numbers and heavy armor. Our artillery, tanks, mortars and machineguns proved too much for them as they tried to come south through the gauntlet we had set up."

In perspective, though, more important than the campaigns the Armor Branch has participated in while committed to the places mentioned, or in Lebanon, Vietnam, Panama, Desert Storm, Afghanistan and Iraq, are the people who came out of the Armored Force. Household names such as Patton (both father and son) and Abrams – as well as those who would

shape, train and lead the Army such as Walker, Starry, Sullivan, Franks and Shinseki – have left an indelible mark. Also, four sergeants major of the Army and the first senior-enlisted adviser to the Chairman of the Joint Chiefs of Staff have been Armor Branch Soldiers, with an impact on generations of young men and women. The combat arm of decision has always been about teams of amazing and innovative people who have truly made a difference in our Army.

In closing, this is my last **ARMOR** article as the command sergeant major of the Armor School. It has been a remarkable job and a rewarding experience, and I am proud to have been counted among Cavalry and Armor Soldiers. Thank you for your support and Scouts Out!

FROM THE SCREEN LINE

Understanding Reconnaissance Missions Instead of Focusing on Reconnaissance Platforms

by CPT Kyle Hoisington

The world of reconnaissance-and-security missions is vague to a lot of Soldiers and leaders despite no significant changes over the years. However, the platforms scouts use to conduct their missions vary greatly among the different brigade structures (armored brigade combat team (BCT), infantry BCT and Stryker BCT). Commanders should not look at the platform to determine a certain mission. How scouts conduct a reconnaissance mission is not formed by their platform. The scout's mission is formed through detailed commander's reconnaissance guidance. The argument that dismounted scouts conduct different reconnaissance missions than tracked-vehicle scouts is invalid. The platform in which scouts move about the battlefield does not have as much of an impact on their mission as the commander's reconnaissance guidance.

This article will assist in creating an understanding of the five reconnaissance missions and how multiple reconnaissance platforms are used. For purposes of this article, reconnaissance platforms are described as types of platforms scouts use when conducting reconnaissance missions.

Reconnaissance missions

To understand how commander's reconnaissance guidance impacts a reconnaissance mission more than the platform scouts use, we must have a common understanding of the forms of reconnaissance. Army Doctrinal Reference Publication (ADRP) 3-90 identifies the five forms of reconnaissance as *route*, *area*, *zone*, *reconnaissance-in-force* and *special*.

Route reconnaissance is a directed

effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along the route (ADRP 3-90). Route-reconnaissance missions can focus on either terrain or enemy template to influence a route. When focusing on the route's terrain, commanders may want to know how to move their maneuver forces from the line of departure to their objective. When focusing on the enemy that influences the route, a route-reconnaissance mission inherits more risk. A commander must determine if the scouts' organic capabilities are enough to reduce the risk associated with an enemy-focused route reconnaissance.

Area reconnaissance focuses on obtaining detailed information about the terrain or enemy activity within a prescribed area (ADRP 3-90). An area is commonly described graphically as a named area of interest (NAI) and can also be graphically described as a checkpoint. NAIs can encompass a large surface or a specific point. This is due to the amount of, or lack thereof, mission analysis the staff conducts in developing the area of interest.

Zone reconnaissance involves a directed effort to obtain detailed information on all routes, obstacles, terrain and enemy forces within a zone defined by boundaries (ADRP 3-90). A zone reconnaissance allows subordinate leaders to look everywhere within their boundaries for the priority intelligence requirements (PIR). This differs from area and route reconnaissance because during a route- or area-reconnaissance mission, the higher headquarters is directing the information-collection asset to look at a specific area. During a zone reconnaissance, the understanding of the area of operations is usually more ambigu-

ous, which requires subordinate leaders to take more initiative.

Reconnaissance-in-force is a deliberate combat operation designed to discover or test the enemy's strength, dispositions and reactions or to obtain other information (ADRP 3-90). A reconnaissance-in-force is a mission that requires more protection for the scouts due to enemy direct-fire contact that is required to test the enemy's reactions.

A reconnaissance-in-force differs from an enemy-focused zone reconnaissance for several reasons. A reconnaissance-in-force is solely enemy-focused, whereas a zone reconnaissance may focus on terrain or civil-based PIR. The intent of a reconnaissance-in-force is to discover a weakness in the enemy's formation to allow a main body to exploit the weakness. This differs from an enemy-focused zone reconnaissance, where the intent is to determine size and location to allow the main body to conduct offensive operations.

Special reconnaissance is reconnaissance and surveillance actions conducted as a special operation in hostile, denied or politically sensitive environments to collect or verify information of strategic or operational significance employing military capabilities not normally found in conventional forces (ADRP 3-90). Special reconnaissance will not be addressed in this article because Cavalry formations found in the BCTs do not organically conduct special reconnaissance.

Insertion methods

There are multiple ways scouts use reconnaissance platforms when conducting a reconnaissance mission. Several of the methods include air insertion, dismounted insertion, wheeled-vehicle

insertion and tracked-vehicle insertion. All these methods of moving scouts to their reconnaissance objective are found in ABCTs, IBCTs and SBCTs. There are major differences in mobility from one platform to the other. However, each platform is only the way scouts are moved from their line of departure to their reconnaissance objective. The actions on the reconnaissance objective are the same among all reconnaissance platforms.

When most people think of scouts, they first think of stealth. This is a common trend throughout the dismounted formations and even in some of the wheeled-vehicle formations. Other people think of scouts as having large amounts of protection to survive first contact and are able to send reports under direct-fire contact. This trend is common in some of the wheeled-vehicle formations but predominantly in the tracked-vehicle formations.

I tend to look at the different types of platforms on a scale (Figure 1). On one end of the scale is the air and dismounted method, with the wheeled-vehicle method in the middle and the tracked-vehicle method on the far end of the scale. Along the same scale, stealth is directly correlated with the air and dismounted method, and protection is correlated with the tracked-vehicle method. I use this scale to visualize how scouts would execute any of the reconnaissance missions. By using this scale, there is some kind of stealth associated with wheeled vehicles, while there is some kind of protection with tracked vehicles. Of course, the mission variables play a role when identifying which type of platform can best conduct a form of reconnaissance. Given this basic analysis, it is reasonable to state that each type of platform can conduct each form of reconnaissance as long as the scout is given more guidance on how to use his

particular platform. This additional guidance is given in the form of *commander's reconnaissance guidance*.

Recently, the development of the 6x36 scout platoon has given more abilities in each formation to allow a combination of both stealth and protection in each of the platforms. With 18 dismounted scouts in a tracked-vehicle formation, the tracked-vehicle scout platoon can combine both stealth with protection based on mission variables. This further builds on the statement that all types of formations can conduct all forms of reconnaissance with analysis of mission variables.

Commander's reconnaissance guidance

Cavalry squadron and Cavalry troop commanders communicate their intent for each phase of the operation through commander's reconnaissance guidance. When scouts execute a reconnaissance mission, they look at the six parts to commander's reconnaissance guidance: *focus, tempo, engagement criteria, disengagement criteria, displacement criteria and bypass criteria*. To understand how commander's reconnaissance guidance plays an important role in shaping a reconnaissance mission, we must have a common understating of what commander's reconnaissance guidance is.

Focus gives the scout guidance about what information gaps are in the plan and what information is important to report. Focus guides the scout when conducting the reconnaissance mission so the scout can know what type of information is most important to the mission. It also allows the subordinate leader to know what kind of risk is involved with the mission. For example, threat-focused reconnaissance involves more risk to the scout than a

terrain-focused reconnaissance mission.

Tempo directly relates to the operational timeline and tells the scout how quickly to conduct the reconnaissance mission. Tempo is described by four terms: *rapid* or *deliberate*, and *stealthy* or *forceful*. *Rapid* and *deliberate* refer to the amount of information the scout must collect within a reconnaissance objective. Either the scout will take a lot of time (deliberate), or the scout will spend a very short amount of time (rapid) collecting information within the reconnaissance objective.

Stealthy or *forceful* refer to the amount of time it will take the scout to move from one reconnaissance objective to another. Either the commander wants the scout to move slowly and covertly (stealthy), or the commander wants the scout to move as quickly as possible (forcefully). Looking at Figure 2, rapid or deliberate are (A), while stealthy or forceful are (B).

There is not a set amount of time associated with any of the four terms. Therefore, the commander can dictate through a timeline the precise time the scout should collect information and when the scout should move.

Engagement criteria establishes which targets the scout is expected to engage with direct and/or indirect fires (Field Manual (FM) 3-20.971). Engagement criteria should establish which weapon system to use when engaging those specified targets. The terms *aggressive* and *discreet* are clearly defined in FM 3-20.971, but even then, those definitions are open to interpretation. Engagement criteria are also clearly defined by answering how the scout will engage the target, how the scout will synchronize fires with other scouts and rules of engagement.

Disengagement criteria keeps the

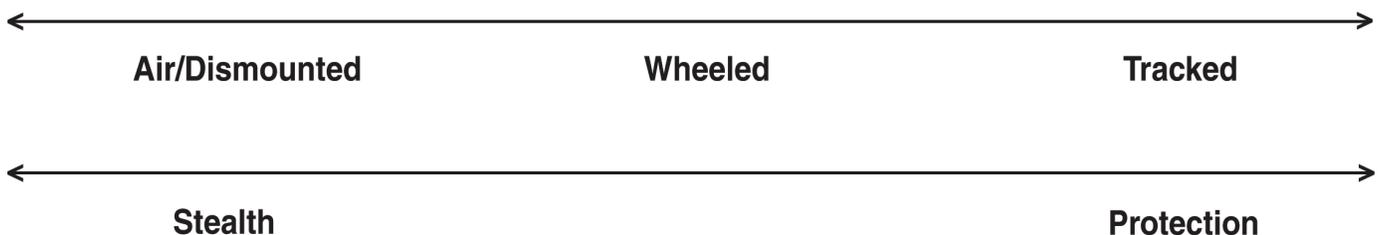
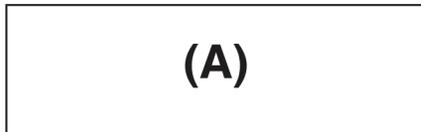


Figure 1. Scale of reconnaissance platforms.

NAI 1

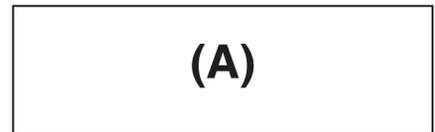


| On | Timings Off | LTIOV |
|------|----------------|-------|
| 0800 | 1200 | 1300 |

(B)



NAI 2



| On | Timings Off | LTIOV |
|------|----------------|-------|
| 1430 | 1500 | 1500 |

Figure 2.

scout from being decisively engaged. This is the point at which the commander has identified that the scout should not continue to engage the target. Disengagement criteria are solely enemy-based and not time-based. Disengagement criteria are often mistaken with displacement criteria, but the two criteria are completely different. Disengagement from the enemy commonly leads to displacement from the scout's position.

Displacement criteria are the event or time trigger for when a scout should move from one reconnaissance objective to another reconnaissance objective to continue the mission. The movement can be forward, backward or lateral. When disengagement leads to displacement, the scout's movement is usually in the direction of the main body to create space and lead to a rearward passage of lines.

Bypass criteria are established by the commander to inform the scout which information has priority of collection. For example, the commander may need to know about the specific aspects of the terrain before engaging enemy scouts. Therefore, the commander would tell the scouts to bypass enemy scouts until the PIR is confirmed about the terrain.

Commander's reconnaissance guidance should be developed before deciding what form of reconnaissance is being conducted. The differences in the criteria and focus could mean a difference between a zone reconnaissance and a reconnaissance-in-force. Identifying how much risk is associated with the reconnaissance mission

through the focus allows the subordinate leader to plan how many observation posts to emplace, additional assets to request and the scheme of maneuver. The amount of risk is greatly reduced by informing the scouts of their actions on contact through engagement and disengagement criteria and the speed at which to move. With this detailed guidance, the scout can use any type of platform and still collect the information needed.

Conclusion

The importance of detailed commander's reconnaissance guidance cannot be overstated. By developing this guidance, the scout understands how to conduct actions on the reconnaissance objective. If leaders reduced the amount of time spent on attempting to figure out how to employ a specific platform and spent their time on giving detailed commander's reconnaissance guidance, subordinate leaders would have a better understanding of their assigned mission. Success does not come from how a scout moved from the line of departure to the reconnaissance objective. Actions on the reconnaissance objective make scouts successful during a reconnaissance mission.

CPT Kyle Hoisington is course manager/instructor for Cavalry Leader's Course (CLC), 3-16 Cavalry, Fort Benning, GA. He previously served as commander, Troop B, 1-10 Cavalry, 2nd ABCT, 4th Infantry Division; assistant S-3 plans officer, 1-10 Cavalry; assistant S-3 current operations, Headquarters and Headquarters Company, 2nd ABCT, 4th Infantry Division; executive officer,

Troop K, 3rd Squadron, 3rd Armored Cavalry Regiment (ACR); and platoon leader, Troop L, 3rd Squadron, 3rd ACR. CPT Hoisington's military education includes Airborne School, Armor Officer Basic Course, Maneuver Captain's Career Course, CLC and Joint Firepower Course. He holds a bachelor's of science degree in criminal justice from University of Central Missouri and is a recipient of the Bronze Star (one oak-leaf cluster).

Acronym Quick-Scan

ABCT – armored brigade combat team
ACR – armored Cavalry regiment
ADRP – Army doctrinal reference publication
BCT – brigade combat team
CLC – Cavalry Leader's Course
FM – field manual
IBCT – infantry brigade combat team
LTIOV – latest time the information is of value
NAI – named area of interest
PIR – priority intelligence requirement
SBCT – Stryker brigade combat team

ARMOR BRANCH UPDATE

Broadening the BRO: an Innovative Approach to Broadening Experiences within the Big Red One

by MAJ David Niederauer

After graduating from the U.S. Marine Corps Command and Staff College in Summer 2014, I was assigned to 1st Infantry Division, Fort Riley, KS, and was selected to serve in an internally created broadening assignment. This broadening assignment was the result of an initiative by MG Paul E. Funk II, commanding general of 1st Infantry Division, to create opportunities for select field-grade officers within the division to gain experience working on operational and strategic challenges and to prepare these officers for future senior leadership positions. During this internal broadening assignment, I worked for the division G-1 as the officer-in-charge (OIC) of the Big Red One's (BRO) newly formed BRO-Soldier for Life (SFL) Team.

The purpose of the BRO-SFL Team is to synchronize efforts between 1st Infantry Division and Fort Riley's SFL stakeholders and to make decisions related to the BRO/Fort Riley SFL Program. MG Funk's intent for the BRO-SFL Team is to increase synchronization among all SFL stakeholders, enhance the BRO/Fort Riley SFL Program and prepare Soldiers to transition to civilian life – ready to obtain employment, education, health care and living accommodations.

As an Armor officer, I have served in maneuver assignments at the battalion level and below for the past 15 years. Prior to my assignment to the BRO-SFL Team, I knew very little about the Army's SFL Program and the evolution of the Army Career and Alumni Program to the SFL-Transition Assistance Program (SFL-TAP). Although I was aware of transition, I had not considered the challenges the Army is experiencing with strength reductions and preparing Soldiers to transition to civilian life.

Prior to this broadening assignment, I was concerned with learning how to become an operations officer, and later, an executive officer at the battalion and brigade levels. Transition was a general concept in the back of my mind – an event occurring at the end of service in the Army. I did not have an appreciation or conscious recognition that service in the Army does not last forever. All Soldiers will eventually leave the Army and transition to civilian life. Planning and preparation for this inevitable process must occur long before the decision to leave the Army is made.

The opportunity to work outside of my maneuver training and experience provided me with a new perspective on one of the Army's strategic challenges: educating and preparing Soldiers for their inevitable transition from the

Army. I also gained experience working on a division staff that was conducting simultaneous operations at Fort Riley, Kuwait and Iraq in support of Operation Inherent Resolve. Also, I gained insights into the operations of the Fort Riley garrison and the coordinating efforts between the garrison headquarters and the division headquarters.

Lessons-learned

Overall, I will take the following experiences gained from this broadening assignment with me to future assignments.

- **Transition mindset.** One of MG Funk's imperatives states: "The Army is a people business." Transition is also a people business, and I discovered that a cultural change must occur within the Army regarding how Soldiers and



Figure 1. MSG Mitch Hanson, BRO-SFL Team NCO in charge, conducts a BRO-SFL leader-training session with the officers and NCOs of 1st Infantry Division's Sustainment Brigade. (Photo by Amanda Kim Stairrett, 1st Infantry Division Public Affairs Office)



Figure 2. MAJ David Niederauer, BRO-SFL Team OIC, conducts a BRO-SFL leader-training session with officers and NCOs from 1st Infantry Division Sustainment Brigade. (Photo by Amanda Kim Stairrett, 1st Infantry Division Public Affairs Office)

leaders think about transition. Transition must be communicated and reinforced by leaders as a developmental process that occurs early and often throughout all Soldiers' active service rather than compartmentalizing transition as an event that occurs at the end of service.

Similar to the Army operations process, all Soldiers must plan, prepare, execute and continually assess transition plans throughout their service. As part of the Soldier lifecycle, the Army has recognized the need for Soldiers to plan and prepare for their eventual transition to civilian life. The Army has created the individual development plan (IDP) for Soldiers to set and achieve civilian education and career goals, along with military education and career goals, throughout their service on active duty. The IDP should be established at a Soldier's first permanent assignment and should be

reviewed and updated with Soldiers and their first-line leaders. The IDP should also be periodically reviewed by the Soldier's chain of command.

Change and transition are constant in the Army. Soldiers continually change jobs, rank, units and duty stations. Internalizing a transition mindset helps Soldiers and leaders plan and prepare for the inevitable process of transitioning from the Army into civilian life.

- **Networking.** Another one of MG Funk's imperatives states: "A good idea only becomes great when it is shared." Personally meeting, interacting with and getting to know command teams, OIC / noncommissioned officers (NCOs) in charge, program managers, directors and other stakeholders is an essential component of taking a program from concept to execution. It is easy to think and plan in isolation from other

agencies and individuals who own and control required resources. Initially, networking was a challenge for the BRO-SFL Team because we were coordinating with a diverse group of division and garrison agencies and military and civilian organizations. In several instances, we reached out to other agencies, employers and educational institutions to develop relationships that did not previously exist. Networking fosters relationships. Relationships foster trust. Trust fosters unity of effort. Unity of effort fosters mission accomplishment.

- **Unity of effort.** Another change that must occur is an organizational mindset of collaboration and unity of effort among stakeholders. I discovered that many of the relationships and communication networks among the division and Fort Riley garrison agencies either

did not exist or did not promote a broader collaborative team effort. An unconventional approach to achieve the desired organizational change was moving the BRO-SFL Team from the G-1 office in the division headquarters into an office in the Fort Riley SFL-TAP Center.

Working in the SFL-TAP Center allowed the BRO-SFL Team to directly collaborate and partner with the SFL transition-services manager (TSM) and SFL-TAP staff. This move allowed the BRO-SFL Team to develop a close relationship with the TSM, get his recommendations and buy-in for BRO-SFL Team initiatives, and delineate areas of responsibility and ownership between the BRO-SFL Team and the larger collective effort. Working in the SFL-TAP Center also allowed the BRO-SFL Team to observe and attend SFL-TAP briefings, workshops and networking events, and provided the BRO-SFL Team with a comprehensive understanding of TAP. Also, the close relationship between the BRO-SFL Team and the SFL TSM facilitated a broader working relationship that included the education-services officer and the director of human resources.

- **Communication:** Communication is a critical component of any job. Because the BRO-SFL Team was a new initiative, there were few guiding policies or documents that existed prior to developing the program. As the BRO-SFL Team OIC, I struggled with recognizing when to ask for guidance and help while developing the program. Understanding that I was responsible for problem-solving and mission accomplishment, I missed many opportunities to have developmental conversations with my boss and other key members of the collective effort because I felt I should have the answers or recommendations for program initiatives.

I realized that it is often necessary to revisit the problem, ask questions and recommend new approaches to developing solutions. As we developed the BRO-SFL Program, I recognized more opportunities to develop, refine or abandon initiatives and to work

smaller-scope to larger-scope ideas to gain a better understanding of what was suitable for our Soldiers and our program.

I will incorporate the experiences of this broadening assignment into my next assignment as a battalion-operations officer. To facilitate communication and understanding within the team, I will ensure that staff products and briefs include clearly defined purposes and outcomes and that all tasks are delineated and understood. A learning and growing organization requires continuous assessment of the problem and approaches for solving the problem. Also, organizations should continually assess whether they have the right people bringing the right assets to the team; sometimes more people and resources are not better. I discovered the value of networking with other staff sections, units and agencies to promote the team's collective expertise and to leverage available resources within and outside the organization to accomplish the mission.

Way ahead

Recommendations for improving this internal broadening assignment and the BRO-SFL Team include continuous efforts to communicate, plan and synchronize operations among the BRO-SFL Team, division and garrison leaders and all SFL stakeholders. The BRO-SFL Team made consistent improvements in these areas, especially after we began operating in the SFL-TAP Center. However, communication, planning and synchronization among stakeholders are challenges that require regular attention.

Another area of improvement is the ongoing need to inform and educate Soldiers and leaders on the SFL Program and how this program directly applies to all Soldiers. Overall, there is a lack of awareness and understanding of what SFL is and why planning and preparation for transition are important for all Soldiers. Also, messaging and consistently communicating program events and outcomes through SFL-TAP, Army Community Service, Education Services, unit chains of command and social media are areas that require continuous effort.

A final area of improvement is the

need for the BRO-SFL Team to expand its efforts to reach out to command teams and include them in the planning and execution of BRO-SFL leader training. An assessment of the first training sessions the BRO-SFL Team conducted with all leaders across the division revealed the need to include command teams in the planning and execution of training. SFL is a commander's program, and command teams should participate, provide guidance and intent, and have the ability to tailor training to their unit's needs. Involving command teams in the planning and execution of BRO-SFL leader training promotes a top-down approach that fosters buy-in and ownership at command echelons and complements the bottom-up approach of training individual Soldiers on the BRO-SFL Program.

Conclusion

This broadening opportunity challenged me and pushed me beyond my comfort zone by forcing me to work outside of the systems and equipment familiar to me. This experience forced me to continually evaluate my critical-thinking skills, communication skills, leadership and approach to problem-solving and mission accomplishment. Never before have I been responsible for developing a division-level program from a concept and for convincing a large and diverse group of military and civilian stakeholders that this program is important and that they should commit time and resources to it. I am thankful for MG Funk's vision to create broadening opportunities within 1st Infantry Division and for the mentorship and development I received from the division G-1. This broadening experience provided me with personal and professional growth that I will take with me to my future assignments.

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Regiment, 194th Armored Brigade, Fort Benning; operations officer, 3rd Battalion, 81st Armor Regiment, 194th Armored Brigade, Fort Benning; and commander, Company D, 1st Battalion, 5th Cavalry Regiment, 2nd ABCT, 1st Cavalry Division, Fort Hood. MAJ Niederauer's military schooling includes U.S. Marine Corps Command and Staff College, Maneuver Captain's Career Course, Armor Officer Basic Course, Officer Candidate School, Ranger School and Airborne School. He holds a bachelor's of science

degree in psychology from Emporia State University, a master's of science degree in exercise science from Emporia State University and a master's in military science degree in military studies from Marine Corps University. His awards and honors include the LTG John A. Lejeune Award from the Marine Corps' Command and Staff College, Draper Armor Leadership Award and Order of Saint George Bronze Medallion.

Acronym Quick-Scan

ABCT – armored brigade combat team
BRO – Big Red One
IDP – individual development plan
NCO – noncommissioned officer
OIC – officer in charge
SFL – Soldier for Life
TAP – Transition Assistance Program
TSM – transition-services manager

Jennings Wins 2015 Starry Competition

MAJ Nathan A. Jennings has been named winner of the 2015 Starry Writing Competition for his essay, "Balancing the Combined-Arms Force."

Jennings, currently a student at Command and General Staff Officer's Course (CGSOC), is a frequent contributor to **ARMOR** magazine. In addition to this edition, his work has recently appeared in the January-March 2015, July-September 2014 and January-February 2014 editions.

Before CGSOC, Jennings was an instructor in the U.S. Military Academy's history department, West Point, NY; commander, Headquarters and Headquarters Troop, 4-9 Cavalry, 2nd Brigade Combat Team (BCT), 1st Cavalry Division, Fort Hood, TX; commander, Troop C, 4-9 Cav, 2nd BCT, 1st Cavalry Division, Fort Hood and Kirkuk, Iraq (deployed 2009); platoon leader, Company B, 1-34 Armor, 1st Brigade, 1st Infantry Division, Fort Riley, KS, and Baghdad, Iraq (deployed

2006-2007); and 19D Cavalry scout, 2-2 Armored Cavalry Regiment (Light), Fort Polk, LA. His military schooling includes Maneuver Officer Basic Course, Maneuver Officer Advanced Course, Cavalry Leader's Course and Air Assault and Airborne schools. Jennings holds a bachelor's of arts degree in history from Northwestern State University of Louisiana and a master's of arts degree in history from the University of Texas at Austin.

The competition is named for GEN Donn A. Starry, former commander of U.S. Army Training and Doctrine Command and "father" of the AirLand Battle concept. As outlined in the March-June 2014 edition of **ARMOR** (http://www.benning.army.mil/armor/eARMOR/content/issues/2014/MAR_JUN/Mar-Apr14_Web_version.pdf), the competition "evaluate[s] and recognize[s] outstanding writers from across the Army who demonstrate clarity and vision about the future of the mounted force."



Figure 1. MAJ Nathan A. Jennings.

Acronym Quick-Scan

BCT – brigade combat team
CGSOC – Command and General Staff Officer's Course (formerly known as Intermediate-Level Education)

Jennings' Starry-winning entry starts on the next page.

Balancing the Combined-Arms Force

by MAJ Nathan A. Jennings

The U.S. Army announced sweeping plans in Summer 2013 to reorganize its brigade combat teams (BCTs) across both Active and National Guard Components into lesser quantities of more robust organizations. Based on the 38th Chief of Staff of the Army (CSA)'s assessment of predicted "contingency plans" and "rotational requirements," the Total Force has since restructured to 60 BCTs with a tactical distribution of 34 infantry, nine Stryker and 17 armored.¹ Moving forward, even as it faces increased national security demands across five continents, the Army is expected to further reduce its maneuver capacity to between 56 and 50 BCTs due to continued budgetary constraints.²

The problematic result of this reorganization is an unbalanced maneuver structure that is disproportionately light and perilously narrowed in tactical potential. With the American joint force reorienting on emerging crises across the Middle East and Eastern Europe – operational environments that have traditionally demanded diverse combined-arms teams with dynamic operational reach and strike ability – the Army should consider moving toward a BCT distribution with more equal allocations of light and heavy formations. Rather than prioritizing

the importance of one type over the other, adopting greater balance in fighting capacity would better achieve the CSA's imperative "to increase the Army's operational capability and flexibility."³

BCT optimization

The primary rationale for expanded equilibrium among BCT types, or at least prevention of further reduction in mechanized density, stems from optimized capabilities that infantry (IBCT), Stryker (SBCT) and armored (ABCT) formations contribute to regionally aligned forces and Guard mobilization. They each possess graduated degrees of mobility, protection, firepower and expeditionary rapidity, thereby providing specialized utility in landscapes ranging from open deserts and plains to restrictive mountains, jungles and cities. According to the Army's 2014 *Operating Concept*, each BCT, regardless of posture, is mandated to "prevent conflict, shape the security environment, and win wars" through "joint combined-arms operations." This requirement consequently demands structural depth in light, medium and heavy forces to support both contingency efforts and major campaigns.⁴

Beginning with infantry BCTs, the current array of six light, five airborne and three air-assault brigades on active service, in addition to 20 light brigades in the Guard, are doctrinally designed for "operations in close terrain, such as swamps, woods, hilly and mountainous areas, and densely populated areas."⁵ As the lightest BCTs with majority status at 58 percent of the Army's maneuver strength, they wield rifle battalions with high capacity for airmobile attack while fighting across immature combat theaters with minimal logistical support.⁶ Despite these strengths, the very structure that allows expeditionary rapidity also limits broader utility in high-intensity and high-consumption conflict. The IBCT's lightened signature – which includes only an anemic organic allocation of unprotected trucks for tactical transport – precludes inclusion of armored vehicles and large-caliber weaponry.

SBCTs, the Army's medium-level BCTs, are designed to bridge capability gaps between light and heavy forces. With a modest complement of eight Active and one Guard, brigade they represent 25 and 4 percent of their respective components.⁷ As wheeled formations



that combine moderately protected transport with rifleman density, the newest of the maneuver brigades is, according to Army doctrine, “more deployable than the ABCT and has greater tactical mobility, protection and firepower than the IBCT.”⁸ Despite these strengths, the SBCT’s intermediate stature necessitates conditional disadvantages of both their lighter and heavier counterparts. While platform weight makes them less strategically deployable than infantry brigades, the Stryker’s relatively light armor and weaponry leave it vulnerable against direct-fire cannon and area-denial technology.⁹

The final and heaviest formation – the ABCT – represents 31 and 25 percent of Active and Guard BCTs, respectively, while serving as the Army’s premier forcible-entry force in major combat operations. As emphasized by BG Scott McKean, Chief of Armor/commandant of the U.S. Army Armor School, “the need for our armored force is increasing” and its singular ability to “close with and destroy the enemy using fire, maneuver and shock effect” is a critical capability ABCTs “bring as part of the combined-arms team.”¹⁰ However, this optimization for high-intensity, high-consumption and industrial warfare creates converse limitations. Encumbered by mechanized platforms like main battle tanks and infantry fighting vehicles with intensive logistical signatures, constraints on strategic mobility make them the least expeditionary combat units in the Army inventory and often require prepositioned fleets.

The outcome of varied BCT optimization – with units assigned to regional commands according to specialized capabilities – is that the Army requires balance to fulfill its self-described imperative to “allow joint force commanders” across expansive theaters “to dictate the terms of operations and render enemies incapable of responding effectively.”¹¹ Even as it must have infantry and Stryker formations to fight through restrictive and complex terrain, America’s landpower institution must possess an impactful armored corps to unleash maximal and scalable destruction. This requirement for relative parity in operational utility – a

necessary compromise to sustain overmatch against emerging threats in Eastern Europe and the Middle East while remaining committed to the “Pacific Pivot” – can be best assessed according to the Army’s core competencies: combined-arms maneuver (CAM) and wide-area security (WAS).

CAM

The 2014 *Operating Concept* defines the Army’s primary mission as the projection of “mobility, protection and firepower necessary to strike the enemy from unexpected directions.” It achieves this effect, in a joint context, through CAM with regionally assigned units and task-organized teams against both predictive and unknown threats. Each type of maneuver brigade, according to light, airmobile, motorized or mechanized profiles, synergizes with joint, interagency and multinational coalitions to “defeat enemy ground forces, seize, occupy and defend land areas, and achieve physical, temporal and psychological advantages over the enemy.”¹²

Despite this reality, the BCT reorganization plan has catalyzed an institutional reorganization toward a lighter posture based on expeditionary responsiveness and economized platform distribution. As criticized by Gian Gentile in his controversial 2012 book *Wrong Turn*, “the U.S. Army has already shifted its organizational structure toward light infantry in place of mechanized armored forces” with “two thirds of the active-duty combat brigades” consisting of “light infantry, the shock troops of [counterinsurgency].”¹³ Under the current and emerging Total Force structure, this disproportional increase in infantry units, rising to 72 percent when combined with Stryker infantry, threatens to leave the Army equipped to support narrower ranges of expeditionary efforts.

This transition consequently undermines the United States’ capacity to execute several crucial joint endeavors. Beginning with forcible entry to defeat intolerable regimes, large-scale invasion remains a critical aspect of national power. This type of major combat operation often requires lighter elements to support heavier counterparts as they attack in-depth to shatter

enemy fronts. As assessed by senior Army officers LTG H.R. McMaster, COL Mark Elfendahl and LTC Chris McKinney in their impactful 2013 *Foreign Affairs* article, armored forces with tanks and infantry fighting vehicles alone possess ability to “keep pace with fast-moving aircraft” across contested landscapes “when operating as part of an air-ground team.”¹⁴ Mechanized BCTs also possess the Army’s only cavalry capable of reconnaissance by force and artillery capable of firing while protected.

Just as infantry brigades proved their distinctive value during entry into Granada, Panama and Afghanistan, the singular importance of ABCTs in facilitating American dominance finds recent historical relevance in the 1991 and 2003 invasions of Iraq. First, in Operation Desert Storm, a large international coalition achieved overwhelming victory by enabling broad armored envelopment with a variety of supporting arms and massive airpower effects. Twelve years later, the opening phases of Operation Iraqi Freedom maximized net-centric synchronization and proved the potency of armor-centric teams attacking along narrow axes while supported by precision air and naval strikes.

A second, more versatile and flexible role that armored forces fulfill in CAM is providing decisive, yet scalable, overmatch in hybrid environments and high-intensity urban combat. Moving beyond sweeping confrontations of mass and scale, organizations with mechanized infantry, cavalry, engineers, artillery and tanks alone possess the mobile protected firepower required to move forcefully against strongpoints fortified by mined approaches and standoff weaponry. While infantry and Stryker forces can prove vulnerable against entrenched opponents in complex infrastructure, armor-centric teams have repeatedly proven their ability to excel against hybrid opponents in unpredictable and rapidly changing landscapes.

The tactical utility of diverse fighting teams – with a nuanced involvement by light, medium *and* heavy formations – was definitively proven in Operation Iraqi Freedom. In addition to combined-arms attacks that succeeded in

Fallujah, Ramadi and Mosul, the 2008 Battle of Sadr City offers instructive lessons for such impact. Initially, according to a 2013 RAND study, Stryker forces attacking into the dense urban setting of East Baghdad “suffered heavily from [explosively formed penetrator] and other anti-armor systems” and lost six platforms in six days. The task force then galvanized success by augmenting with tanks and mechanized infantry to allow a critical “degree of tactical overmatch” while Strykers and riflemen provided “needed overwatch and security.”¹⁵ As proven in previous American wars, customizable combinations of heavy armor, motorized transport and dismounted soldiers proved ideal for negotiating fiercely contested terrain.

A final argument for empowering CAM through more equal distribution of BCT types is the reality of increasing anti-access and area-denial capabilities by potential opponents. As the U.S. military encounters both conventional and hybrid foes, advanced aerial and ground interdiction may stymie both airborne and motorized attacks. These threats, encompassing both emerging technologies and unsophisticated devices, find greatest concern in the proliferation of third-generation surface-to-air missiles like the Russian-built S-400 and in improvised explosive devices (IEDs) employed in recent years in Lebanon, Chechnya, Iraq and Afghanistan.¹⁶

The 2006 Israeli invasion of Lebanon, in particular, provides a cautionary example for modern militaries – including the U.S. Army as it completes BCT reorganization – of how attacking prepared opponents without adequate combined-arms diversity can retard strategic success. In this case, according to RAND analyst Dr. David Johnson, the Israeli Defense Force (IDF) “became generally incapable of the joint combined-arms fire and maneuver capabilities generally associated with major combat operations” and therefore “paid a heavy price in casualties for their lack of preparation.” The resulting lackluster ground campaign revealed for a global audience perils of embracing disproportionately light combat profiles with predominant orientation toward stability functions.

Later, in the 2009 Israeli offensive into Gaza called Operation Cast Lead, a re-focused IDF attacked a similar hybrid threat with a more varied combined-arms mix. In addition to incorporating more Merkava tanks and armored infantry carriers to allow rapid advances through enemy obstacles and stand-off fires, they synchronized heavy engineers, artillery effects and air strikes to enable maneuver brigades to clear and suppress entrenched defenders.¹⁷ As the U.S. Army completes realignment, it should learn from Israeli interventions – in addition to its own experiences with combined-arms success in Southwest Asia – to prioritize and resource a truly full spectrum-capable force.

WAS

The second major Army competency is directly empowered by expertise in CAM. Doctrinally defined as “the application of the elements of combat power to protect populations, forces, infrastructure and activities to deny the enemy positions of advantage and to consolidate gains to retain the initiative,” WAS requires forces to pursue ranges of stability and partnered operations. As important elements in the Army’s regional-alignment strategy to both rotationally and permanently deploy forward elements to bolster allies and intimidate opponents, armored formations remain critical for meeting its mission to provide “the joint-force commander with reaction time and maneuver space.”¹⁸

The importance of maintaining balance in projection of light, medium and heavy elements has thus gained renewed importance as the joint force reduces presence in Afghanistan and repositions to engage new threats. Even as elements of American national power “pivot” toward the Pacific theater, where China and North Korea maintain large armored corps and improving area-denial capabilities, American commanders have been compelled to refocus on crises across the Middle East and Eastern Europe. Expeditionary operations in these regions – where combined-arms teams with mechanized capability have proven decisive in previous conflicts – demand preservation of a sizable, resourced and forward-deployed armored presence.

The redeployment of heavy units to settings where mechanized importance was recently de-emphasized, if only in prioritization of resources, illustrates the continued need for diversity within the larger panoply of U.S. military power. Task-organizing multi-faceted ground forces to conduct WAS offers customizable solutions for stabilizing crises and deterring foes. Among Army combat formations, ABCTs in particular possess the most scalable ability to, as defined by Johnson, “scale up” to face “high-lethality stand-off threats” or “scale down to confront irregular adversaries as part of a balanced force that includes light infantry.”¹⁹

This singular versatility has been recognized during stability efforts even in regions with restrictive terrain like Afghanistan, where the U.S. Marine Corps, the Netherlands and Canada deployed tanks to support patrols, attacks and defenses. As argued by MAJ Trevor Cadieu, a Canadian Army officer who commanded a Leopard II company in Kandahar Province in 2008, heavy armor “restored tactical mobility to the combined-arms team in Afghanistan through its ability to penetrate grape and marijuana fields, clear mine and IED belts, and breach mud walls and compounds that were previously impassable to the [Light Armored Vehicle] III.”²⁰ Furthermore, ABCTs alone possess unique support assets such as tracked engineers, medics and personnel transport that lighter units organically lack. Since IEDs endure as proven “low-tech” weapons of choice for guerrilla and hybrid resistance, these enablers will remain in high demand.

Another doctrinal aspect of WAS endeavors is forward positioning by regionally aligned and partnered forces to “preempt enemy actions and retain the initiative.”²¹ The re-emergence of territorial aggression in Europe, in particular, has compelled re-emphasis on the central role that survivable combined-arms teams hold in projecting credible strategic deterrence. As explained by McMaster in his recent *Military Review* essay, “the forward positioning of capable ground forces elevates the cost of aggression to a level that the aggressor is unwilling to pay and prevents the aggressor from doing

what Russia has in Ukraine – posing to the international community a *fait accompli* and then portraying its reactions as escalatory.”²²

Among the entire U.S. arsenal, heavy brigades, typically task-organized with light and wheeled formations, telegraph unique implications of permanency while demonstrating resolute intent to support allied interests. Reversing recent trends that saw the complete withdraw of American mechanized battalions from Europe, multi-national activity sets that include imposing Abrams tanks and Bradley Fighting Vehicles have returned under NATO’s Operation Atlantic Resolve in numbers. More realistic than threat of strategic bombardment, and less transitory than naval reinforcement, this type of armored presence, even in relatively small densities, communicates definitive strength of national will.

Given the need to preserve stability in former Soviet-bloc states, the Middle East and across East Asia, armored forces are once again proving their strategic value. As McMaster, Elfendahl and McKinney argue in their *Foreign Affairs* article, the emergence of destabilizing territorial aggrandizement – exemplified by Russia’s mechanized invasion of Georgia in 2008 and motorized occupation of Crimea in 2014 – requires the United States and its allies to “retain sufficient armored forces to deter and, if necessary, confront large, well-armed ground forces.” Taking the analyses further, the authors assess that America must maintain a “balanced force able to overcome their countermeasures – and [ABCTs] are a fundamental component of that balanced force.”²³

Toward a more balanced force

When appreciating hard-won lessons from previous conflicts and requirements for tactical diversity among regionally aligned Active and Guard BCTs, the imperative becomes clear: the United States needs a robust armored corps to complement infantry and Stryker capabilities against complex challenges. This means it must be structured, as directed in the Army’s *Operating Concept*, to maneuver over “dispersed over wide areas” and

“develop *situational understanding through action* while possessing the *mobility* to concentrate rapidly.”²⁴ Only balanced availability among light, medium and heavy formations, each with specialized optimization, can prosecute and dominate unified land operations against non-state, conventional and hybrid opponents.

Given these demands, the Army should first and foremost preserve its 17 remaining ABCTs and, if necessary, apply future force reductions to the 34 infantry brigades that comprise the Total Force majority. The reduced stature of the American mechanized corps, even as traditional allies like the United Kingdom have drastically downsized their own, already compels the U.S. joint force to accept risk in the eventuality of a major land war.²⁵ As a further, albeit more fiscally challenging, measure to improve institutional capacity, Army decision-makers should consider converting two IBCTs to ABCT status to allow increased operational flexibility. With multiple brigade-sized mechanized fleets remaining from recent BCT deactivations, these reorganizations would enhance strategic readiness while proving marginally cost-neutral.²⁶

In 2011 the 18th Chairman of the Joint Chiefs of Staff – an Armor officer who commanded varied formations in combat – wrote that “success in future armed conflict requires the Army to sustain the expertise we’ve developed in [WAS]” and “rekindle our expertise in [CAM].”²⁷ Since then the march of hostile armies in Crimea and Mesopotamia, in addition to continued instability in Africa, along the Pacific Rim and in Persia, have proven him prophetic. To meet these threats, the U.S. Army requires balance among IBCTs, SBCTs and ABCTs to ensure breadth of capability in mobile protected firepower. Looking toward the 21st Century, let America’s landpower institution remain tactically diversified and maximally prepared to defeat the enemies of the free world through full-spectrum dominance.

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Headquarters and Headquarters Troop, 4-9 Cavalry, 2nd BCT, 1st Cavalry Division, Fort Hood, TX; commander, Troop C, 4-9 Cavalry, 2nd BCT, 1st Cavalry Division, Fort Hood, TX, and Kirkuk, Iraq (deployed 2009); platoon leader, Company B, 1-34 Armored Regiment, 1st Brigade, 1st Infantry Division, Fort Riley, KS, and Baghdad, Iraq (deployed 2006-2007); and 19D Cavalry scout, 2-2 Armored Cavalry Regiment (Light), Fort Polk, LA. His military schooling includes Air Assault and Airborne schools, Maneuver Officer Basic Course, Maneuver Officer Advanced Course and Cavalry Leader’s Course. MAJ Jennings holds a bachelor’s of arts degree in history from Northwestern State University of Louisiana and a master’s of arts degree in history from the University of Texas at Austin.

Notes

¹ GEN Raymond Odierno, Pentagon press briefing June 25, 2013; this quantity includes 14 infantry, eight Stryker and 10 ABCTs in the Active Component and 20 infantry, one Stryker and seven ABCTs in the Guard.

² Mathew Cox, “Army Must Shed 6 BCTs to Meet Proposed Budget Cuts,” *Military Com News*, Feb. 12, 2014.

³ Ibid.

⁴ TRADOC Pamphlet 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World*, Oct. 31, 2014.

⁵ Ibid.

⁶ Michelle Tan, “Army outlines plan to inactivate 7 brigade combat teams,” *Army Times*, May 5, 2014; this percentage excludes 11th Armored Cavalry Regiment, 75th Ranger Regiment and Special Operations Forces.

⁷ Ibid.

⁸ Field Manual 3-90.6, *Brigade Combat Team*.

⁹ Staff, “M1126 Strykers in Combat: Experiences & Lessons,” *Defense Industry Daily*, Oct. 11, 2005; “Study Faults Army Vehicle,” Jeffery Smith, *Washington Post*, March 31, 2005.

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²¹ **Army Operating Concept.**

²² LTG H.R. McMaster, "Continuity and Change: The Army Operating Concept and Clear Thinking About Future War," *Military Review*, March-April, 2015.

²³ McMaster, Elfendahl and McKinney.

²⁴ **Army Operating Concept.**

²⁵ Jack Simpson, "British Army Reduced to One Single Tank Regiment," *The Independent*, March 11, 2015.

²⁶ While conversion of Active Component IBCTs to ABCTs would be ideal to allow maximum readiness, reorganization of Guard IBCTs would provide similar benefit at less cost.

²⁷ GEN Martin Dempsey, "Win, Learn, Focus, Adapt, Win Again," *ARMY Magazine*, March 2011.

Acronym Quick-Scan

ABCT – armored brigade combat team

BCT – brigade combat team

CAM – combined-arms maneuver

CSA – Chief of Staff of the Army

IBCT – infantry brigade combat team

IDF – Israeli Defense Force

IED – improvised explosive device

SBCT – Stryker brigade combat team

WAS – wide-area security

U.S. Army Observes 75th Anniversary of Armored Force

Part 1 of 2

The Army's armored force was officially "born" July 10, 1940, quietly revolutionizing modern methods of war. Before armored warfare, American troops had limited ability to speedily and decisively maneuver to and penetrate the enemy's defensive lines.

World War I

Before World War I, horse-mounted cavalry performed what is now the tank's role: maneuvering and breaking through enemy infantry to attack lines of communication and means of support in the rear. The entrance of machineguns and closed fronts on the battlefield made cavalry too vulnerable for this task, while armor was ideal for it.

Modern armored warfare began with the need to break the stalemates forced on commanders fighting on the Western Front caused by the

effectiveness of entrenched defensive infantry armed with machineguns (trench warfare). Any sort of advance was interminably slow and caused unacceptable, massive casualties. The tank's development, then, was motivated by the need to return maneuver to warfare, and the only way to do so was to protect Soldiers from small-arms fire as they were moving.

The United States established its Tank Corps in 1918 using French Renault FT light tanks and British Mark V and Mark V heavy tanks. Some officers like GEN Dwight D. Eisenhower and GEN George S. Patton Jr. emerged from the Great War as avid proponents of continuing and developing an American Armored Force.

Interwar years: 1920s-1930s

After World War I, Congress restructured the Army based on a review of its wartime actions. The

National Defense Act of 1920 defined the Army's organization and operation throughout the interwar period, and it abolished the separate Tank Corps. The tank's wartime infantry-support role suggested its alignment with the dismounted branch. Therefore, the infantry received exclusive responsibility for developing new tank designs and the related training and doctrine. While the 1920s would witness significant innovation in tank usage by other nations, American tank development occurred within the relatively narrow confines of the infantry's mission of seizing and holding ground.

The infantry developed the tank as one of several support weapons for the rifleman. In particular, it sought the close integration of tanks and infantry at the small-unit level. This capability suited infantry needs and constituted an important role for the tank. In the early 1920s, COL Samuel Rockenbach – who led the tank force in World War I – supported efforts to build a more powerful and reliable medium tank. However, prototype models tended to be too heavy, and the desired balance of firepower, mobility and protection proved beyond the technology available. This failure, coupled with the Army's interest in fighting a war of maneuver rather than in trenches, shifted tank-design emphasis to light, fast tanks that leveraged major advances in suspension, track and engines.

British experimentation with the use of tanks in multiple roles finally prompted similar testing in the United States. Between 1928 and 1931, the Army created two experimental units that mixed tanks with other combat and support elements – the Experimental Mechanized Force at Fort George G. Meade, MD, in 1928, and the Mechanized Force at Fort Eustis, VA, in 1930. Each one comprised a motley collection of vehicles and weapons with limited tactical value. However, the experience these organizations acquired prompted Army-wide discussion of

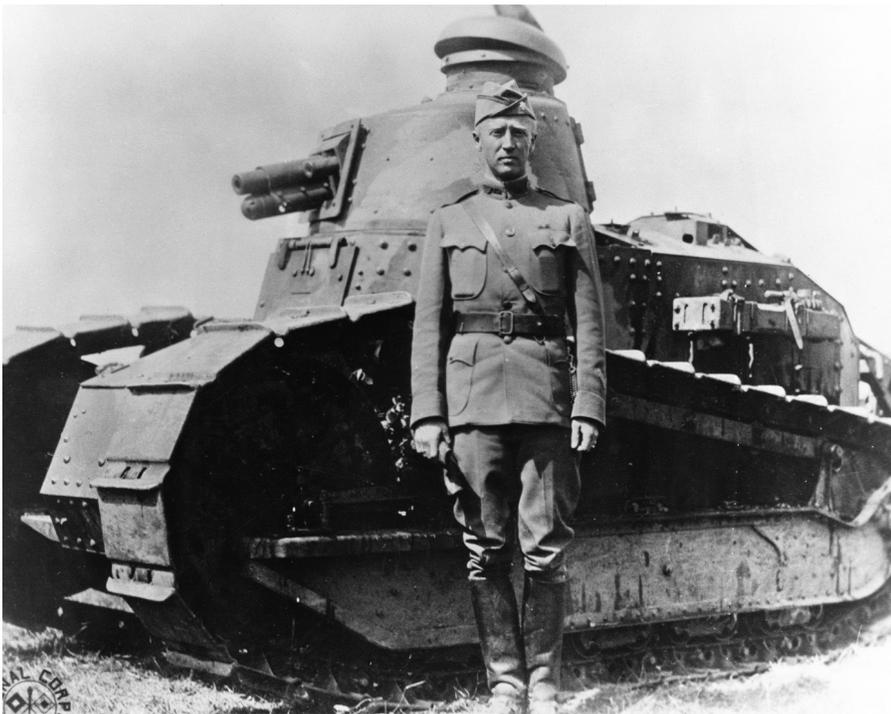


Figure 1. LTC George S. Patton Jr., 1st Tank Battalion, and a French Renault FT tank, Summer 1918. (Photo by U.S. Army Signal Corps, World War I Signal Corps Photograph Collection, <http://www.army.mil/images/2007/04/22/3578/army.mil-2007-03-28-152527.jpg>)

new roles and tactical organizations for the tank. The notion of a separate mechanized arm emerged, but in the absence of more funding and personnel, the Army could only create such a force by diverting resources from the existing combat arms. This course of action met with resistance that intensified with the Great Depression's onset and congressional unwillingness to increase military spending.

The impasse between creating a new mechanized arm and resourcing was resolved in 1931 by Army Chief of Staff GEN Douglas MacArthur. In a new mechanization policy, he directed the combat arms to pursue separate mechanization efforts using their own resources. No longer would each combat arm face the specter of losing funding and personnel to a rival organization. This decentralization proved less efficient than the centralized mechanized programs of Germany and Russia, but MacArthur's policy ensured that the Army would adopt mechanization rather than be threatened by it.

The new mechanization policy had little effect on infantry tank development, but it permitted the Cavalry to begin experimenting with tank usage. Throughout the 1920s, the mounted arm had to limit its interest in motor vehicles to armored cars, which proved mechanically fragile and road-bound. In 1931, however, the Cavalry established the 7th Cavalry Brigade (Mechanized). Initially little more than a paper organization, the brigade included 1st Cavalry Regiment (Mechanized). This unit exchanged its horses for vehicles and relocated from the Texas border to Fort Knox, KY, in 1933. Knox was one of the largest installations in the United States, but other than summer training by National Guardsmen and Reservists, it lay unused. With 1st Cavalry's arrival, Fort Knox began its long association with mechanized development.

The 1st Cavalry initially served as a tactical laboratory to help determine the optimal organization, doctrine and materiel for a Cavalry organization built around vehicles. Through maneuver participation, field exercises and analysis, its personnel evolved the unit into a flexible organization, capable of performing the full range of Cavalry missions. By the mid-1930s, the regiment

had been joined at Fort Knox by 13th Cavalry Regiment (Mechanized) and attachments of artillery and engineers. Collectively, these forces transformed 7th Cavalry Brigade (Mechanized) from a paper organization into a powerful combined-arms force. Tanks assigned to this unit received the designation "combat cars." This nomenclature change ensured that the mechanized cavalry adhered to the letter of the National Defense Act of 1920 and left the infantry's exclusive responsibility for tanks unaltered.

Cavalry doctrine envisioned mounted elements operating in small groups dispersed over a broad frontage. To offset the vulnerability of small numbers of tanks operating alone, they were supported by troopers, engineers and mortar teams. Continued experimentation and field exercises led to the integrated action of these elements and the beginnings of modern American combined-arms tactical doctrine. Rapid movement of these teams reinforced Cavalry emphasis on outmaneuvering the enemy rather than engaging in sustained and costly firefights. Hence, mobility and speed became critical attributes. In armored-vehicle design, the mechanized cavalry consistently opted for speed and mobility over firepower and armor protection. Organizational and tactical concepts that slowed operational tempo were discarded.

In its efforts to coordinate the actions of multiple fast-moving combined-arms teams, 7th Cavalry Brigade (Mechanized) revolutionized command-and-control procedures. Visual signals and wire-based communications proved too slow to facilitate rapid decision-making and sustain the high operational tempo desired. Therefore the mechanized cavalry embraced widespread radio usage. It established radio nets that conformed to a unit's tactical organization and abandoned the Army's rigid emphasis on encoded transmissions. Before a mission began, key participants were briefed on the overall objectives and their specific tasks. When operations began, subordinate leaders received short radio messages sent in the clear to update them on changing conditions. While these transmissions might be intercepted,

mechanized-cavalry personnel believed that rapid communication, coupled with fast action, outweighed potential security risks. Moreover, the cryptic nature of radio traffic provided a degree of signal security, since an opponent lacked the context of the mission order. The pioneering efforts of 7th Cavalry Brigade (Mechanized) at Fort Knox marked the introduction of mission-type orders and fragmentary orders into the Army.

In maneuvers and field exercises, the mechanized cavalry discovered it could increase its battlefield effectiveness by altering the composition of its combined-arms teams to meet changing tactical conditions. The 7th Cavalry Brigade (Mechanized) and its subordinate regiments rarely operated as a single mass. Instead, they operated as a collection of combat teams, each one organized according to its objective, expected enemy resistance and terrain. The composition of these teams changed according to the tactical situation and gave the mechanized cavalry a high degree of organizational flexibility. Task organization marked a departure from the Army's traditional reliance on rigid tactical groupings and marked the foundation for the later World War II-era combat command.

By comparison, in the Soviet Union during the early 1930s, Red Army and German officers collaborated in developing tanks based on second-generation vehicles using turreted main weapons, and experimented with different chassis configurations and drive trains. One important acquisition for the Red Army turned out to be the purchase of a T3 chassis from U.S. designer J. Walter Christie, which served as the basis of the Soviet BT series of fast tanks.

A development taking place shortly before World War II that influenced Soviet armored doctrine and tank design for a decade was the creation of the T-34. Developed on the Christie suspension chassis and using sloped armor for the first time, the T-34 proved a shock to the German forces in World War II with its excellent combination of mobility, protection and firepower. Using wide tracks, the T-34 was also able to negotiate terrain in difficult weather conditions, something that persis-

tently dogged the German designs.

Chaffee's influence

A principal player in U.S. tank development was MG Adna R. Chaffee Jr.,¹ an outspoken advocate of mechanization in the interwar years. He served on the American Expeditionary Forces staff in World War I. In 1927, Chaffee became a staff officer in the G-3 Section of the War Department General Staff, where he became immersed in the study of tanks and that year predicted mechanized armies would dominate the next war. Through a personal friendship with the American military attaché to Britain, he acquired accurate information regarding the latest British mechanized developments. In the 1930s, he became closely associated with mechanized-cavalry development, commanding 1st Cavalry and later 7th Cavalry Brigade (Mechanized). In 1940, he became the first chief of the Armored Force, shaping the nature of American future armored doctrine before his death in 1941.

Chaffee helped develop appropriate training, equipment and doctrine during the late 1920s through the 1930s. Assigned to 1st Cavalry Division in 1931, he continued to develop and experiment with armored forces. Chaffee trained 1st Cav for the Fort Riley Maneuvers in 1934. In the maneuvers to Allegan, MI, in August 1936, 1st Cavalry traveled 400 miles in two days. Under COL Bruce Palmer, 1st Cavalry fought the Red Team against the Blue Team for the first time in a division-level maneuver.²

In 1938, Chaffee assumed command of the reorganized 7th Cavalry Brigade, the Army's only armored force. Chaffee battled continuously during the prewar years for suitable equipment and establishment of armored divisions. With the collapse of the French army in June 1940, Chaffee's 1927 predictions of the importance of armored forces in modern warfare were confirmed.

In the August 1939 Plattsburg Maneuvers, the largest American peacetime exercise to date, 1st and 13th Cavalry Regiments engaged in mock combat between two corps. The brigade leaders refined Cavalry doctrine, with tracked vehicles traveling at night, without lights, to take the major road

center of Peru by surprise. Unlike the British use of a mechanized force to support infantry, 7th Cavalry Brigade at Plattsburg followed the German example by preserving the separate organizational integrity of the mechanized force.³

Chaffee commanded 7th Cavalry Brigade (Mechanized) during the First Army Maneuvers of 1939. This event demonstrated how a fast-moving mechanized force could decisively influence a battle. The critical action occurred when the unit conducted a 60-mile night roadmarch under blacked-out conditions to launch a dawn flanking attack. The brigade burst into the rear area of the opposing force, creating enough mayhem to trigger the end of the maneuvers.

"Chaffee certainly helped turn military opinion to support a strong armor force; his decade of quiet and consistent leadership paid off in the Louisiana Maneuvers of 1940 and the founding of the American armor force in July of that same year," wrote John Cranstons in his article, "German and British Experimentation in 1920s-30s Inspired Emergence of U.S. Armor Force" (*ARMOR*, March-April 1995 edition). "However, Chaffee's work in the 1930s, including successively expanded maneuvers, in many ways built on foundations laid earlier in Germany from 1918 until 1926 and, to a lesser extent, in mechanized maneuvers held in England after that time through 1938. Chaffee's outstanding achievements by 1940 may well have evolved because of his knowledge of European precedents. Throughout combined-arms exercises, he preserved the integrity of the mechanized and later of the armor force."

The 7th Cavalry Brigade went on to fight in the corps-level Louisiana Maneuvers of 1940, which were the largest peacetime maneuvers conducted in the United States up to that time. Together with the recently arrived 6th Infantry Regiment (Mechanized), the brigade was attached to IX Corps. A provisional tank brigade from Fort Benning, GA, was attached to IV Corps. The two brigades fought first against each other and then on the same side, with mechanized brigades emerging as clear winners in the maneuvers. IV Corps em-

ployed the "triangular" division concept with three regiments per division.⁴

Within days of the end of First Army Maneuvers, Germany invaded Poland. The Nazis' high-profile use of combined-arms formations served to vindicate the tactical ideas 7th Cavalry Brigade (Mechanized) had developed and spurred efforts to expand that unit into a mechanized division. Increasing the Army's mechanized might, however, suffered from lack of funds and materiel. Only small numbers of new combat vehicles were produced before 1939. Numerically, the most significant vehicle in the Army's inventory remained the Mark VIII heavy tank and an American version of the FT-17, both dating from World War I and obsolete. However, the interwar years did witness steady improvements in the reliability and durability of tracks, engines and suspension systems. By 1939, the prospect of another war in Europe led the Army to order the production of more than 300 M2A4 light tanks equipped with 37mm guns. For mechanization, this action signaled the end of the Great Depression's lean years.

Patton's contributions

Another U.S. Army figure with foresight included Patton; in the interwar period, Patton⁵ was also a central figure in the development of armored-warfare doctrine in the U.S. Army. Patton began his interest in tanks during World War I while in hospital for jaundice. There he met COL Fox Conner, who encouraged him to work with tanks in lieu of infantry. In 1917, Patton was assigned to establish the American Expeditionary Forces' Light Tank School and trained tank crews to operate in support of infantry, promoting the Armored Force's acceptance among reluctant infantry officers. Patton commanded American-crewed Renault FT tanks at the Battle of Saint-Mihel.

After the war, Patton was given temporary duty in Washington, DC, in 1919 to serve on a committee writing a manual on tank operations. During this time, he came to believe that tanks should be used not as infantry support but rather as an independent fighting force. Patton advocated the M1919

tank design Christie had created, a project shelved due to financial considerations. With Christie, Eisenhower, Chaffee and a handful of other officers, Patton pushed for more development of armored warfare in the interwar era.

Patton was transferred in May 1927 to the Office of the Chief of Cavalry in Washington, DC, where he began to develop the concepts of mechanized warfare. A short-lived experiment to merge infantry, cavalry and artillery into a combined-arms force was cancelled after the U.S. Congress removed funding.

During maneuvers Third Army conducted in 1940, Patton served as an umpire, where he met Chaffee, and the two formulated recommendations to develop an armored force. When Chaffee was named commander of this force and created 1st and 2nd Armored Divisions, he named Patton commander of 2nd Armored Brigade, 2nd Armored Division. The division was one of few organized as a heavy formation with a large number of tanks, and Patton was in charge of its training.

As Chaffee stepped down from command of I Armored Corps, Patton became the most prominent figure in U.S. Armor doctrine, staging a high-profile mass exercise driving 1,000 tanks and vehicles from Columbus, GA, to Panama City, FL, and back in December 1940 – and again with his entire division of 1,300 vehicles the next month. Patton earned a pilot's license, and during these maneuvers he observed the movements of his vehicles from the air to find ways to deploy them effectively in combat.

Patton's impact on armored warfare and leadership were substantial, with the U.S. Army adopting many of his aggressive strategies for its training programs following his death in 1945. The first American tank designed after the war became the M46 Patton.

Interwar years: 1940s

On May 10, 1940, German armored formations spearheaded an invasion of France, triggering that country's surrender within six weeks. This conquest shocked the American Army, which had held the French military in high regard. However, through the efforts of the

M3 and M4 tanks during World War II

The tanks that equipped armored units reflected the armored division's intended role. This formation was designed to envelop enemy positions and operate throughout an opponent's rear area. Tank designs therefore emphasized maneuver and mobility over firepower and armor protection.

Indeed, light tanks constituted much of the early armored divisions' tank strength. The M3 light tank (Stuart), later upgraded to the M5, carried a 37mm gun, could achieve tactical speeds of 35 miles per hour and proved easy to maintain. However, as the war progressed and the armor and armament of German tanks and self-propelled guns increased, the light tank became increasingly vulnerable. It became relegated to reconnaissance-and-security roles, and its numbers within the armored division fell in favor of more medium tanks.

The M4 medium tank (Sherman) became the principal American tank of World War II. More than 70,000 were built during the war, equipping both American and Allied armies. Like the M3/M5 light tanks, it proved mechanically reliable and mobile. It became the workhorse of the U.S. Army, providing close infantry support, spearheading armored

attacks, performing anti-tank missions and acting as auxiliary artillery. However, its 75mm main gun lacked sufficient armor-piercing ability, and it sacrificed firepower and armor for greater mobility.

Even when upgraded to a 76mm, the M4's armament could not penetrate the frontal armor of the more heavily armored German tanks and assault guns. Therefore, standard tactics for a five-tank platoon engaging German Tiger and Panther tanks required one section to draw the Germans' fire, while the other section maneuvered to the flank and engaged the German tanks from the side or rear. Such tactics were not morale-builders for tank crews. Nor could the M4's armor protect it from the high-velocity 75mm and 88mm guns commonly carried on German tanks. In such engagements, American tank units relied on support from aircraft, artillery and tank destroyers.

Efforts to field a more powerful tank finally resulted in the M26 (Pershing) heavy tank, but only 20 entered combat before the war's end. For most tank units, combined-arms tactics became vital to success against German armor.

*Adapted from the U.S. Army Armor School Pamphlet 360-2, **This is Armor.***



Figure 2. M3 Stuart in the Tennessee Maneuvers.

American military attaché staff in Berlin, headed by MAJ Truman Smith from 1935-1939, the U.S. Army possessed considerable information regarding the organization and operation of the German panzer division. After France's defeat, German armored trends became the standard of comparison for American mechanized development. The absence of American armored divisions and corps fueled interest in merging mechanized cavalry and infantry tank development under a single organization.

The War Department responded by establishing the Armored Force July 10, 1940, as a "service test" to centralize mechanized development. This organization bore responsibility for building a credible American armored capability. Fort Knox, home of the mechanized cavalry, became the location of the Armored Force's headquarters. Infantry tank units and 7th Cavalry Brigade (Mechanized) merged to form the 1st and 2nd Armored Divisions and the separate 70th Tank Battalion.

The newly fledged Armored Force reflected the mechanized cavalry's influence. Chaffee was selected as the first chief of the Armored Force, and other officers with Cavalry or mechanized-cavalry backgrounds served in key command positions. Consequently, the Armored Force stressed maneuver and speed in its operations. Armored divisions would envelop the enemy and engage soft targets in his rear rather than engage in deliberate assaults upon his strongest positions. Tank-vs.-tank combat was to be avoided if possible since it wasted armored resources in costly firefights. The Armored Force also assumed responsibility for organizing and training separate tank battalions for infantry support, though its initial focus lay on the more powerful armored divisions and corps.

Enter Devers

Following Chaffee's death, MG Jacob L. Devers assumed command of the Armor Center at Fort Knox and became chief of the Armored Force in August 1941. Under Devers, doctrine evolved into a combined-arms operational force consisting of primarily infantry, artillery and tanks, with tanks being the major maneuver component.

Under this doctrine, U.S. tank crews of both armored divisions and General Headquarters (GHQ) tank battalions were taught to fight tanks in tank-on-tank engagements.

At this time a new medium tank was beginning to come off the production line: the M3 Grant. But Devers lobbied, sometimes against the views of his superiors, for a still more heavily armored and better-armed medium tank, the M4 Sherman. Devers played an important role in the M4's design, development and manufacturing, particularly its engine and armament. The Detroit Tank Arsenal began turning out Shermans in Fall 1941. The reliable, versatile, low-cost M4 and its variants would prove to be the most-produced tank in the U.S. Army during World War II.

Devers' command was responsible for training some 225,000 soldiers. At the beginning of 1942, two armored divisions were operational, five were in training and two more scheduled to be activated in February. All seven of those armored divisions were activated in 1942. (Army planners called for the eventual formation of 16 armored

divisions and 54 tank battalions.) Activity at Knox therefore accelerated. The Armored Forces' Replacement Training Center gave arriving soldiers 12 (later 17) weeks of training before they were sent on to armor units. The Armored Force School provided advanced individual training in specific areas such as gunnery, field tactics, communications and maintenance. The Armored Force Officer Candidate School prepared selectees to serve as commissioned officers in Armor. With so many men undergoing training, existing bases were overwhelmed. Devers had to oversee a massive construction of barracks, facilities and infrastructure, particularly at Fort Knox.

A large maneuver area where soldiers could train for desert warfare was also sorely needed. Devers sent Patton, then commander of I Armored Corps (which included 2nd Armored Division), to set up the Desert Training Center in the California-Arizona Mojave Desert.

Devers was an articulate proponent of the Army's emerging tactical doctrine of combined arms: infantry-artillery-armor-close air support. At his direction an updated, comprehensive (460



Figure 3. Crew from the M4 tank "Eternity" (7th Army) check their vehicle after landing at Red Beach 2 on July 10, 1943, during the Allied invasion of Sicily. The first Sherman in U.S. service, the M4A1, appeared in the North Africa Campaign. (Photo by Signal Corps (Osborne), <http://www.army.mil/cmh-pg/photos/WWII/ErlyYrs/WW2-ErlyYrs.htm>)

pages) *Armed Force Field Manual: Tactics and Technique* FM 17-10 was written, published and distributed in March 1942. Under a new table of organization and equipment (TO&E) he proposed, armored divisions were downsized. For all but the 2nd and 3rd Armored Divisions, the number of regiments was cut from six to three: two tank and one armored infantry. In a first, at Devers' insistence, a flight of light aircraft to be used for artillery spotting, recon and liaison was included in the new TO&E for each division.

Devers' conceptualization of combined arms caused friction between him and GEN George C. Marshall's chief of staff, LTG Leslie J. McNair, who commanded GHQ and was in tactical charge of all U.S. ground forces. GHQ, however, specifically did not control the semi-autonomous Armored Force, which was considered provisional and would not become a full branch until 1950. In March 1942, when Marshall ordered a major reorganization of Army headquarters, McNair was named commander of a new component, Army Ground Forces (AGF), which replaced GHQ. Relations between GHQ/AGF and the Armored Force were distant, with lines of authority and responsibility often unclear.

This friction helped delay development of the M26 Pershing heavy tank.⁶ From mid-1943 to mid-1944, development of the 90mm uparmored T26 prototype continued to proceed slowly due to disagreements about the Army's future tank needs. Tank historians such as Richard P. Hunnicutt, George Forty and Steven Zaloga have generally agreed that the main cause of the delay in the M26's production was AGF's opposition to the tank. The details of what exactly happened during this time vary by historian, but all agree that in September-October 1943, a series of heated discussions occurred over the issue of beginning production of the T26E1, which Devers advocated. Zaloga, in particular, identified several specific factors that led both to the delay of the M26 program and limited improvements in the M4's firepower.⁷

The Ordnance Department favored developing its own project, naturally: the 76mm gun, electrical-transmission T23. Theater commanders generally



Figure 4. An M26 Pershing T26E3 from Company A, 14th Tank Battalion, is transported aboard a pontoon ferry across the Rhine at Remagen March 12, 1945. The ferry was built by 1st Engineer Heavy Pontoon Battalion. (U.S. Army Signal Corps photo)

favored a 76mm-gun medium tank such as the T23 and were against the heavy 90mm gun tank Devers liked. However, most commanders were unaware of the testing done at Fort Knox of the T23, which had demonstrated reliability problems in the electrical transmission. Also, the new 76mm M1A1 gun approved for the M4 Sherman seemed to address concerns about firepower against German tanks, but all debaters were unaware of the 76mm gun's inadequacy against the Panther tank's frontal armor.

McNair⁸ had agreed to production of the 76mm M4 Sherman, and he strongly opposed the T26E1's production. In Fall 1943, he wrote Devers, responding to Devers' advocacy of the T26E1, and pointed out the theater commanders' opinion: "There has been no call from any theater for a 90mm tank gun. ... There can be no basis for the T26 tank other than the conception of a tank versus tank duel – which is believed unsound and unnecessary. Both British and American battle experience has demonstrated that the anti-tank gun in suitable number and disposed properly is the master of the tank. Any attempt to armor and gun tanks so as to outmatch anti-tank guns is foredoomed to failure. ... There is no indication that the 76mm anti-tank gun is

inadequate against the German Mark VI (Tiger) tank."

Devers pressed on with his advocacy for the T26, going over McNair's head to Marshall, and on Dec. 16, 1943, Marshall overruled McNair and authorized the production of 250 T26E1 tanks. Then, in late December 1943, Devers was transferred to the Mediterranean, where he eventually led the invasion of Southern France with 6th Army Group. In his absence, further attempts were made to derail the T26 program, but continued support from Marshall and Eisenhower kept the production order alive. Testing and production of the T26E1 proceeded slowly, however, and the T26E1 did not begin full production until November 1944. These production models were designated as the T26E3. According to Hunnicutt, the Ordnance Department had requested production of 500 each of the T23, T25E1 and T26E1 in October 1943 and continued to press for production of 1,000 tanks.

Louisiana Maneuvers

At the time Devers took command of Fort Knox, the Armored Force had just two operational armored divisions: the 1st at Fort Polk, LA, and the 2nd at Knox. Both participated in the large-scale two-phase corps-vs.-corps GHQ 1941

Maneuvers. These wargames, the Louisiana Maneuvers, were held in Louisiana and the Carolinas. Despite some successes, the maneuvers revealed armored-unit and equipment operational deficiencies, plus a general lack of combat readiness. In particular, post-maneuver reports showed a vulnerability of U.S. tanks to anti-tank fire.

This bolstered McNair's philosophy.⁸ Devers differed, countering that the number of tank kills credited to anti-tank gunners was unrealistic and biased. McNair continued to push for an independent tank-destroyer (TD) force. Devers argued that the best weapon against a tank was a better tank. Nevertheless, in November 1941, Marshall authorized creation of the TD force. (Battlefield experience would prove that Devers was right. In combat, TDs were mainly used as mobile artillery support. At the end of the war, the TD force was disbanded.)

Patton's exploits, meanwhile, supported the proponents who said the Armored Force lent speed and agility. Patton led 2nd Armored Division during the Tennessee Maneuvers in June 1941 and executed 48 hours' worth of planned objectives in only nine. During the September 1941 Louisiana Maneuvers, his division executed a 400-mile end run around the Red Army and "captured" Shreveport, LA. During the October-November 1941 Carolina Maneuvers, Patton's division captured Hugh Drum, commander of the opposing army.

After the Louisiana Maneuvers, the Army expected to have a period of "remedial training" to fix problems. The Japanese attack on Pearl Harbor Dec. 7, 1941, shattered those expectations and plunged a not-fully-prepared United States into the war.

World War II

Following the invasion of Poland and the outbreak of World War II in Europe in 1939, the U.S. military entered a period of major mobilization and a wayfinding among men, machines, training, structure and doctrine – for instance, in the division's emergence. The Armored Force grew during the course of the war from its initial two to 16 armored divisions. Much of this expansion occurred in 1941 and 1942,

years in which the Armored Force worked to establish an effective training base under Devers and develop optimal organizations for mounted units. The division became the primary focus of this attention. It became the largest American armored formation fielded in World War II, despite early interest in creating an armored corps. The division underwent continuous modification until the establishment of a permanent structure in September 1943. Basic components included three armored battalions, three armored-infantry battalions, three artillery battalions, one engineer battalion, one reconnaissance battalion, one medical battalion and one maintenance battalion.

The division's size reflected the Armored Force's emphasis on organizational flexibility and deployability. Deliberate efforts were made to keep the formation from becoming too bulky or unmanageable. To facilitate command and control, the new division dispensed with rigid brigade and regimental headquarters. Instead, it relied on subordinate combat commands that possessed a permanent staff but no fixed troop assignments. They were assigned units according to their mission, and their composition changed with the tactical situation or the division commander's intent. Each combat command in turn organized its assets with up to four task forces, similarly flexible in their structure and operation.

Exploitation of the combat-command concept initially suffered from a shortage of officers familiar with combined-arms operations and comfortable with the absence of organizational rigidity. Armor-officer training therefore focused on fundamentals to ensure a basic competency level. Standard combat-command organizations and solutions for "typical" tactical situations provided essential guidance, but too often they became rigidly applied in combat theaters. A deeper understanding of combined-arms operations and the utility of the combat-command structure tended to occur only as a result of combat experience. The Army did not truly possess a combined-arms culture when it entered the war, but it recognized the importance of com-

bined-arms action by war's end.

The division's rite of passage came when, in August 1942, LTG Dwight D. Eisenhower was named commander-in-chief Allied Force Headquarters to lead the Operation Torch landings – planned for late Fall – and 1st and 2nd Armored Divisions were assigned to the operation. Increased pressure was on Devers to push more armored units through the pipeline even faster. Despite obstacles such as lack of personnel trained in critical military occupational specialties and a persistent shortage of tank engines, the Armored Force chief succeeded in getting divisions and battalions to their ports of embarkation on time, and American and British forces went ashore at Casablanca, Oran and Algiers Nov. 8, 1942, as Operation Torch was launched.

Training shortfalls also showed up as the Armored Force's focus on developing and fielding armored divisions resulted in less attention devoted to the separate tank battalions intended for infantry support. These armored units were not permanently assigned to infantry formations and had few opportunities to train with riflemen. Many tank battalions were broken into company teams and assigned to support different infantry units. Tank-infantry coordination thus became a battalion and company commander's problem, made worse by the early lack of doctrine for the operation of tanks in urban and complex terrain. In the Normandy hedgerows, for example, the close terrain reduced engagement ranges and forced the employment of tanks in small groups rarely larger than a company and more often a platoon's or section's size.

Mechanized cavalry served in large numbers in World War II, but their nature and composition differed from the general-purpose organization represented by the interwar 7th Cavalry Brigade (Mechanized). Instead, mechanized-cavalry groups and squadrons provided reconnaissance at the corps and division levels. These units were optimized for stealthy reconnaissance and lacked combat power. These characteristics reflected their Cavalry alignment. The Armored Force assumed responsibility for mounted-maneuver combat actions,

leaving reconnaissance as the primary function for mechanized-cavalry units. Unfortunately, once deployed, mechanized-cavalry units were often thrust into a much broader range of missions, requiring considerable improvisation. Mechanized-cavalry units included a collection of armored cars, light tanks, jeeps and half-tracks. These platforms generally proved weak in armor protection and anti-tank capability, although they performed effectively against non-tank targets. Despite their light nature, mechanized-cavalry organizations proved versatile and served in every major campaign from the Normandy landings to the conquest of Germany.

The United States, however, entered World War II with some faulty philosophy. The defense establishment believed that conventional tanks which could take on enemy Panthers and Tigers toe to toe wouldn't have the speed and mobility to avoid being flanked and bypassed, and therefore would not have the chance to fight. U.S. defense planners also calculated U.S. interests would be better served by large numbers of "battleworthy" (reliable) medium tanks rather than a smaller number of "unreliable" heavy tanks. As mentioned, production of heavy-tank designs such as the M26 Pershing therefore slowed, and resources were concentrated on mass-producing the M4 Sherman and TDs such as the M18 Hellcat. (See preceding section on the dust-up between Devers and McNair.) Since the Sherman medium tank would be inferior to enemy heavy tanks, they would have to avoid tank-vs.-tank combat as much as possible, leaving enemy tanks to the TDs.

In actual combat, however, the Germans were unable and unwilling to fight in the fast, free-flowing manner to which the U.S. forces were tuned to counter. Against the defensive and ambush tactics the Germans actually used, McNair's doctrine led to U.S. tanks having weaker guns and less armor protection than their German counterparts, and in the narrow confines of much of the terrain in Normandy, they could not avoid one-on-one encounters with German tanks.

Fortunately Patton, for one, knew how

to fight his tanks as the United States fielded them. Patton's strategy with his army favored speed and aggressive offensive action. Patton's Third Army typically employed forward scout units to determine enemy strength and positions. Self-propelled artillery moved with the spearhead units and was sited well forward. Light aircraft such as the Piper L-4 Cub served as artillery spotters and provided airborne reconnaissance. Once the enemy was located, the armored infantry would attack, using tanks as infantry support. Other armored units would then break through enemy lines and exploit any subsequent breach, constantly pressuring withdrawing German forces to prevent them from regrouping and reforming a cohesive defensive line. U.S. armor advanced using reconnaissance by fire, and the .50 caliber M2 Browning heavy machinegun proved effective in this duty, often flushing out and killing German *panzerfaust* teams waiting in ambush as well as breaking up German infantry assaults against the armored infantry.

An example of the success of Patton's strategy was the fighting around Arracourt in September 1944. The battle was part of the Lorraine Campaign, in which the German LVIII Panzer Corps mounted a series of counterattacks to stem the avalanche of Allied troops that had poured across France following their breakout from the Normandy beachhead. The principal fighting involved elements of 4th Armored Division led by LTC Creighton Abrams. The flexible organization and combined-arms nature of this formation permitted it to attach and detach units as necessary to meet enemy threats. This

flexibility allowed U.S. forces to employ combined-arms teams to outmaneuver and outfight German forces equipped with superior tanks whose frontal armor could not be penetrated easily by American tank guns. The 4th Armored Division shifted forces as much as eight to 10 kilometers to meet German probes. American forces also launched local attacks wherever possible against flanks and weak points, thereby retaining the element of surprise. The battle concluded with the repulse of the German attack and the destruction of two entire panzer brigades at a cost in materiel of only 21 American tanks.

When the war ended, armored organizations had demonstrated their value in every theater in which American forces fought. The armored division constituted a powerful, mobile combined-arms mix. Its organizational flexibility, combat power, high operational tempo and command arrangement ensured it a place in the postwar Army. The tank was considered the optimum anti-tank system, and its versatility led to the abolition of specialized TD units and the emergence of the main battle tank (MBT) concept. Conversely, the mechanized-cavalry experience revealed a universal desire for more effective reconnaissance organizations and equipment that would ultimately result in the creation of the armored-cavalry regiment and more robust divisional Cavalry squadrons.

Post-World War II: 1950s-1960s

The years immediately after World War II were marked by efforts to analyze the wartime experience and



Figure 5. M4 Shermans at the Battle of Arracourt. (U.S. Army Signal Corps photo)

incorporate lessons-learned into mounted maneuver training, organization, materiel and doctrine. In 1946, Fort Knox hosted the first annual conference dedicated to Armor issues. Future development, however, hinged on the creation of a permanent Armor Branch. The Armored Force had been created by the Army leadership in World War II as a "service test" to permit the rapid creation of the mechanized forces considered necessary for the war effort, but the organization lacked the legal foundation of the other combat arms. Hence, Army leaders now focused upon the creation of a permanent branch, its impact and whether it would include the Cavalry.

The Army Organization Act resolved the branch question in 1950. Under this legislation, a single Armor Branch emerged to govern both tank and cavalry development. A separate Cavalry Branch ceased to exist. A single command now bore responsibility for the development of armored formations, separate tank battalions and cavalry units. The branch's birthdate became Dec. 12, 1776, to reflect its combined Cavalry and Armor heritage.

The years following the end of World War II provided a different type of challenge for mounted-maneuver organizations. In Europe, the Army found itself responsible for governing a large section of Germany and Austria. The war-induced chaos in these areas, coupled with a potentially hostile population, generated the need for a means of providing security and maintaining order. To assist in these tasks, the Army created the Constabulary in July 1946. The creation of a Constabulary School modeled on the Armored School at Fort Knox helped immerse Soldiers in German language, culture and the legal responsibilities associated with their duties. By 1948 a reorganized German police force began to assume many of the functions the Constabulary initially conducted.

The onset of the Cold War and the growing threat of Soviet aggression triggered a change in the Constabulary's mission and organization. A number of Constabulary units were restructured to form the Army's first armored-cavalry regiments. The Constabulary continued to support major

law-enforcement activities, but it also began to increase its combat capability through the acquisition of medium tanks and increased tactical training. These changes reflected a growing desire for more combat power in Germany to protect Central Europe from Soviet aggression.

Adapted from U.S. Army Armor School Pamphlet 360-2, This is Armor, and other sources.

Next edition: Part 2 of the Armored Force history.

Further reference

[U.S. Army Armor School Pamphlet 360-2, This is Armor.](#)

Armor Museum Director Len Dyer discusses tank development in "Tank Talk" on Fort Benning TV, <https://www.youtube.com/watch?v=tSXR72MUruM>.

The Sheridan tank dedication on Eubanks Field July 10, 2015 is featured at https://www.youtube.com/watch?v=kZf3L_5pXfl.

More historical articles can be found in the "Armor" section of eARMOR's heritage page, <http://www.benning.army.mil/armor/eARMOR/Heritage.html>.

Notes

¹ Chaffee was called the "Father of the Armored Force" for his role in developing the Army's tank forces. Commissioned a lieutenant of Cavalry in 1906 after graduating from the U.S. Military Academy, he won recognition as the "Army's finest horseman." The M24 Chaffee light tank was later named after him. He died Aug. 22, 1941, of cancer in Boston. Chaffee's associates admired his persistence in the face of a lack of organizational and financial support he and other tank-warfare enthusiasts received in the 1930s. Especially see retired MG Robert W. Grow, *The Ten Lean Years: from the Mechanized Force (1930) to the Armored Force* (1940). Manuscript in Patton Museum Collection, Fort Knox, KY. For a description of Chaffee, see Mildred Gillie, *Forging the Thunderbolt* (Harrisburg, PA, The Military Service Publishing Company, 1947). Gillie worked with the now-missing Chaffee Papers.

² COL Bruce Palmer, "Mechanized Cavalry in the Second Army Maneuvers," *Cavalry Journal*, November-December 1936.

³ Gillie.

⁴ Ibid.

⁵ Patton is perhaps best known for his leadership of Third U.S. Army in France

and Germany following the Allied invasion of Normandy in 1944. Patton led Third Army in a highly successful, rapid armored drive across France. He led the relief of beleaguered U.S. troops at Bastogne during the Battle of the Bulge and advanced his army into Nazi Germany by the end of the war. Patton was commissioned a second lieutenant in the Cavalry June 11, 1909.

⁶ The M26 Pershing was the culmination of a series of tank prototypes that began with the T20 in 1942. The M26 was a significant design departure from the previous line of U.S. Army tanks that had ended with the M4 Sherman. A number of design features were tested in the various prototypes, some of which were experimental dead ends, but many design features became permanent characteristics of modern U.S. Army tanks. The prototype series began as a medium-tank upgrade of the M4 Sherman and ended as the U.S. Army's first operational heavy tank, according to R.P. Hunnicutt in his book *Pershing, A History of the Medium Tank T20 Series* (Feist Publications, 1996). After the initial prototypes were built in early 1943, an additional 250 T23 tanks were produced from May-December 1943. These were the first tanks in the U.S. Army with the 76mm M1A1 gun to go into production, according to Hunnicutt. However, the T23 would have required that the Army adopt an entirely separate line of training, repair and maintenance, and so was rejected for combat operations. The T25 and T26 lines of tanks came into being in the midst of the U.S. Army's heated internal debate in mid-1943 to early 1944 over the need for tanks with greater firepower and armor. A 90mm gun mounted in a massive new turret was installed in both series. The T26 series was given more frontal hull armor, with the glacis plate increased to four inches (10 centimeters). This increased the weight of the T26 series to more than 40 short tons (36 tonnes) and decreased its mobility and durability, as the engine and powertrain were not improved to compensate for the weight gain. Chrysler built a single prototype of a T26 turret mounted on an M4A3 chassis in Summer 1944 but did not progress into production. See also George Forty, *United States Tanks of World War II* (Blandford Press, 1983). According to Forty, the Ordnance Department recommended that 1,500 of the T26E1 be built. The Armored Force recommended only 500. Although the AGF rejected the tank's 90mm version and wanted it to be built with the 76mm gun instead, somehow Ordnance managed to get production of the T26E1 started in November 1944.

⁷ Steven J. Zaloga, *Armored Thunderbolt*, Stackpole Books, 2008.

⁸ In addition to infantry, artillery and close air support, the U.S. combined-arms team included engineers, and the tank component was supplemented by the TD concept. McNair is most closely identified with proponentry of TDs/anti-tank weapons. Having studied early German successes, McNair had come to believe U.S. forces would be faced with fast-moving enemy forces who would seek to bypass, isolate and reduce U.S. forces in a replay of the Fall of France. To counter the enemy blitzkrieg, McNair sought to improve the organic anti-tank strength of U.S. infantry divisions by attaching towed anti-tank guns and equipping the infantry with hand-held bazookas. To stem the flood of marauding panzers, fast-moving, powerfully armed TD battalions were created to be held back and used in the counterattack.

Acronym Quick-Scan

AC – Active Component
ACAV – Armored Cavalry Assault Vehicle
ACR – armored Cavalry regiment
AGF – Army Ground Forces
AGS – Armored Gun System
ARNG – Army National Guard
BCT – brigade combat team
BMP – *boyeva mashina pekhoty*
CFV – Cavalry Fighting Vehicle
COIN – counterinsurgency
FBCB2 – Force XXI Battle Command Brigade and Below
FCS – Future Combat System
GHQ – General Headquarters
IED – improvised explosive device
MBT – main battle tank
MCoE – Maneuver Center of Excellence
MGS – Mobile Gun System
NATO – North Atlantic Treaty Organization
NTC – National Training Center
RC – Reserve Component
RPG – rocket-propelled grenade
RSTA – reconnaissance, surveillance and target acquisition
SAM – surface-to-air
SBCT – Stryker brigade combat team
TD – tank destroyer
TO&E – table of organization and equipment
TOW – tube-launched, optically tracked, wire-guided

Armored Force key dates

| | |
|---------------|---|
| Jan. 26, 1918 | U.S. Tank Corps established |
| 1920 | National Defense Act of 1920 abolishes Tank Corps and assigns responsibility for tank development to Infantry Branch |
| 1928 | Experimental Mechanized Force established at Fort George G. Meade, MD |
| 1930 | Mechanized Force created at Fort Eustis, VA |
| 1931 | Army implements new mechanization policy that permits Cavalry development of a mechanized component |
| 1931 | Mechanized Force disbanded; remnant element renamed Detachment for Mechanized Cavalry and Camp Knox, KY, becomes home of mechanized cavalry |
| 1933 | 1 st Cavalry Regiment (Mechanized) arrives at Fort Knox |
| July 10, 1940 | Army authorizes creation of the Armored Force at Fort Knox as a “service test” to centralize mechanized development |
| 1942 | Office Chief of Cavalry abolished |
| 1943 | Armored Force redesignated Armored Command |
| 1944 | Armored Command redesignated as Armored Center |
| 1945 | Armored Center inactivated |
| 1946 | Armored Center reactivated |
| 1948 | Organization of the first armored-cavalry regiments |
| June 28, 1950 | Army Organization Act establishes Armor as separate branch of Army |
| 1972 | MBT task force established at Fort Knox to develop requirements for new tank, which becomes the Abrams tank |
| 1973 | Arab-Israeli October War triggers changes in Army doctrine and increased emphasis on platforms capable of fighting on highly mechanized battlefield |
| 1980 | Fielding of M1 Abrams tank begins |
| 1981 | Fielding of M2/M3 Bradley Fighting Vehicle begins |
| 1990 | Army authorizes fielding of humvee to all maneuver-battalion scout platoons |
| 1992 | First light ACR created when 199 th Separate Motorized Infantry Brigade is reflagged as 2 nd ACR |
| 1994 | Desert Hammer VI becomes first test of prototype armored brigade at NTC |
| 1995 | Fort Knox hosts advanced warfighting experiment Focused Dispatch, which demonstrates ability to integrate virtual and live training |
| 1999-2000 | Fort Knox hosts platform-performance demonstration to assess available vehicles for use in new medium brigade, later designated the Stryker BCT |
| 2003 | Modularity initiative restructures Army around BCTs as principal maneuver elements |
| Oct. 1, 2013 | MCoE reorganizes into the university design with training brigades focused and aligned specifically for initial military training and functional training |

Adapted from U.S. Army Armor School Pamphlet 360-2, This is Armor.

Armor Corps Celebrates 75th Anniversary

by Anna Pedron

In honor of the 75th anniversary of the U.S. Army Armor Corps, the Armor School dedicated an M551 Sheridan tank July 10 at Eubanks Field.

“Today is a great opportunity to celebrate the history, lineage and traditions of both the United States Army Armor Corps, which the 75th anniversary of its inception is today,” said CSM Michael Clemens, command sergeant major of the Armor School, “and also the 73rd Armor Battalion, which is an airborne battalion with the 82nd Airborne Division, both represented by the Sheridan behind me.”

The M551 Sheridan – a tank touted as being mobile, amphibious, air-droppable and armed with gun and missile systems – was developed primarily to support airborne divisions. It entered service in 1967 during the Vietnam War and worked in various combat operations (including Operations Desert Shield and Storm) until 2004, when the model was retired.

“It is very appropriate that today, on this great day, we enshrine this vehicle here on this special field, in front of all of these soon-to-be paratroopers, because of what this vehicle represents,” said BG Scott McKean, Chief of Armor. “There was an entire division of paratroopers who demanded (its) presence on every operation they conducted because of what this vehicle brought ... a corps of Soldiers that were really the ones that made this battalion, the 3rd of the 73rd, and its predecessor, 4-68 Armor, so special.”

“We are here to dedicate the armor reconnaissance airborne assault vehicle, better known as the Sheridan tank, into the museum. A fitting tribute to all who served and fought on this platform,” said keynote speaker CSM John W. Troxell, command sergeant major of U.S. Forces Korea. “From combat in Vietnam to Desert Storm – this vehicle was the ‘combat arm of decision’ of

82nd Airborne Division. The Sheridan was a unique blend of firepower, mobility, shock effect and protection.”

Troxell told stories of his time in the Sheridan, describing the 1989 U.S. intervention in Panama (Operation Just Cause), where 10 Sheridans were air-dropped from a C-141 aircraft directly into enemy territory, where they accompanied 82nd Airborne Division.

He told the crowd about the ‘culminating event’ for him during Operation Just Cause: when his section was shopped to 1st Battalion, 75th Ranger Regiment, and he was rumbling down the streets of Panama City with a squad-plus of heavily armed Rangers on top of his vehicle moving to an assault objective.

“I knew that this was going to be the precursor to what we were going to be doing in the future,” Troxell said. “That there was the beginning of the Special Operation Force general-purpose integration that we now do so well in places like Iraq and Afghanistan.”

McKean, Clemens and Troxell all served with 73rd Armor Battalion and were all very proud to be a part of the Sheridan dedication ceremony.

“It’s awesome to bring a bit of my own personal history, as someone who served on this vehicle, and in that battalion, here to Fort Benning and represent that to the community at large,” Clemens said.

“My time spent on this vehicle



Figure 1. An M551 Sheridan tank is dedicated July 10 at Fort Benning’s Eubanks Field.



Figure 2. CSM John W. Troxell, former command sergeant major of the U.S. Army Armor School, tells stories of his time in a Sheridan tank.

and being associated with the finest American paratroopers will always be my fondest memories of my long career,” Troxell said.

As part of the celebrations for the 75th anniversary of the Armor Corps, the Armor School hosted events including an armor run, organizational day and one-station unit training graduation.

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Making Tanks Safe: Armored Force Medical Research Laboratory

by Dr. Sanders Marble

In July 1940 the Army established the Armored Force at Fort Knox, KY. It was responsible for establishing armored formations, doctrine and training in the use of armored vehicles. Its first surgeon was COL Albert Kenner (appointed in October 1941), who was well known to armor pioneer COL George Patton, probably a factor in Kenner's selection. Kenner had to devise medical support for armored units from scratch and select their medical equipment, but also determine the medical risks of the new environment. Right away he knew he needed a research program to make tanks safe for their crews and to maximize the battlefield performance of the man-machine combination.

One of Kenner's first steps was to request money to, as he described it, "study the human equation in ... armor and vehicles used by armored forces. ... I thought that a tank might be likened to occupational hazard and studied it from that standpoint. The tanks originally had been built without reference to the crews."¹ He laid out a long list of research topics: removal of the injured, ventilation, carbon-monoxide exposure, visual disturbances, flash burns, fatigue, postural hazards and injuries, head injuries, whiplash, tinnitus, rations, excessive temperature, dust, belt supports for back and trunk, sudden decompression, even blast effects from landmines. Kenner's commander, MG Jacob Devers, concurred in December 1941; Secretary of War Henry Stimson approved in February 1942; the National Research Council granted \$300,000; ground was broken in March 1942; and the building (still being completed) was occupied in September 1942.

The Armored Force Medical Research Laboratory (AFMRL) was formally established in October 1942. (Field work had already begun, with some staff spending Summer 1942 at the Camp Young, CA, Desert Training Center studying the effects of dry heat on tank

crew.) Headed by a physician, AFMRL had medicine, physiology, chemistry, ventilation, physics and engineering sections.

AFMRL had a threefold mission:²

- Identify the sources and evaluate the magnitude of the stresses imposed upon the tank crew and other weapon operators.
- Determine the anatomical, biomechanical, physiological and psychological limits of the (assumed healthy) men selected as soldiers – what would make them unfit to fight.
- Find the balance between operating demands and human capabilities to avoid soldier breakdown and/or weapon failure.

The lab had plenty of work to do for the tankers. What protective clothing did they need? How safe were the overalls? (An early model had buttons that absorbed heat and blistered the crews.) What could the Army do to slow down their fatigue, including better seat design? Where should vehicle escape hatches be? How could tankers safely see out during the day and at night? Should tankers routinely wear earplugs to dampen noise? What about temporary deafness after repeated gunfire? How could the Army deal with claustrophobia?

The initial seven research areas were:³

- Cold-weather operations.
- Operations at high temperatures (particularly in tanks).
- Toxic gases in armored vehicles.
- Dust exposure in armored vehicles.
- Crew-fatigue research.
- Vision in tanks.
- Night vision from tanks.

Much research went into the tank as a working environment – what is now understood as ergonomics – and safety. One of the scientists recalled a very practical issue: "The M-4 tank of 1942 had no ventilation provided to specifically meet the needs of the crew.

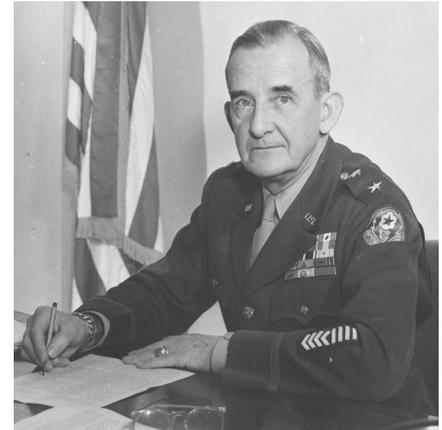


Figure 1. Albert Kenner as a major general. He is wearing the European Theater of Operations-Advanced Section shoulder-sleeve insignia. (Photo courtesy U.S. Army Military History Institute)

Engine-cooling air was drawn into the turret and through a heat-exchanger to the engine compartment. But in a stationary tank with the engine not operating, the men received no exchange air. Since the 75mm gun released considerable carbon monoxide and ammonia as the gun breech opened after firing, there was a clear toxic-gas hazard that needed to be corrected. This had not been done, I think, because it was usual to practice gunfire with the turret hatch open. Our systematic measurements of carbon monoxide and ammonia concentrations under various conditions of firing gave convincing proof of the hazard. This led to development of a compact fan to provide the necessary exhaust ventilation. The report recommending installation of such fans was not approved on the grounds that the tank already had too many gadgets! We succeeded, however, in getting two members of the headquarters general staff to take part in another test-firing of 10 rounds of 75mm shells with the tank buttoned up. One general was to be the gunner, and the other would load. I was the commander of the crew. When the ammonia reached about 400 ppm after firing four rounds, the generals were weeping copiously and ready to quit, but they were game to complete the

test. Subsequently, the decision respecting our recommendation was reversed.”⁴

Similarly, early tanks had forward air intakes. That was fine as long as there was no long line of vehicles on the road in front of you, in which case each vehicle down the column got more and more carbon monoxide. Simply repositioning the exhaust vents helped that problem.

Other problems were military but not purely armored. The scientists designed a gunsight that reduced magnification to get a broader field of view and found crews were hitting the target in one-quarter the previous time. A new artillery gunsight made use of a direct-reading scale within the field of view of the telescope itself and eliminated the major source of error. The frequency of error was reduced from 107 errors per 1,000 operations to just seven, and untrained personnel did better than those trained to operate with the old sight.⁵

Still other research was useful to the

military but not purely military. The lab did some basic physiology work that needed doing: how much heat can the body shed, and through what mechanisms? How much exertion can people stand at various heat/humidity combinations? (This was when the Army decided that wet-bulb temperature was the number to monitor for heat hazards.) They learned that salt tablets were not needed, even if someone was sweating literally gallons a day, and that prompt water replenishment was important, not just total water replenishment. Many of the staff came from civilian physiological-research labs, and they were probably happy to do work related to their civilian-research interests. They investigated hot- and cold-weather clothing; cold-weather shoes and overshoes; and how to design footgear to actually handle the stress of marching rather than look smart on parade.

To do this work, the lab had remarkable facilities: “The laboratory was equipped with cold and hot rooms

which approximated the conditions to which men were exposed in the field. The cold room could produce temperatures as low as [minus 63 degrees Fahrenheit], with wind velocities as high as 25 or 30 miles per hour. The hot room was capable of maintaining a temperature of 140 [degrees Fahrenheit]. This heat could be the intense dry heat of the desert or the steaming, humid heat of the jungle. A special ‘tight room’ was provided to investigate dusts and gases in relation to tank ventilation. Sufficient space was provided so that the largest vehicles used by the Armored Force could be accommodated, as well as a number of men at one time.”⁶

At the time, the Army Medical Department had no central research and development organization, and AFMRL worked under Preventive Medicine, specifically the Occupational Health and Industrial Medicine Section. Without a central control, liaison was a key, and AFMRL coordinated research projects with U.S. medical labs (civilian and



Figure 2. Medics training on evacuating wounded from a training aid of a Sherman tank turret. (Pencil drawing by Fredrick Shane, 1944. Courtesy Army Art Collection and Army Medical Department Museum)

military), with the Armored Force Board and with the British Armored Fighting Vehicles Physiological Laboratory. Cooperation with the Armored Force Board, also on Fort Knox, was especially close; staff were interchangeably available for advice and consultation, and the facilities of the board and laboratory were made available to each other.

By December 1943, no new designs for tanks proceeded beyond the mockup stage until they had been made the subject of study and report by the laboratory. All pilot models of new vehicles were tested by the laboratory with respect to the gun-fume hazard, contamination by carbon monoxide, placement and mounting of sights, lighting, placing of controls and seating.⁷

One thing led to another with some of the research: hot- and cold-weather physiology led to clothing research, protective clothing for cold climates and hot-weather clothing that would not itself cause overheating. By mid-war the clothing-research portfolio was assigned to AFMRL and became its largest function.⁸ Its expertise in physiology also led to it being the natural place to consider what fitness was and what the ideal physical-fitness test should contain, as compared to what was being done. Since nutrition is related to physiology, a major research project began on rations. Field rations were tested both in the United States and in combat zones – groups of soldiers who had eaten only C-rations for more than 120 days had blood and urine tests to determine vitamin levels and other factors. The major finding was something fairly obvious: nutrients in food that is not eaten are worthless, so the Army needed to make sure the food is palatable and popular.

Other key research, apparently growing out of the hot/humid clothing tests for jungle warfare, was on atabrine dosing. The world's standard

anti-malaria drug was quinine, and the major supply source was the Dutch East Indies (now Indonesia), but that had recently been occupied by the Japanese. The United States had recently developed a synthetic anti-malaria drug, atabrine, and needed clinical research to test the effectiveness, dosing and dosing schedules. They learned what an effective level was, how many days it took the body to reach that level, how many days after leaving the malarial region an individual had to take the drug, and a host of other questions. Having a large pool of test subjects was important to quickly solving the questions, and Fort Knox had those (one test used 1,000 soldiers), but there was no particular reason to use AFMRL.

In February 1944, AFMRL was transferred from Armored-Force control to the Medical Department, but the director reminded his staff, "The primary function of the Medical Research Laboratory continues to deal with the problems of armored vehicles."⁹ The Armored Force Board had absorbed the ergonomics and safety concerns, and the lab was no longer needed solely for tankers. On April 1, 1947, AFMRL was redesignated the Medical Department Field Research Laboratory. The increasing focus on physiological research meant it was reasonably absorbed into the U.S. Army Research Institute of Environmental Medicine when that was established in 1961.

Dr. Sanders Marble is the senior historian in the Office of Medical History, Office of the Chief of Staff, Medical Command. He has been a historian with the Army Medical Department since 2003. Dr. Marble studied history at the College of William and Mary and King's College of the University of London. He has written a variety of books and articles on World War I, military technology and military medicine.

Notes

- ¹ Albert Kenner interview with Forrest Pogue, May 27, 1948, U.S. Army Military History Institute.
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- ³ Historical Section, Army Ground Forces, *Study No. 27, The Armored Force Command and Center*, Washington, DC, 1946.
- ⁴ Hatch.
- ⁵ Hatch.
- ⁶ *The Armored Force Command and Center*.
- ⁷ *The Armored Force Command and Center*.
- ⁸ Ebbe Hoff and Phebe Hoff, *Medical Department, United States Army, Preventive Medicine in World War II, Volume III, Personal Health Measures and Immunization*, Washington, DC: Government Printing Office, 1955.
- ⁹ *The Armored Force Command and Center*.

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Acronym Quick-Scan

AFMRL – Armored Force Medical Research Laboratory



Figure 1. Soldiers from 1st Battalion, 63rd Armor, conduct a field refueling on an M48A1 at Fort Riley, KS, in 1963.

Armor in the 1960s-70s

Text and photos by retired LTC James Olmstead

The 1960s and 1970s saw many transitions in Armor. The near-term World War II aftermath in Europe morphed into a deeper Cold War, followed by a shift of focus to Vietnam. U.S. Army Armor equipment changed markedly.

The M41 light tank was phased out; the M48- and M60-series tanks and the M551 Armored Reconnaissance Airborne Assault Vehicle (ARAAV) evolved, matured and waned. The MBT-70 development program with Germany started, sputtered and died. It was followed in the United States by the XM-803 program, which met a similar fate. As an interim replacement, 500-plus missile-launching M60A2s were fielded but withdrawn shortly thereafter, principally due to reliability and maintenance issues. Following these cancellations, the M1 Abrams was designed and developed.

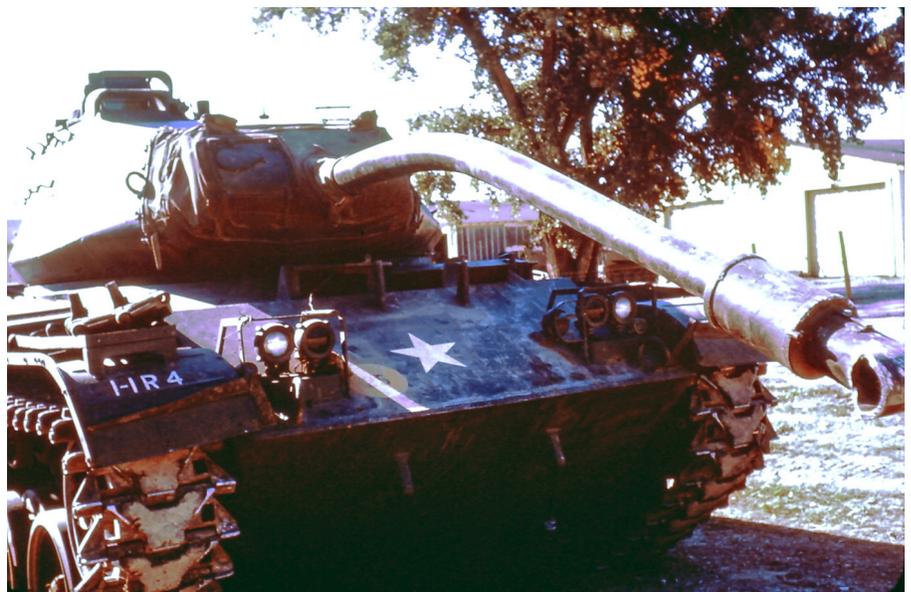


Figure 2. A 1st Battalion, 4th Cavalry (1st Infantry Division), M41 tank at Fort Riley, KS, in September 1963. The photographer's tank ran over its own gun tube when crossing a steep stream bank at night.

Evidence of this equipment turbulence was seen at the Armor School. The school trained turret mechanics for multiple models of tanks (and one combat engineer vehicle) with various combinations of optical and laser rangefinders, mechanical and solid-state ballistic computers, active and passive night illumination and sights, stabilized and unstabilized turrets, and 76, 90, 105 and 165mm conventional cannons/guns and 152mm missile/gun launchers. Much of this training occurred simultaneously because all turret components were fielded at the same time. Of course, crews moving among units with different tank models faced similar challenges. While the continental United States and U.S. Army Europe (USAREUR) received the full range of tank developments, U.S. Army units in Korea and Vietnam were focused on the M48-series tank and the M551 ARAAV.

In Europe, the stand-off between the North Atlantic Treaty Organization and Soviet Union/Warsaw Pact forces intensified with the erection of the Berlin Wall in 1961. USAREUR armored vehicles were fully uploaded with ammunition, fuel and rations, even while in garrison and adjacent to family housing areas. Periodic alerts, generally at night, could be “muster only” or “move-out” – the latter sometimes resulting in downed gates and fences as units moved to nearby dispersal areas within the two hours allowed. Extended field exercises would routinely find armored columns on the autobahns and tanks in small German villages. In winter, maneuvers across farmers’ frozen fields were common, as were claims for maneuver damage from tanks sliding on icy village cobblestones. Rail travel of armored vehicles to major training areas was routine but strictly managed by the Deutsche Bundesbahn.

Enlisted soldiers were identified in their service numbers as either “RA” (Regular Army, voluntary enlistment) or “US” (draftees, like Elvis Presley). Family housing and barracks were generally available and comfortable, many of them holdovers from German forces in World War II. Travel to and from Europe was either by charter air (frequently making necessary fueling stops



Figure 3. An M48A1 belonging to 1st Battalion, 63rd Armor, sits ready in a field-training exercise at Fort Riley, KS, in 1963.



Figure 4. A T34 tank is displayed at the Old Patton Museum facility opposite Boudinot Hall, U.S. Army Armor School, Fort Knox, KY, in 1963. The museum was in a World War II-era wooden frame building. The museum moved and the building was torn down in the late 1970s.



Figure 5. A soldier from 1st Battalion, 63rd Armor, 1st Infantry Division, washes an M48A1 after a field-training exercise at Fort Riley, KS, in September 1963.

in Newfoundland, Greenland and Ireland reroute) or via ship (*USNS Patch* and *Rose*.)

For families in Europe, the Non-combatant Emergency Order included mandatory briefings of evacuation procedures to embarkation ports (and, for a time, “leave your pets behind” was an unpopular instruction). Family cars were required to carry a three-day survival kit of water and blankets. Travel to and from West Germany to West Berlin was generally only by air or the duty train (with closed curtains over the windows.)

In the early 1960s, West Germany was a pleasant duty assignment. Most war damage had been repaired. Tiny cars (and massive Mercedes) shared the autobahns with tank columns, German police in convertible Porsches and an occasional, but authorized, Soviet “military liaison” officer taking notes and pictures. Chain restaurants had not yet populated the country, so a norm for a dinner out was the local *gasthaus* for schnitzel, pomfrits, salad and the local wine or beer. Seasonal fests were always fun, and the military recreation areas in Bavaria were available for relaxation or skiing in the Alps.

By 1966, the buildup in Vietnam began to impact forces in Germany as individual tours were curtailed and unit strengths were greatly reduced. However, USAREUR missions remained the same. RA officers had active service extended via “stop loss” actions necessary to meet requirements for Vietnam – many of them going to infantry assignments when they arrived there.

Retired LTC Jim Olmstead retired from the Pentagon after assignments on the Army and Joint Staff. His active-duty service also included tank units at Fort Riley, KS (M48), Fort Knox, KY (M48) and Germany (M60s). He was the executive officer of a mechanized infantry battalion at Fort Hood, TX; tank-gunnery instructor and branch chief in the Weapons Department of the U.S. Army Armor School (M60s and M551s) from 1971-1973; later chief of research and evaluation in the Weapons Department; and assigned to an aviation-support unit in Vietnam. His military schooling includes the Armor Officer's Basic and Advanced Courses, Motor



Figure 6. Armored cavalry platoon (3rd Battalion, 68th Armor) field-training exercise in Germany, 1964.



Figure 7. An M60 from 4th Tank Battalion, 68th Armor, in Germany, 1964, with M2HB on the pintle mount of the commander's cupola. The M85 machinegun was not issued. The battalion was withdrawn from Germany later in 1964.

Figure 8. Sign of the times: Checkpoint Charlie, West Berlin, 1965.



Figure 9. 3rd Battalion, 68th Armor, conducts rail-loading of M114s in the Baumholder training area, 1965. Rail travel of armored vehicles to major training areas was routine but strictly managed by the Deutsche Bundesbahn.

Officer's Course and Armed Forces Staff College. LTC Olmstead holds a master's degree in logistics management.

Acronym Quick-Scan

ARAAV – Armored
Reconnaissance Airborne
Assault Vehicle
RA – Regular Army
USAREUR – U.S. Army Europe



Figure 13, above. Repairing a track thrown to the inside of the sprocket when navigating a narrow path in Germany in 1965. No fun, as the other track was thrown, too.



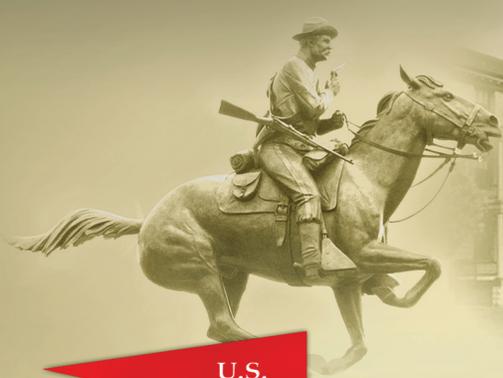
Figure 10. Annual tank-gunnery qualification for 3rd Battalion, 68th Armor, in M60 and M60A1 tanks, Grafenwoehr, 1965. Note previous-year yellow qualification silhouette on turret.

Figure 11, right. M114A1 swimming practice (3rd Battalion, 68th Armor) in the Rhine River estuary north of Mannheim, Germany, in 1965. Note marginal freeboard, buttoned-up driver, yellow buoy with rope and engineer World War II-era DUKW safety vehicle.



Figure 12, right. Armor demonstration, Fort Knox, 1968. From left, M728 Combat Engineer Vehicle, M60A1 and M48A2C tanks, M114A1 Armored Reconnaissance Vehicle and M113A1 Armored Cavalry Assault Vehicle.





U.S.

1838

School of Cavalry Practice is founded at Carlisle Barracks, PA

1890

Cavalry and Light Artillery School is founded at Fort Riley, KS; training there ends in 1946

March 5, 1918

Army Tank Service is formed; it was disbanded in 1920

Summer 19

Fort Riley Mane 1st Cavalry Regim Cav unit to be "ur

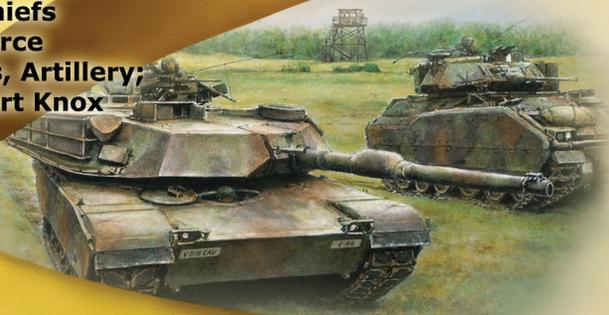


July 20, 1950

Defense Reorganization Act of 1950 formally recognizes Armor Branch as a continuation of Cavalry Branch

May 8, 1990

Army unveils monument to the first three chiefs of the Armored Force (Chaffee, Cavalry; Devers, Artillery; Gillem, Infantry) at Fort Knox



Nov. 11, 1990

Memorial dedicated to the Armored Forces at approach to Arlington Cemetery, DC

September 2005

Congress passes law setting the stage for Armor School to move from Fort Knox, KY, to Fort Benning

June 10, 2011

Armor School, 194th Arm Brigade and 316th Cava Brigade case colors at Fort



U.S. ARMY ARMOR



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1932-1938
Army Tank School operates
at Fort Benning, GA

Summer 1936
Allegan (Michigan) Maneuvers,
1st Cavalry Regiment



Summer 1940
Louisiana Maneuvers,
7th Cavalry Brigade;
tests Marshall's concept
of "armored force"

October 1940
Army Armor School is
established at Fort Knox, KY;
first known as Armored Force School



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Knox

June 20, 2011
194th Armored Brigade
and 316th Cavalry Brigade
uncase colors under Maneuver
Center of Excellence, Fort Benning

September 2011
Armor School
officially stands up
at Fort Benning

OR SCHOOL



SADDLES AND SABERS



Unleashing Tactical Audacity: 8th Texas Cavalry Regiment in the Civil War

by MAJ Nathan A. Jennings

"The principal value of cavalry is derived from its rapidity and ease of motion. To these characteristics may be added impetuosity; but we must be careful lest a false application be made of this last." -Antoine-Henri Jomini

Cavalry has long served as the combat arm of both reconnaissance and decision in Western warfare. Harkening back to antiquity when Alexander of Macedon employed armored *Hetairoi* cavalry to fracture Persian armies, a steady march of ever-modernizing mounted formations have fulfilled their mandate, as now described by U.S. Army doctrine, to "develop situational understanding through action while possessing the mobility to concentrate rapidly."¹ The American Civil War, in particular, which saw an explosion of diverse functions by horse cavalry in combined-arms campaigns from New Mexico to Georgia, provides a

rich military landscape for assessing the potential impact of unleashing mobile firepower across complex operational environments.

Among the multiplicity of formations that rode in support of both Union and Confederate armies, the 8th Texas Cavalry Regiment, Confederate States Army, offers a compelling case study. Popularly known as Terry's Texas Rangers, this unit achieved an exceptional record of reconnaissance, screening, raiding and decisive shock charges as they supported linear confrontations of massed infantry armies across the Trans-Mississippi Region and Eastern Theater between 1862 and 1865. This tactical effectiveness stemmed from, in large measure, the Texans' internalization of the offensive fundamental of *audacity*, an intangible that Field Manual (FM) 3-20.971, *Reconnaissance and Cavalry Troop*, defines as

"boldness" that is "essential to success in offensive operations."²

While many mounted units in the Civil War boasted similar competencies, 8th Texas Cavalry's fighting methods were informed by its home society's unique experience with warfare on the Great Plains. Decades of combating Comanche and Mexican cavalries had catalyzed an aggressive martial culture that the governor of Texas defined as a "passion for mounted service" during Confederate mobilization.³ Beginning with the Texas Rangers' unprecedented adoption of Colt revolvers in the early 1840s on the Indian Frontier, and then proven on the world stage by Texan irregulars in the Mexican-American



War, Lone Star horsemen came to specialize in audacious maneuver. This tactical prowess, combining fighting élan with exceptional horsemanship and firepower, would yield similar benefits during the War of Rebellion.⁴

Mobilizing regiment

Terry's Texas Rangers first organized in Houston in September 1861 in response to the great Confederate call to arms during initial mobilization. A month prior, the founders of the unit, Benjamin Terry and Thomas Lubbock, had advertised that they were "authorized by the Secretary of War of the Confederate States of America to raise a regiment of mounted rangers for service in Virginia."⁵ Another recruitment announcement proclaimed that each company would consist of "not less than 64 nor more than 100 privates," and that "each man must furnish the equipment for his horse, and arm himself either with a short rifle or double-barrel shotgun, and a six-shooter."

The wording of these advertisements emphasized the distinctive frontier character of the regiment. The intentional designation of mounted rangers for assignment in Virginia indicated that Richmond fully understood the perceived tactical capabilities of Texan horsemen. The concurrent requirement for the cavalrymen to equip themselves with both medium and short-ranged weaponry also revealed the intended versatility of the regiment. In short, both the Confederate War Department and local officials hoped to capitalize on Texas' experience with enduring border conflict by placing a body of aggressive Lone Star cavalry at the center of the Civil War's decisive theater.

The *New Orleans Picayune* agreed with this intent as the regiment mobilized. It wrote of the Texan reputation for tactical effectiveness: "If this regiment does not make its mark on the Lincolnites, there is no virtue in strength, courage, patriotism and [thorough] knowledge of the use of horses and arms."⁶ Under these high expectations, the unit mustered 10 companies at Houston Sept. 7, 1861, drawing primarily from the counties of McLennan, Brazoria, Matagorda, Gonzales, Bastrop, Fayette, Bexar,

Goliad, Fort Bend, Harris and Montgomery. Volunteer James Blackburn, who later served as a company commander and left a valuable account of his wartime service, wrote that "[1,000] men were expected to constitute the regiment, but more and more were enlisted until the number reached 1,170, an average of 117 to each company."⁷

From the very outset of mobilization, 8th Texas Cavalry rode with a spirited élan that would characterize their approach to warfare. Committed to the Southern cause, the volunteers elected to contract for duration of the war, rather than a three- or 12-month enlistment, reflecting their nationalistic motivations. This inspiration, rooted in Texas' culture of frontier militancy, perfectly illustrated the early enthusiasm for the war effort during 1861 and 1862 as privation and conscription had not yet seriously afflicted morale across the Confederacy. The generating counties for the regiment, which conspicuously represented frontier regions with intense histories of friction with Amerindian and Mexican opponents, likewise indicated the depth of the martial tradition the recruits internalized.

The newly formed unit, which had yet to be numerically designated by Richmond, deployed without horses in September 1861. They traveled by individual company first to New Orleans, where they received orders redirecting them to service in Kentucky, and then moved on to Bowling Green. While en route, the Texans predictably acquired the popular title "Texas Rangers," as Southerners in Louisiana and Tennessee lionized them because of their savage appearance, bristling weaponry and volatile behavior. Back home, of course, the press had been referring to the regiment as "Terry's Rangers" and "Terry's Ranging Regiment" since initial mobilization.⁸

Upon arriving at the Confederate Army of the West's headquarters in Bowling Green, the Rangers, now officially designated by Richmond as 8th Texas Cavalry, elected Terry as their commanding officer. More importantly, they received a full complement of Kentucky-bred horses and organized themselves along the doctrinal structure

of a Confederate cavalry regiment. Blackburn remembered that the unit's companies drew letters "A to K, inclusive, except J." The department command then issued orders for the Texans to conduct the historical cavalry tasks of "patrol and picket" from "Bowling Green north as far up as Woodsville on the Green River."⁹

Regiment in combat

On Dec. 17, 8th Texas Cavalry engaged in its first action near Woodsville, KY, where they began to establish an enduring reputation for aggressive lethality. Henry Graber, another Texan who recounted his combat experience, described how while on a reconnaissance in support of their assigned infantry brigade near the town, they "discovered a line of infantry lying down behind a rail fence" while the Confederate infantry were "at least a mile behind." The rebel brigade commander, Thomas Hindman, ordered Terry to "withdraw the regiment and let him bring up the artillery and infantry." Disinclined to wait, the cavalryman arrogantly said, "General Hindman, this is no place for you; go back to your infantry."¹⁰

Terry proceeded to order his men to charge on horseback in two squadrons against the Federal line. Blackburn, as he described the regiment's assault, wrote that the colonel "immediately ordered a charge, emphasizing the order with an oath not easily forgotten, so we made a rush for those brushes concealing a considerable force of bayonets fixed ready to receive us." As the compacted ranks of horsemen careened into the North's formation, he concluded by boasting that "with our shotguns loaded with buckshot we killed, wounded and scattered that command in short order."¹¹

This charge, and the intensity of their first moment of combat with Union soldiers, found the Texans well prepared for the savagery of close combat. Graber remembered closing violently with the waiting infantry, writing that "in less time than it takes to tell it, we charged them, delivering our fire of double-barreled shotguns, [breaking] down the fence and getting among them with our six-shooters." He then recalled the success of the

maneuver, noting that “in a few minutes we had run over them.”¹² Though not strategically consequential, this tactical action established the template for the audacious, and infamous, shock charge that Terry’s Texas Rangers would employ on many occasions throughout the war.

This kind of attack, by formations of screaming horsemen, proved a terrifying spectacle for defending troops. COL August Willich, commander of the opposing 32nd Indiana Infantry Regiment, described the action from the perspective of the foot soldiers who received the thundering assault: “With lightning speed, under infernal yelling, great numbers of Texas Rangers rushed upon our whole force. They advanced to [15] or [20] yards of our lines, some of them even between them, and opened fire with rifles and revolvers.”¹³ The Texans suffered just four dead and eight wounded, while the Federals lost 11 killed, 22 wounded and five missing.

Despite the regiment’s success in the skirmish at Woodsville, Terry died during the assault. The unit retained the name of its organizer and first leader, though they would serve under several other colonels of note in the Confederate officer corps. After several months of reconnaissance and skirmishing activities, the Texans moved south to Tennessee, following the retrograde of the western Confederate line in the spring of 1862.

The clash of American armies soon catapulted 8th Texas Cavalry into the heart of the struggle for the Trans-Mississippi region. On April 6 and throughout the next day, they participated in the strategic Battle of Shiloh, where the Confederate Army of Mississippi, with 44,000 men, attempted to defeat the Union Army of Tennessee’s 66,000 soldiers. Learning the limitations of mounted élan on a combined-arms battlefield, the Rangers conducted two costly charges against the Federal left, one mounted and another on foot, but both attempts ended in failure. Blackburn recalled that they experienced their “first repulse” in this battle, with the Union lines “resisting with great stubbornness.”¹⁴

Despite the setback, the regiment proved its value the next day as the

stymied rebel army retrograded south to Corinth. Blackburn recorded that the Texans were “employed in patrolling the space now behind the army and as rear guard,” performing another timeless cavalry support function. When Ulysses Grant sent a division to pressure the Confederate retreat, famed rebel cavalier Nathan Bedford Forrest included the Rangers in a spontaneously formed cavalry brigade to interdict the attack. Blackburn remembered how the bold commander’s orders stressed close-combat tactics as the Federal vanguard closed in: “Boys, go in [20] steps of the Yankees before you turn your shotguns loose on them.”

The young volunteer recalled how the attack unfolded, writing that “Forrest ordered us forward. Without waiting to be formal in the matter, the Texans went like a cyclone, not waiting for him to give his other orders to trot, gallop, charge, as he had drilled his men.” As 8th Texas Cavalry advanced on the enemy position, he then described how the Union infantry stood with “their bayonets ready to lift us fellows off our horses.” The Rangers suddenly “halted in [20] steps of their two lines of savage bayonets,” indicating a pragmatic disinclination, doubtlessly reinforced by the failure at Shiloh, to assault infantry lines without first softening the formation.

As the Texans came to a precarious halt within range of the enemy rifles, Blackburn described the chaotic melee that followed: “In the twinkling of any eye almost, both barrels of every shotgun in our line ... [were] turned into that blue line and lo! What destruction and confusion followed.” He then continued to emphasize how they transitioned smoothly from stand-off to close-ranged engagement: “After the shotguns fired, the guns were slung on the horns of our saddles, and with our six-shooters in hand, we pursued those fleeing, either capturing or killing until they reached their reserve force. Just before we reached this force, we quietly withdrew.”¹⁵

This engagement, named for the site of the skirmish near a place called Fallen Timbers, again demonstrated the Texans’ mastery of tactical audacity. It also illustrated that the success of bold

maneuvers were conditionally dependent on the opposing unit’s preparedness and ability to mass effects, and on the trafficability of the terrain that must be traversed. While the fortified infantry position and wooded landscape at Shiloh had stymied 8th Texas Cavalry’s attacks, the maneuver at Fallen Timbers benefited from catching a similar enemy force while on the march in open ground. The additional tactic of pausing to discharge rifles and shotguns also revealed flexible methodology. Recognizing Forrest’s skill as a cavalry leader, Leonidas Giles, another Texan who wrote of the campaign, called the attack a “brilliant charge.”¹⁶

The regiment next won greater fame, again under Forrest’s leadership, at the First Battle of Murfreesboro July 13, 1862. Now permanently part of a specialized strike brigade, the Texans participated in a strategic raid against the critical Union Army rail and logistical hub at Murfreesboro, TN. The Federal garrison consisted of some 1,800 soldiers, including cavalry, infantry and artillery, separated into three camps. Blackburn recalled that after an “all-night ride,” the rebel force of 1,400 struck the unsuspecting defenders from the east with “three divisions, sending one to attack the courthouse, one to attack the enemy at Stone River ... and the balance of the Rangers to attack the encampment in the edge of Tennessee.”¹⁷

The dispersed Federal companies initially resisted, but lacking coordination, surrendered in detail. At one point Forrest threatened a hold-out position that if they did not surrender, he would charge with “the Texas Rangers under the black flag.”¹⁸ This statement, and the immediate capitulation that followed, indicated the brutal reputation Texans had acquired among both the Northern and Southern armies. The rebel brigade captured about 1,200 men, wounded or killed most of the others, and most importantly, destroyed the supply depot and rail hub, thereby delaying the Union drive on Chattanooga.

The 8th Texas Cavalry spent the autumn of 1862 supporting the Confederate invasion of Kentucky with reconnaissance and screening

operations. Performing the traditional role of light cavalry in nation-state warfare, Blackburn wrote that they were “to be the vanguard on this trip to clear up the way and keep the commanding general posted as to what was before him on his line of march.” He also reported that for 38 consecutive days, the “regiment in part or as a whole had been under fire ... fighting and skirmishing occurred every day.”¹⁹

By October, the Southern army was again in retreat into Tennessee as the weight of the massed Union corps proved irresistible. Giles recounted his regiment’s role in the retrograde that focused on rearguard protection for the more cumbersome infantry brigades. In this context the Ranger wrote that the Confederate commanding general, Braxton Bragg, “now started for the Cumberland Gap, leaving his cavalry to protect his rear and retard, as best they could, the onward march of the enemy.”²⁰

By December 1862, the regiment had received enough reinforcements to bring it to a total of 690 men. Despite this upgrade, populated nearly entirely by Texan recruits in accordance with the unit’s demands, the Rangers still suffered from attrition by more than a year of nearly constant combat. On Dec. 31, the revitalized 8th Texas Cavalry participated in the Second Battle of Murfreesboro, which Blackburn called “one of the great battles of the Civil War.” Over the next two days, as part of a larger cavalry brigade, the regiment sought to envelope the Union right flank with ill-advised frontal attacks. Once again, as at Shiloh, they learned costly lessons in gauging the difference between tactical audacity and misplaced boldness. After the broader Confederate offensive failed to displace the Union defense, the Texans conducted the now-familiar duty of covering the bloodied army’s retreat.

The Texans’ involvement at Murfreesboro offered a comparative event between opposing cavalries when the Texans clashed with a formation of Union Horse. While conducting a decisive defense against a “Yankee cavalry” regiment, Blackburn attested that they “charged them, drove them and

scattered them.” He also recounted how his commander ordered them to “Let them come up nearly close enough to strike and then feed them on buckshot.” The results were indicative of the conditional superiority of Texan frontier tactics over conventional eastern methods. According to the young Ranger, “One volley from the shotguns into their ranks scattered these saber men into useless fragments of a force.” The emphasis on Union cavalry’s use of sabers, in contrast with the Texans’ traditional reliance on revolvers and Bowie knives for close killing, indicated the disdain with which they held their more conventional foe.²¹

The 8th Texas Cavalry spent the year 1863 raiding throughout Tennessee, Alabama and Georgia, and fought in significant actions in September of that year at Chickamauga. In early October, they participated in a deep raid against Union rear echelons, during which they destroyed a logistical depot at McMinnville. By the summer of 1864, after a difficult year of fighting across Tennessee, the regiment moved to harass GEN William T. Sherman’s devastating march through Georgia and South Carolina. Despite the Texans’ proven effectiveness, the harassment against the Federal expedition proved futile; single cavalry regiments could not hope to decisively dissuade the

massive Union offensive. Blackburn called the effects of Sherman’s March to the Sea “fearful to behold,” as “none had more of devastation and cruelty and inhumanity than this one.”²²

As the Civil War approached its bitter conclusion, the Battle of Bentonville in North Carolina witnessed the final charge of Terry’s Texas Rangers. The confrontation developed between March 19 and 21, 1865, as a last attempt by the Confederate Army to halt Sherman’s northward march through the Carolinas. As in battles past, the Union mass again proved too great for the rebel attacks. When the out-matched Southern forces moved to retreat from the battlefield, the commanding general, Joseph Johnston, selected the Texan regiment to seize a Union-occupied bridge through which the Confederate brigades had to pass to escape intact.

The 8th Texas Cavalry now numbered less than 200 fighting men, closer to a battalion than a regiment. Due to combat attrition or promotion of every field-grade officer who had served in the unit throughout the war, command now fell to a mere captain named J.F. Mathews. Graber described the Rangers’ final offensive engagement of the war, which oriented against two blue-coat infantry companies that defended the bridge. Recalling their final action



Figure 1. A memorial to Terry’s Texas Rangers at the Texas state capitol.

with pride, he wrote that “the Rangers went into a thick woods, hardly suited for a cavalry charge, raising their accustomed yell and with their pistols, dashed into the first line of infantry, who on account of the sudden, unexpected onslaught, must have overshot them in their first volley.” Relishing their success, the cavalryman finished by assessing that “the Rangers were right among them, drove them into the second line, which became demoralized and fell back in confusion.”²³

Unleashing tactical audacity

The final attack by Terry’s Texas Rangers at Bentonville represented a fitting end to their tactical performance in the Civil War. Blackburn grandly called it a “charge rarely equaled and never surpassed in impetuosity and daring,” while Giles proclaimed that similar to their “other brilliant charges, it was the very audacity that brought success.”²⁴ These assessments, admittedly professed by interested participants, nevertheless offered insight into the organizational culture that set 8th Texas Cavalry apart from contemporary regiments. For these Texans, who embraced aggressive methodology that prized decisive action, victory stemmed from combining mobility and firepower to fracture their opponent’s structural and psychological integrity.

Yet even as the brazen Texans leveraged aggressive action time and again to enable success in reconnaissance, screening, raiding and shock charges, they likewise learned the costs of misplaced boldness. At the battles of Shiloh and Second Murfreesboro, repeated assaults against prepared infantry lines, bristling with rifles, revealed the limitations of fighting élan. Failure to modify tactical application of forceful maneuver against the realities of modernizing weaponry resulted in costly education in the academy of war.

This tension, which balances FM

3-20.96, *Cavalry Squadron’s* imperative for commanders to attack with a “tempo and intensity the enemy cannot match,” against reciprocal doctrinal mandates for leaders to “understand when and where they are taking risks,” captures the most pertinent lessons of 8th Texas Cavalry’s combat experience.²⁵ Finding relevancy across all military endeavors, the offensive fundamental of audacity must be encouraged, focused and energetically unleashed. Yet as exemplified by the victories and defeats of Texas’ most famous regiment, tactical boldness should likewise be wielded with judicious and precise application. Assessing and internalizing this balance, drawing upon both the arts and sciences of warfare, may ultimately catalyze decisive victory or invite crushing defeat.

MAJ Nathan Jennings is a student at Command and General Staff Officer’s Course, Fort Leavenworth, KS. Previous duty positions include assistant professor of history, U.S. Military Academy, West Point, NY; commander, Headquarters and Headquarters Troop, 4-9 Cavalry, 2nd Brigade Combat Team (BCT), 1st Cavalry Division, Fort Hood, TX; commander, Troop C, 4-9 Cavalry, 2nd BCT, 1st Cavalry Division, Fort Hood, TX, and Kirkuk, Iraq (deployed 2009); platoon leader, Company B, 1-34 Armored Regiment, 1st Brigade, 1st Infantry Division, Fort Riley, KS, and Baghdad, Iraq (deployed 2006-2007); and 19D Cavalry scout, 2-2 Armored Cavalry Regiment (Light), Fort Polk, LA. His military schooling includes Air Assault and Airborne schools, Maneuver Officer Basic Course, Maneuver Officer Advanced Course and Cavalry Leader’s Course. MAJ Jennings holds a bachelor’s of arts degree in history from Northwestern State University of Louisiana and a master’s of arts degree in history from the University of Texas at Austin.

Notes

- ¹ Training and Doctrine Command Pamphlet 525-3-1, *The U.S. Army Operating Concept*, 2014.
- ² FM 3-20.971, *Reconnaissance and Cavalry Troop*, August 2009.
- ³ “Governor’s Message to the Senators and Representatives of the Ninth Legislature of the State of Texas,” executive office, Austin, Nov. 1, 1861.
- ⁴ See Jeffery Murrah, *None but Texans: A History of Terry’s Texas Rangers* (Austin: Eakin Press, 2001) and Bryan Bush, *Terry’s Texas Rangers: A History of the Eighth Texas Cavalry* (New York: Turner Publishing, 2002) for studies on this unit.
- ⁵ C.C. Jeffries, *Terry’s Rangers*, New York: Vantage Press, 1961.
- ⁶ *New Orleans Picayune*, Sept. 16, 1861.
- ⁷ Thomas Cutrer, editor, *Terry Texas Ranger Trilogy*, Austin: State House Press, 1996.
- ⁸ Jeffries.
- ⁹ Cutrer.
- ⁰ Henry Graber, *A Terry Texas Ranger: The Life Record of H.W. Graber*, Austin: State House Press, 1987.
- ¹ Cutrer.
- ² Graber.
- ³ Cutrer.
- ⁴ Ibid.
- ⁵ Ibid.
- ⁶ Ibid.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Ibid.
- ²⁰ Ibid.
- ² Ibid.
- ²² Ibid.
- ²³ Graber.
- ²⁴ Cutrer.
- ²⁵ FM 3-20.96, *Cavalry Squadron*, March 2010; FM 3-20.971, *Reconnaissance and Cavalry Troop*.

Acronym Quick-Scan

BCT – brigade combat team
FM – field manual

Troubling Trends in Reconnaissance

by SFC Kyle West

Scout platoons are not operating to their potential capability or in their reconnaissance role in infantry brigade combat teams (IBCTs). Reconnaissance is vital to any operation, and without it mission success is uncertain. Scout platoons seldom conduct true reconnaissance at the Joint Readiness Training Center (JRTC); mission focus is more on security operations or offensive operations. While rotational units at JRTC are conducting some reconnaissance, very few are conducting effective reconnaissance.

There is hope for immediate fixes for the issues at hand without revamping the entire reconnaissance force. However, before a problem can be fixed,

the cause of that problem must be identified. It is best to attack the cause and not the symptom. So what are the key factors of effective reconnaissance, and what are the root issues causing the failures?

The IBCT commander's reconnaissance philosophy for how he uses the reconnaissance squadron affects how the scouts perceive themselves. The role the IBCT commander assigns the reconnaissance unit is the first and most important factor that determines good reconnaissance – because if there is not a solid understanding of the unit's purpose, it cannot fulfill its role. The philosophy of reconnaissance is at

stake both by external and internal forces.

Scouts may be pushed to be fighters from brigade and squadron commanders, who put pressure on troop and platoon leadership to engage and destroy the enemy. While most Cavalry scouts will proudly boast they are fighters and “just as tough as infantry,” it is this very mindset that is a symptom of the problem. A commander who chooses to fight his scouts is



essentially removing his eyes to add a couple of extra arms. Scouts are trying to become and compete with something they are not and were not designed to be. In doing so, scout platoons lose focus on their purpose, and it reflects in training as they train more on infantry tasks than reconnaissance tasks. As a result, their reconnaissance skills, knowledge and tactics diminish.

So what is the cause of that symptom? Reconnaissance units are seen as maneuver units instead of enabler units. This viewpoint of reconnaissance units must be reversed. The fundamental role of the Cavalry squadron is to conduct reconnaissance, not offensive maneuver.¹ Yet the squadron has routinely been used as a maneuver unit to fill a gap created when the IBCTs lost an infantry battalion to make room for the reconnaissance, surveillance and target-acquisition (RSTA) squadrons. While the IBCT still had the same area to cover with one less maneuver battalion, the Cavalry squadron was the obvious choice to fill that void.

Changing recon philosophy

Over the last 10-plus years, the philosophy of the employment of light reconnaissance units slowly shifted to a more aggressive unit used to directly engage enemy forces. Scouts were forced to fight because they were the only combat power in the squadron area of operations. The focus of gathering intelligence from the battlefield and remaining undetected faded away. The philosophy changed from the top down as the BCT needed fighters, and the squadron commander's primary focus was to defeat the enemy and stabilize the area with his organic forces. Conducting reconnaissance for the BCT was no longer a responsibility for the Cavalry squadron.

This shift filtered to the lowest levels as the scouts began to see themselves as "just as good as infantry" because they were doing the same mission with less personnel. The problem with that viewpoint is that scouts are not infantry, and they should not try to be. Infantry are very good at what they do because they are trained and manned and equipped for the tasks they are given. Scouts begin patrols with 50

percent of the infantry platoon's combat power. A unit degraded by half its combat power should report that it is combat-ineffective, yet scout platoons have come to think they can still accomplish the infantry mission with understrength manpower. They cannot.

Also, scouts can only fight with up to four personnel at the team level and up to 12 dismounts at the platoon level² before it becomes a troop fight (if you are in a fair fight, you are wrong). This is hardly the making of a maneuver unit. There needs to be a focus on scouts conducting reconnaissance from the IBCT down to the platoon.

This philosophy needs to be changed at the IBCT level before it will matter at any other. As long as the IBCT uses its reconnaissance assets as maneuver units, the squadrons, troops and platoons will continue to complete those missions and, in doing so, they will think of themselves as fighters rather than scouts. Studies at the National Training Center have shown that a BCT's success is heavily dependent on how it conducts reconnaissance.³ Yet the trend at JRTC has been that the IBCT rarely uses its scouts to conduct reconnaissance where it should be, between shaping operations and decisive operations. This is where reconnaissance is most valuable, as it helps the IBCT plan for future missions by being used as a "reconnaissance push" or by helping to steer the BCT through decision points as it is used as a "reconnaissance pull."⁴

The planning of reconnaissance is lacking past the first 72 hours into the fight at JRTC. The observation is that the IBCT's use of reconnaissance is to push into the area of operation just far enough to secure a foothold while the IBCT increases its combat power. While this is a fundamental task for the reconnaissance squadron, often the trend is that this is the only point in which the IBCT plans to use its reconnaissance asset. IBCT commanders and staff have to think toward their next fight or threat and use reconnaissance early to help them understand the situation.

For the rest of a rotation, the reconnaissance squadron becomes stagnant, set in a screen or guard to

secure sustainment operations while the infantry battalions push forward with no reconnaissance ahead of them. The consequential outcome is that the IBCT becomes increasingly reactionary to the enemy, with little warning when it makes contact with the enemy. By not conducting reconnaissance, the IBCT loses the initiative, the ability to fight on its own terms and the chance to set battlefield conditions. The IBCT must see the reconnaissance squadron as the intelligence, surveillance and reconnaissance (ISR) asset that it is and plan to use it if the IBCT wants to be successful.

Reconnaissance cannot be an afterthought in planning but rather a primary consideration when conducting planning. Specifically the questions to ask are, "What reconnaissance assets do I have available, where is reconnaissance most crucial to success, what type of reconnaissance method is best used (push/pull), and when should reconnaissance be deployed?"⁵ All subsequent planning should be based off the reconnaissance. Do not keep reconnaissance assets in reserve!

Mindset

The IBCT is not the only place where the fault of good reconnaissance can be found. At platoon level, the aforementioned factors come into play in different ways. Scouts have become comfortable with and dependent on the vehicles they use, resulting in a loss of fieldcraft, tradecraft and effectiveness in harsh environments. The vehicles provide many great things such as mobility, firepower, survivability and the ability to carry optics and communications systems. Though all this is possible because of the vehicles, they also present a double-edged sword that can hurt the reconnaissance platoon if Soldiers are not aware of it.

Scouts make jokes at the expense of their tanker counterparts for "death before dismount." However, very few scouts have the right to tease tankers with that old taunt, as the comfort of uparmored vehicles has proven to keep scouts' boots clean. Scouts have grown soft over the years as staying in the vehicle became the norm;⁶ the heaters and air conditioners run nonstop in

most scout platoons now. Engines are not only turned on in the assembly area (AA) to ensure the batteries don't die, but also because it is too hot or too cold. Observation posts (OPs) are seldom deployed, and while we use the excuse of manpower, it would be too easy to consolidate the platoon vehicles at an AA to be able to maximize dismounts for multiple short-duration OPs.

Also, the effect of heavily armored vehicles has made the scout platoon more eager to initiate direct contact with the enemy due to the weapon systems the vehicle platforms carry. It is easy to see how a platoon with such firepower as the M2 .50-caliber machinegun, MK19 grenade launcher, M240 machinegun and tube-launched, optically tracked, wire-guided missile launchers could see themselves as fighters meant to offensively use such weapon systems. Being so heavily armed, combined with past experience, does not help the platoon maintain a philosophy that they are to remain hidden and only use their weapon systems to break contact, as it is stated repeatedly in scout-platoon doctrine.⁷

Having such firepower does not help the company, squadron or even the IBCT see the scouts as what they are (ISR assets) when they have more firepower than the infantry platoons in the IBCT. Scouts do not need this firepower when their primary course of action and battle drill when engaged by the enemy is to break contact. Instead, scouts are quick to engage the enemy with direct fires, often with an equal or superior force, resulting in scout-platoon degradation to ineffectiveness.

This is a common trend with devastating results, as illustrated in studies showing that when reconnaissance assets engage in a fight, they are destroyed before they are effective in reporting useful information to higher headquarters, and the IBCT as a whole is not successful as a result.⁸ However, when reconnaissance assets remain hidden and do not engage, they survive long enough to gather significant battlefield information, effectively reporting and aiding in the IBCT's success. The result of having a highly

lethal armored-vehicle platform has shown to be that the scout platoon engages with the enemy more often than the mission dictates. Scouts need to stay focused on their purpose on the battlefield, even when given the capabilities to effectively engage and destroy enemy threats.

Scout training

Training is the cheapest, quickest and most important fix to the challenges facing the reconnaissance force. We must take a hard look at how the reconnaissance force trains and ask ourselves, "Is the training designed to conduct reconnaissance or conduct maneuver?" What is the focus when we conduct squad-/team-level training? Often that training is not focused on reconnaissance tasks but rather is focused on infantry tasks. Does the mission-essential task list or platoon collective-task list reflect a reconnaissance role or an infantry role? Another casualty resulting from a decade of using reconnaissance forces as maneuver units is the experience and expertise of our junior leaders in reconnaissance fundamentals.

When team leaders train their Soldiers, they stay in their comfort zone: white engineer-tape room to conduct Battle Drill Six (enter and clear a room). Yet doctrine states clearly that scouts "do not clear buildings." They enter rooms to reconnoiter buildings, primarily to determine suitability for potential OP locations.⁹ This is not conducted in the same manner as or is the intent of Battle Drill Six. When scout platoons conduct squad, section and platoon live fires, the emphasis is on engaging the enemy with direct-weapon systems to conduct offensive engagements.¹⁰

There must be more emphasis on break-contact drills at the team/squad/section level and displacement drills at platoon level. The react-to-contact drill at platoon level should be more focused on reconnaissance handover while the section displaces. Scout gunnery should heavily and primarily be integrated with indirect fires, aerial-weapons teams or close air support as methods of engaging the enemy – with less emphasis on engaging targets with direct-fire systems.

As things are now, a platoon

that engages and kills the enemy with direct fire is more rewarded and recognized, even when that platoon was degraded or destroyed itself. Less credit is given to the platoon that does not engage the enemy directly yet reports continuously undetected. This is a result of our training, which emphasizes engaging the enemy with direct fires over reporting battlefield information. Scouts have heavily uparmored vehicles and massive firepower, which causes the crew and commanders to want to use that firepower, and we are compounding the problem by basing our training off the use of that firepower rather than reporting and remaining undetected. It is unrealistic to expect scouts to be successful at reconnaissance if we continue to focus their training on killing the enemy with direct fires and conducting infantry tasks. Scouts need to stop training to be infantrymen.

Reconnaissance is an art form we have lost over the last decade. While many would say it is because we have been fighting a counterinsurgency (COIN) fight, I strongly disagree. Scout platoons have covered down on a role they were not intended to do, and in doing so, reconnaissance platoons lost focus on their purpose. There is a place and need for actual reconnaissance in the COIN, decisive-action and hybrid-threat operating environments. The importance of good reconnaissance and its outcome on the IBCT's success must be recognized before the necessary revamping and refocusing of reconnaissance can take place.

Reconnaissance must get back to basics. It must regain its fieldcraft and tradecraft. Scout platoons must renew the emphasis on stealth and on data collection over direct engagement. IBCTs must clearly see the Cavalry squadron as their best ISR asset of choice. Being called an "enabler" must no longer be a dirty word for scouts and those in the reconnaissance community. If the philosophy of reconnaissance does not change within the BCT, squadron, troop and scouts themselves, none of the rest really matters.

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Bronze Star Medals and the Meritorious Service Medal.

Notes

¹ Field Manual (FM) 3-20.98.

² 36-man scout platoon.

³ Rand, *Quantifying the Battlefield*, 1999.

⁴ FM 3-20.96.

⁵ FM 3-90.2.

⁶ "Breaking the Reconnaissance Code," *ARMOR*, November-December 2001.

⁷ ST 3-20.983; FM 3-21.94.

⁸ Rand.

⁹ ST 3-20.983.

¹⁰ FM 17-12-8.

Acronym Quick-Scan

AA – assembly area

BCT – brigade combat team

COIN – counterinsurgency

FM – field manual

IBCT – infantry brigade combat team

ISR – intelligence, surveillance and reconnaissance

JRTC – Joint Readiness Training Center

O/C/T – observer/coach/trainer

OP – observation post

RSTA – reconnaissance, surveillance and target acquisition

Developing Cross-Cultural Competencies at Platoon Level

by CPT Tyler G. Matthews

I served as a platoon leader in Chosen Company, 2-12 Infantry, 4th Infantry Brigade Combat Team, 4th Infantry Division, from October 2012 to May 2014. During that time, our battalion completed a tour in Afghanistan's Regional Command (RC)-East, completed a train-up cycle that culminated in a successful National Training Center rotation and deployed to Zabul Province in RC-South. Amid a relentlessly paced train-up, extensive personnel turnover and pre-deployment preparation, I learned an important lesson: to set the conditions for success, platoon leaders – not battalion staffs or commanders – must take responsibility for providing detailed mission analysis and cross-cultural training to their Soldiers and subordinates.

In late Fall 2013, my platoon was scrambling to complete the mandatory trainings and certifications required before deploying to Afghanistan. We spent many of our days at the readiness center making sure we were healthy, at the ranges making sure our marksmanship was refreshed, and at the company headquarters making sure containers were packed. We knew we were going to Forward Operating Base Apache in Zabul Province, but outside of that basic “where,” we knew

very little about the mission ahead.

Doctrine is clear: to win in a complex world, Soldiers must have cross-cultural competencies and strong cognitive abilities. Arriving at this endstate is no easy feat, but platoon leaders can and should prepare their Soldiers for success by familiarizing them with the terrain, culture and history of their future operational environment. Doctrine states repeatedly that a robust understanding of terrain, populations and culture is critical to mission success in stability operations, counterinsurgency (COIN) operations and general operations in the complex operational environments of the 21st Century.¹

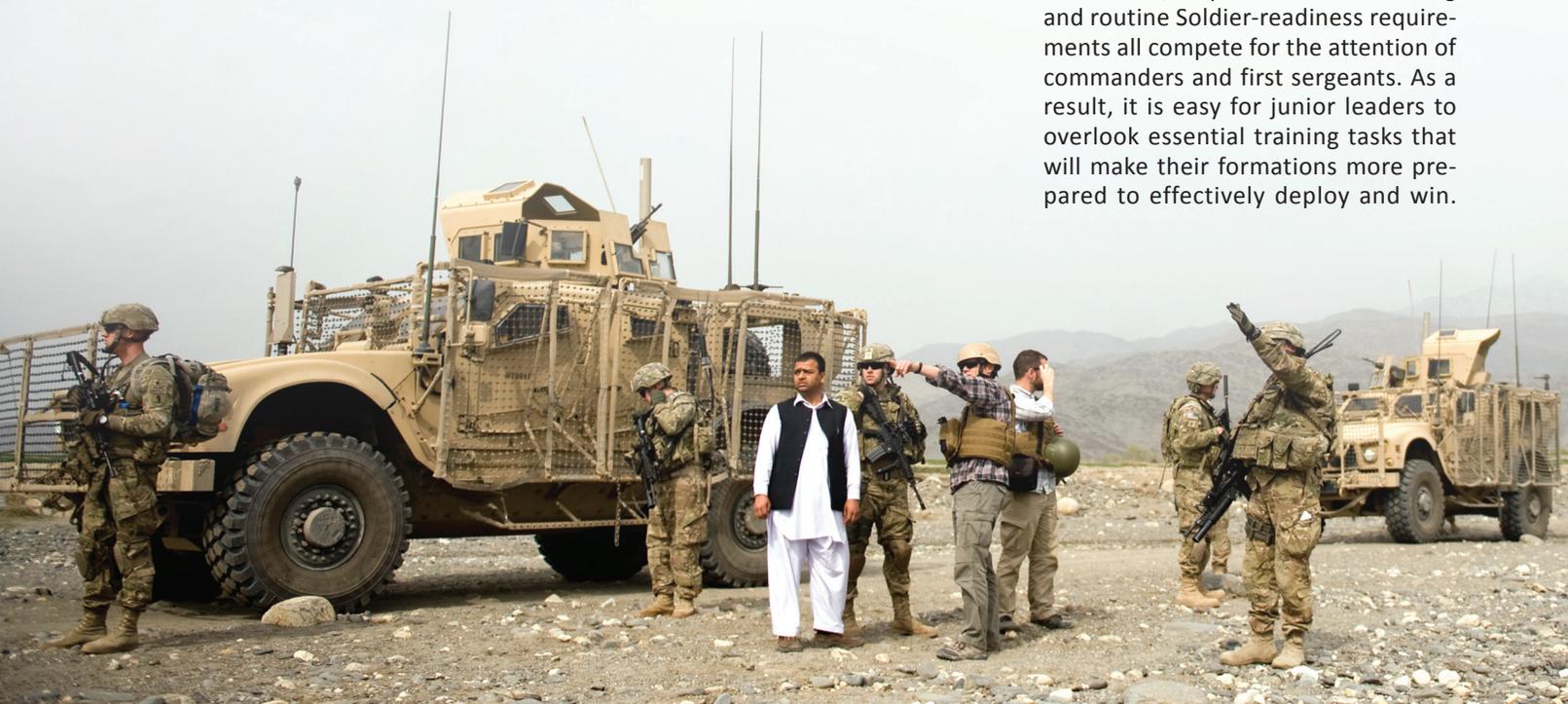
Accordingly, doctrine presents tools for leaders to employ when analyzing mission variables (mission, enemy, terrain, troops available, time, civil considerations, or METT-TC), terrain analysis (observation and fields of fire, avenues of approach, key terrain, obstacles and movement, and cover and concealment, or OACOK), operational variables (political, military, economic, social, information, infrastructure, physical environment and time, or PMESII-PT) and civilian considerations (areas, structures, capabilities, organizations, people and events, or ASCOPE).² The Army's counterinsurgency manual, Field Manual (FM) 3-24, repeatedly

emphasizes the critical need for COIN forces to understand both the operational environment and the culture in which they are fighting.³

Cultural preparedness

Despite Army doctrine's emphasis on the time-intensive exercises of cross-cultural training, our force often fails to properly prepare for the fight. I believe those at the tactical level have difficulties with pre-deployment mission analysis and cross-cultural training because they lack both confidence and time. The final months before deployment time is understandably scarce, and softer elements of preparation such as cultural training and terrain analysis take a backseat to more concrete, measurable tasks such as marksmanship and Soldier-readiness processing. In other words, developing cross-cultural competency is not highly prioritized. Further, I believe most company-level officers are unsure of how to go about conducting a thorough pre-deployment mission analysis that includes culture, and are even less confident in how to present that information to their subordinates.

In the last 90 days before a deployment, company and battalion training calendars become crowded with myriad requirements. Final validation of basic skills, required on-line training and routine Soldier-readiness requirements all compete for the attention of commanders and first sergeants. As a result, it is easy for junior leaders to overlook essential training tasks that will make their formations more prepared to effectively deploy and win.



Among the areas most often overlooked are terrain analysis, language training and cultural-awareness training. Platoon leaders must seize opportunities to facilitate discussion and study relevant to their future missions.

Zabul School

With the support of my platoon sergeant and squad leaders, I pieced together a curriculum to help my platoon prepare for Zabul. Some of my Soldiers had learned Pashtu or Dari, and while we didn't have thorough region-specific literature, we did have Soldiers who had been to southern Afghanistan. Between us, we had plenty of collective resources to get important analysis and training started. "Zabul School" seemed an appropriate title for our platoon training effort, and so it was.

Terrain familiarization

Our initial approach to preparing for our relief-in-place (RIP) with the outgoing unit focused on the fundamental aspects of the operational environment. Inspired by David Kilcullen's "Know Your Turf" principle from his "28 Articles of COIN," I focused our early efforts on map reconnaissance.⁴

In Kilcullen's article, he challenges company-grade officers to take time to carefully study the terrain: "Know the people, the topography, economy, history, religion and culture. Know every village, road, field, population group, tribal leader and ancient grievance. Your task is to become the world expert on your district. If you don't know precisely where you will be operating, study the general area. Read the map like a book: study it every night before sleep, and re-draw it from memory every morning, until you understand its patterns intuitively. ... Neglect this knowledge, and it will kill you."⁵

We focused our efforts on familiarizing our Soldiers with Zabul's borders, cities, roads and rivers. Over time, we included the significant mountain ranges and outlying districts. Since we didn't have military maps of Zabul at first, we relied on open-source maps of Afghanistan, RC-South and Zabul from sources like Google Earth.

In practice, our terrain familiarization started with a formal class that

resembled elements of the standard operations order. I briefed by orienting and familiarizing the platoon with the province. Next, we engaged in a less formal dialogue in a classroom setting driven by Soldier questions. Where are the population centers in the province? How busy are the roads? What are the main roads and routes around the U.S. bases? Through free-flowing discussion, we created a dialogue where Soldiers and noncommissioned officers (NCOs) with experience in RC-South could answer questions for the less-experienced Soldiers. The questions we couldn't answer became our request-for-information (RFI) list for our battalion's S-2. In the process, our Soldiers started thinking critically and internalizing the most important aspects of the battlespace.

Lastly, we tested our Soldiers' retention of the terrain-based information. Starting in generalities and working toward more detailed questions, we tested our Soldiers' ability to freehand-sketch the province on blank paper. Some caught on more quickly than others, but eventually every Soldier became confident in his understanding of Zabul. Each Soldier knew where Highway 1 bisected the province, why it was important and through which districts it traveled. Further, after only a couple of weeks, each Soldier could draw the province, its key cities, its districts, its roads, its rivers and the surrounding provinces. Each Soldier knew where key cities were located, how large their populations were and what the roads generally looked like. As a result, weeks before we were wheels-up, the platoon was confident that it understood the geography of the battlespace to which it was deploying.

Language and culture

Language and cultural training were the second critical component of our Zabul School curriculum. Three of our platoon's 29 Soldiers had the opportunity to attend Pashtu language training as part of the brigade's pre-deployment training. Those Soldiers had been handpicked to attend training based on their aptitude for learning and their communication skill. These Soldiers introduced the rest of us to Afghan language and culture.

In the final weeks leading up to the deployment, our Pashtu-trained Soldiers led two classes per week on key Pashtu phrases and Afghan cultural norms. Our Soldiers with experience in RC-South or who had some familiarity with the language helped. The classes normally included the introduction of key phrases and vocabulary through PowerPoint slides and practical exercises in buddy teams across the classroom. Specifically, we rehearsed basic introductions and the most common individual exchanges we anticipated encountering.

In addition to the obvious benefits of knowing key phrases, language training enabled our leaders to discuss the importance of cross-cultural respect, understanding and nonverbal communication. Our Soldiers who had graduated the Advanced Situational Awareness Training (ASAT) course briefed what they had learned about body language and how to use nonverbal clues to pick up signals of fear and anger.

Soldiers with limited language experience learned the importance of nonverbal communication and body language to convey meaning. During the training, several Soldiers demonstrated a natural aptitude to learn key phrases quickly; those Soldiers later excelled as security-force personnel and often took the lead during our partnered operations with Afghan forces.

A final cultural class we developed covered the principles of *Pashtunwali*, the honor code of Pashtu populations residing in Zabul and Kandahar. Once again, with minimal guidance and a short list of suggested reading references, two college-educated junior-enlisted personnel in our platoon took the initiative and delivered an outstanding presentation on *Pashtunwali*. By the end of the class, our Soldiers better understood the importance of hospitality, respect and women to the local Islamic population with which they were most likely to come in contact.

History, situational awareness

The third component of Zabul School consisted of a focused effort on educating our Soldiers on the history of southern Afghanistan, especially with

respect to the Taliban in Afghanistan and Pakistan. I have often observed many junior officers and NCOs read widely to familiarize themselves with the history of the enemy they may face and the environment to which they may deploy. Yet only rarely do these lessons-learned make their way down to the Soldier level. In our curriculum, we sought to familiarize the entire platoon with the history of the Taliban and the Afghan population prior to deploying. In an informal classroom setting, we watched a handful of brief documentaries and gave NCOs the opportunities to brief the enemy tactics, techniques and procedures they had observed on past tours.

Beyond history, I challenged our more ambitious younger Soldiers to develop and brief short classes in teams of two or three. In one example, three of our privates delivered a 15-minute presentation on what they felt were the most important of Kilcullen's articles of COIN and how those might come into play on our deployment.

This forum enabled us to leverage and integrate our various educational and experiential backgrounds into constructive dialogues that helped all our Soldiers prepare mentally for the battlespace. These classes were not part of a lengthy program of instruction but instead were the result of brainstorming and curiosity at the platoon level and the soliciting of volunteers to step up and present critical information.

Benefits

In total, our platoon spent about 12 formal hours over the course of four weeks carrying out the Zabul School curriculum described previously, not including any outside time our subordinate leaders used to expand further. Through observation and leader feedback, I found the return on investment for those 12 hours well worth their weight.

Our platoon's leadership was well prepared to make the most of our brief RIP/transfer of authority. We were prepared to cope with the constraints of the quick transition with the outgoing unit. Because of our familiarity with the terrain and geography, we were able to ask detailed questions that led to more nuanced lessons learned and

mission analysis from the outgoing platoons. Furthermore, our familiarity with the main routes and districts allowed us to simply fill in the gaps with the details that experience and advanced imagery can provide rather than starting from zero.

Our emphasis on language and culture greatly mitigated risk when working with our Afghan partners. Less than a week into our deployment, our platoon was interacting with Afghan soldiers and leaders on bases across Zabul. From our riflemen to our squad leaders, our personnel were confident they could build relationships, establish baseline behavior in our partnered elements and identify anomalies representing heightened risk. As a result, I never doubted that our platoon's Soldiers would be respectful and cordial to our Afghan partners.

Our Soldiers benefited professionally and personally from Zabul School. Professionally, Soldiers developed confidence in their briefing skills and improved their ability to think critically about their operating environment. Soldiers also benefited on the personal, more intangible level. Some of my Soldiers told me that they had gone entire tours in the past without being able to point out their province's location on a map of Afghanistan. To me, that reflects poor, incomplete leadership from company-level officers. It is unsatisfactory for leaders to tell subordinates that terrain, culture and historical variables are important to operational success and yet postpone discussions of the variables of ASCOPE and OACOK until after the deployment's in-brief. Zabul School provided a medium for our platoon's leadership to help our Soldiers "gain intellectual advantages over adversaries through cross-cultural competencies," consistent with the Army operational concept's challenge.⁶

Lessons-learned and recommendations

Outside of the challenge of finding time for our training curriculum in the busy training calendar, the greatest challenge was how to go about getting started with mission analysis. How exactly do we train the "cross-cultural competencies" required to fight and win at the platoon level? While

imperfect, Zabul School was certainly a learning experience for me.

I learned that platoon leaders must lead from the front if they are to develop platoons of cross-culturally competent Soldiers. I used my familiarity with basic frameworks – METT-TC, OACOK and PMESII-PT – to put together the first couple of briefs. In doing so, I framed the subsequent classes and established a foundation on which the training could build. Most importantly, I recognized early that the platoon's collective commitment to learning cross-culturally would reflect the attitude of my platoon sergeant and my platoon's three squad leaders. Their buy-in was essential. As the platoon's leadership, we made it clear that we highly prioritized learning about the operational environment. And because we approached the task with both the seriousness and humility required for learning, our Soldiers did, too.

The best classroom training occurred when Soldiers were fully engaged in an informal, classroom environment. I learned that both atmosphere and setting are immensely important to achieving results. I realized early on that many of my Soldiers had little to no experience abroad, spoke one language and had never conducted the type of terrain and civil analysis essential for developing cross-cultural understanding. We needed to approach the task with humility and in a way that facilitated regular mature discussion on complex issues. In terms of setting, we learned that a closed classroom was more effective than a more trafficked area with potential for distractions.

With respect to the atmosphere, we emphasized from the first engagements that this was a collective learning effort as a platoon – we were all in this together. We encouraged questions and feedback from every level and took each inquiry seriously. Our Soldiers showed a tremendous capacity for learning and retaining terrain analysis, and a hunger to know more about the areas in which they would fight. In fact, the best RFIs I generated from the training did not come from my seasoned NCOs but from curious gunners who had never deployed.

Using the skills and talents of Soldiers

of all ranks and backgrounds for the purpose of learning about culture is essential. I challenged my Soldiers who had strong presentation skills, experience abroad and advanced education. Two of them put together the slideshow on Kilcullen's articles of COIN. Our resident Pashtu-course graduates led our language training. Two Afghanistan veterans who were well-read on international relations helped motivate Soldiers to teach the platoon about *Pashtunwali*. Without question, the most valuable discussions were those that stemmed from the classes taught by these eager and curious Soldiers.

There were also more nuanced take-aways that aided the training's effectiveness. I learned to start the training early and to not overreach. Getting started early was critical. Eventually, our battalion staff provided exceptional smartbooks and language cards to the Soldiers across the battalion that aided with mission analysis and narrowed the focus areas, but if we had waited for these products to start our training, we would have been severely disadvantaged. Instead of relying on these aids as a base, we instead used them to fill in specific gaps in the knowledge we had built through our curriculum.

Equally critical was making sure that our curriculum's goals and pace were manageable and realistic for both the platoon and myself. We assessed that an hour a day would quickly lead to burnout, and an hour every three weeks would probably be too little for the desired progress. I found for our platoon that two to three hours a week, balanced across language training, terrain and area familiarization, and cross-cultural training was the right balance for our group.

Lastly, we learned it was especially beneficial to integrate as many mission-specific competencies into the training as possible. My platoon knew that part of our mission would be security-force patrols securing U.S. advisers, and our tactical patrols would likely partner with Afghan National Army forces. In light of that mission and the high insider-threat potential, we trained accordingly to mitigate our tactical risk and emphasized learning cultural norms, respect and behavior.

Are your Soldiers prepared?

By limiting our Soldiers to the fundamental fighting functions of marksmanship and squad attack, not only are we ignoring Army doctrine, but we also aren't giving our Soldiers enough credit – or enough of a challenge – intellectually. Consider this: many of your Soldiers could, on a moment's notice, sketch to-scale maps of several levels of the videogame "Call of Duty"; these same Soldiers are more than capable of conducting highly sophisticated analysis of the terrain on which they will fight. They just need to be challenged accordingly. The Army is and should remain in the business of manufacturing leaders at every level. Today's privates are tomorrow's squad leaders; no one is too junior to know the fundamentals of the theater in which they are risking their lives.

Time is not too short in the pre-deployment window already. To the platoon leader who feels constrained, consider Teddy Roosevelt's famous words: "Do what you can, with what you have, where you are."⁷ If all you can do is an informal class on the major cities in your area of operations two months before you deploy, great – that's better than nothing. If you have time for a more elaborate effort to educate your Soldiers on language, culture and geography, even better. But it is never too early to start.

Zabul School proved a worthwhile exercise that reaped big rewards for our platoon. It was far from perfect. In hindsight, I should have started earlier; I should have used a wider array of articles and videos; and I definitely should have worked harder to find primary sources with knowledge of Zabul. But even so, it was a learning exercise that moved us forward as a platoon, helped all of us improve our cross-cultural competencies and made us that much more prepared to win in the complex environment to which we deployed.

Just like training battle drills, cross-cultural training and learning to "know your turf" takes time and concentrated effort. As deployments shift from Afghanistan and Iraq to new areas of operations, the need for adaptive leaders who can hastily provide detailed

analysis and innovative training in short timespans will only grow.

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Notes

¹ FM 3-07, *Stability*, June 2014; Department of the Army, *Insurgencies and Counterinsurgencies*, May 2014.

² Army Doctrinal Reference Publication 5-0, *The Operations Process*, May 2012; FM 3-21.0, *The Infantry Rifle Company*, July 2006.

³ *Insurgencies and Counterinsurgencies*.

⁴ David Kilcullen, "Twenty-Eight Articles," *Counterinsurgency*, 1 (2006).

⁵ *Ibid*.

⁶ U.S. Army Training and Doctrine Command Pamphlet 525-3-1, *The U.S. Army Operating Concept: Win in a Complex World*, October 2014.

⁷ Theodore Roosevelt, *An Autobiography*, New York: MacMillan, 1913.

Acronym Quick-Scan

ASAT – advanced situational-awareness training
ASCOPE – areas, structures, capabilities, organizations, people and events
COIN – counterinsurgency
FM – field manual
METT-TC – mission, enemy, terrain, troops available, time, civil considerations
NCO – noncommissioned officer
OACOK – observation and fields of fire, avenues of approach, key terrain, obstacles and movement, and cover and concealment
PMESII-PT – political, military, economic, social, information, infrastructure, physical environment and time
RC – regional command
RFI – request for information
RIP – relief in place

Expectations of Your Maneuver Captain's Career Course – What Army Leaders Need to Know

by LTC Christopher L. Budihas and CPT Thomas Flounders

As the Army has evolved over the last 14 years of war, so has the Maneuver Captain's Career Course (MCCC). We are working to ensure we are producing captains who are prepared to meet the rigors of leading Soldiers and Army formations in an ever-increasingly-complex world.

A 22-week course of instruction, MCCC focuses on the necessary skills captains need to successfully lead within the operational Army, including asking students to build doctrinally and tactically sound plans for all types of operations and units.

The purpose of this article is to inform Army leaders as to what *their* MCCC is teaching our captains to ensure there is common understanding between the operational and institutional Army as to where our captains are currently deficient in their skills and what MCCC is doing to educate them and close this intellectual gap.

As officers arrive at Fort Benning to attend MCCC, our expectations of students has not changed. We expect students to arrive having an understanding of operational terms and graphics, able to properly use doctrinal language and be well-practiced, at a minimum at the platoon-level, in troop-leading procedures (TLPs). These three areas are the necessary foundation from which small-group leaders (SGLs) teach to build successful students. However, a current trend is that all too often students arrive with little to no additional professional development focused on those three areas and cannot develop tactically sound and detailed operations orders (opords).

Through a series of student surveys,

MCCC has determined that the profile of an average class has the following experience:

- **A rudimentary understanding of the TLPs.** Surveys reveal that around 50 percent of students have produced fewer than five opords since their Basic Officer Leadership Course (BOLC). Many students have produced concept-of-the-operations (conops) briefs, but these typically do not contain details beyond a basic course-of-action (CoA) sketch and statement.
- **A limited understanding of the intelligence preparation of the battlefield (IPB) process.** Fewer than 25 percent of students have produced five graphical terrain-analysis overlays/modified combined-obstacle overlays or situational templates since BOLC. The conops will typically display an enemy position but will not include any analysis other than templated, tentative positions.

- **A limited understanding of the military decision-making process (MDMP).** Fewer than 20 percent of students have conducted MDMP five or more times. Students who have served in a staff position – which is less than 20 percent of a typical class size of 130 U.S. students – can demonstrate some general knowledge of the MDMP process to any relevant standard. Most have little understanding in the process from CoA analysis to orders production/rehearsals.
- **A limited understanding of reconnaissance-and-security operations.** Fewer than 50 percent of students have ever conducted a screen, zone and area reconnaissance and/or passage-of-lines to the appropriate tactical standard. Most Armor officers can be expected to have been instructed at Armor BOLC on the basic tenets of these enabling operations but have neither

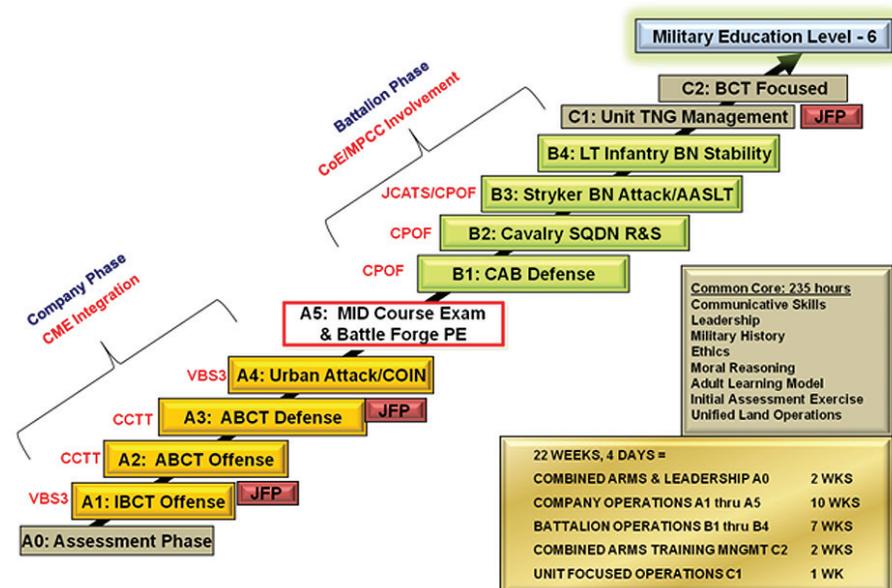


Figure 1. MCCC's Active Component course map, program of instruction for FY 2015.

planned nor executed them while in their previous unit.

Understanding where the average student begins as they enter the course allows SGLs to best determine how to get each of their students to reach their fullest potential prior to graduation after 22 weeks of instruction.

The summarized major three course outcomes for MCCC are:

- Mastery of TLPs across armored, infantry, and Stryker brigade combat teams (BCTs) using combined-arms maneuver and wide-area security tactical tasks.
- Proficiency in using MDMP to plan offensive, defensive and stability operations.
- Understanding of the management of Army systems, including unit-training management (UTM), Uniformed Code of Military Justice (UCMJ), ethics, written communications and a rudimentary understanding of command-supply discipline and company-level administration.

The course accomplishes its goals by organizing into three phases: company

phase, in which individuals produce five opords; battalion phase, where groups produce four opords; and command phase, when students receive instruction on training management and unit-oriented electives.

Company phase

Company phase focuses on students' learning and applying the TLPs and the IPB process to create a tactically sound opord, constructed in accordance with the latest Army doctrine. In the A1 module, students receive instruction on each major step of the TLPs. Captains use critical thinking to understand and apply mission command to build teams, establish shared understanding, issue clear commander's intent, demonstrate disciplined initiative, use mission orders and accept prudent risk. The goal is that they are precise and lethal in planning by employing and synchronizing direct fire, indirect fires, close-combat attack, close air support and other enablers on the battlefield at the company level to meet their commander's endstate.

Students also receive module-specific instruction on the three different BCT types. Students develop opords for an

infantry BCT (IBCT) in Module A1, armored BCT (ABCT) in A2 and A3, and Stryker BCT (SBCT) in A4. The culminating exercise for the company phase of the course is a practical examination when students have eight hours to plan prior to formally briefing a SGL in detail for grade.

To expose students to the virtual and gaming dimensions of training, once they have demonstrated a grasp of the material at the end of each module, they then apply their plan in simulation. Virtual Battlespace 2 (VBS2) is used for the IBCT and the SBCT missions, while the Close-Combat Tactical Trainer (CCTT) is used for the two ABCT modules.

VBS2 is a computer-based, first-person shooter-style game that allows students to input graphic-control measures; plan and use indirect fires; and maneuver their squads and platoons to accomplish their mission. While there are limitations to the system, it demonstrates the complicated process of echelonment of fires and the necessity for clear, simple plans that can be quickly and efficiently executed.

The CCTT serves two purposes for



Figure 2. Students participate in a combined-arms rehearsal.

students: first, to execute their planned mission, and second, to expose all students to mechanized and armored systems.

For about 58 percent of the students, this is their first exposure to these systems. Each simulation receives an after-action review led by SGLs to focus students on the differences between the plan and the execution of the mission. Beginning in mid-2015, Call-for-Fire Trainer was integrated to provide students a simulation to exercise their indirect fire plan. Joint Conflict and Tactical Simulations Environment (JCATS) and a new system (Linguistic Geometry Real-time Adversarial Intelligence and Decision-making), will be incorporated to allow students real-time feedback for their missions as well.

Lastly, this year more student captains are being incorporated into infantry and Armor BOLC culminating field exercises. This provides valuable experience for MCCC students to interact with lieutenants and provide feedback on their opord. This unique opportunity allows students to physically exercise mission command over a company during a live field exercise.

Battalion phase

Battalion phase also consists of four modules that cover offense, defense and stability operations, which includes an ABCT squadron zone-reconnaissance mission. The course outcome is that captains are practiced in MDMP for battalion operations that seize, retain and exploit initiative across the range of military operations. As in the company phase, students must demonstrate critical thinking to develop comprehensive and complete plans during the battalion phase.

The first module is constructed in a very similar fashion to Module A1, in which students receive instruction on all seven steps of MDMP and their sub-components. Students assume staff positions, and the SGLs or other senior officers guide them through the modules. These senior mentors are either the seminar's assigned senior mentor, (Fort Benning assigns current or former battalion commanders) or lieutenant colonels who are currently attending Maneuver Pre-Command Course

(MPCC) and who simulate the battalion commander for one or more of the battalion modules. This integration provides students with a valuable realistic interaction that allows them to replicate the interface between an actual battalion commander and his staff.

The battalion phase is highlighted by a collaborative exercise among centers of excellence that includes – via Command Post of the Future (CPoF) and Defense Connect On-line – connection with engineer, adjutant general, signal/cyber, fires and aviation captain's career course (CCC) students. The MCCC acts as the S-3 section and provides the student-battalion executive-officer leadership to drive the MDMP process, with input from the other CCCs in their areas of expertise.

The last block of instruction exposes students to the Army Design Methodology, in which students learn and apply the basics of design to develop lines of effort as part of a stability-operation scenario.

Command phase

The final phase, command phase, consists of UTM instruction and electives that focus students on the capabilities of their gaining unit. For example, students bound for airborne units receive instruction on airfield seizure; ABCT- and SBCT-bound captains receive

classes on direct-fire gunnery; and all students are exposed to maintenance and other standard operations for a company. UTM students execute an important practical exercise (PE) in which every student constructs an eight-week training plan that moves a company from individual training to conducting a squad-level live-fire exercise (LFX). They plan this LFX using a range from the installation where they will command.

There is a current initiative, to implement in Fiscal Year (FY) 2017, of an increase of 10 days to the MCCC program of instruction (PoI). There will be three additions to the course: a fifth company-phase module, an air-assault component to a battalion-phase module and a combined-arms live-fire exercise planning exercise in the training-management module. In the fifth company module, students will receive troop reconnaissance-and-security instruction and write an opord.

With half the Armor population taking command of Cavalry troops, and about 20 percent of infantry officers commanding a headquarters and headquarters company with an organic scout platoon, providing this valuable instruction will close the education gap that exists in our officer corps conducting reconnaissance-and-security missions.

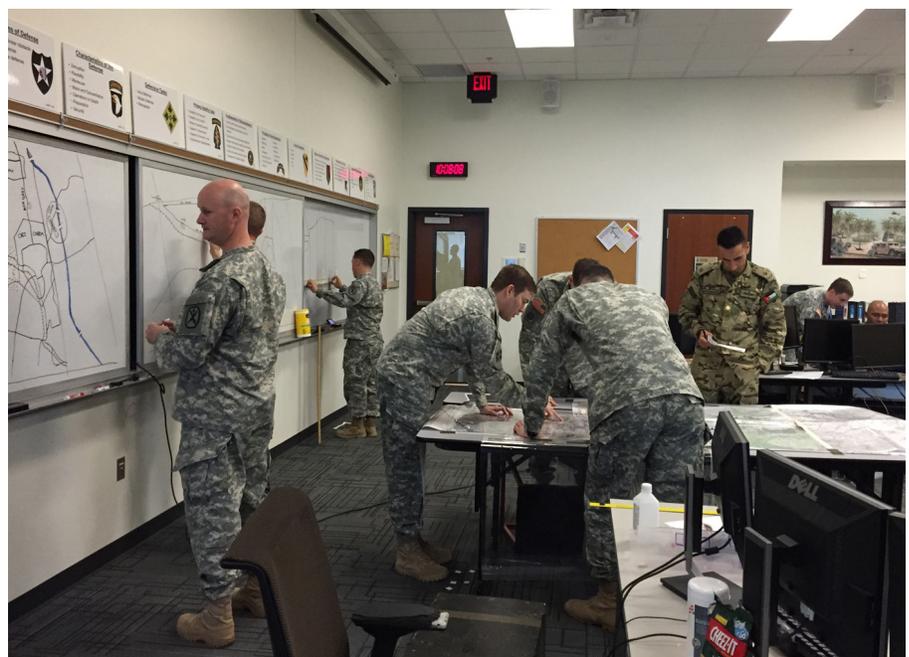


Figure 3. Students participate in staff-planning exercises.

MCCC is not an all-encompassing course; there is only so much time and many tasks to train in a 22-week Pol. There are many functions of a staff and unit on which students do not receive instruction. Each unit is unique, and the individual tactics, techniques and procedures, standard operating procedures and shared understanding of every BCT and battalion cannot possibly be covered. The Pol does not emphasize the development of non-modified table of organization and equipment (MTOE) staff officers. The CPoF is used in battalion phase, but students do not become experts in this system. MDMP is mostly focused on intelligence and operations functions, while the other staff sections and their warfighting functions concentrate on enabling the learning objectives that focus on the maneuver plan and the IPB process.

MCCC places primary emphasis on mission analysis, specifically IPB, and subsequently on CoA development and analysis. Orders production, while important, is oftentimes not reached in every module due to SGLs focusing on achieving the learning objectives and sacrificing the technical aspect of orders production.

The MCCC's writ is to produce graduates who are masters of TLPs and familiar with MDMP. They should not be expected to be masters in UCMJ and non-MTOE/non-operations-oriented staff positions. This includes the technical aspects of the Digital Training Management System. There are several reasons for this, but it mostly centers on the amount of time we have to make them tactically and technically proficient in all three formations the Army has – and in only 22 weeks.

MCCC instructors do their best daily to produce for the operational Army captains who are immediately prepared to assume duties on brigade and battalion staffs and to be competent company-level commanders when they assume command. The instructors' efforts, no doubt, provide Army captains

who can execute operations on a modern complex battlefield by synchronizing and delivering lethal and precise effects to achieve their commander's intent.

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CPT Thomas Flounders is an SGL for MCCC, Fort Benning. His past duty assignments include commander, Troop C, 3rd Squadron, 1st Cavalry, 3rd ABCT, 3rd Infantry Division, Fort Benning; commander, Headquarters and Headquarters Troop, 3-1 Cav, 3rd ABCT, 3rd Infantry Division; squadron planner, 3-1 Cavalry, 3rd ABCT, 3rd Infantry Division, Fort Benning; and assignment officer, Armor Branch, Human Resource Center, Fort Knox, KY. His military schooling includes MCCC, Cavalry Leader's Course, Ranger School and Infantry Officer Basic Course. CPT Flounder holds a bachelor's of arts degree in economics and international relations from the College of William and Mary.

Acronym Quick-Scan

AASLT – air assault
ABCT – armored brigade combat team
BCT – brigade combat team
BN – battalion
BOLC – Basic Officer Leader's Course
CAB – combined-arms battalion
CCC – captain's career course
CCTT – Close-Combat Tactical Trainer
CME – competitive maneuver (field) exercise
CoA – course of action
CoE – center of excellence
COIN – counterinsurgency
Conop – concept of operations
CPoF – Command Post of the Future
FY – fiscal year
IBCT – infantry brigade combat team
IPB – intelligence preparation of the battlefield
JCATS – Joint Conflicts and Tactical Simulations
JFP – joint firepower
LFX – live-fire exercise
LT – light
MCCC – Maneuver Captain's Career Course
MDMP – military decision-making process
MNGMT – management
MPCC – Maneuver Pre-Command Course
MTOE – modified table of equipment and organization
Opord – operations order
PE – practical exercise
PoI – program of instruction
R&S – reconnaissance and security
SAMS – School for Advanced Military Studies
SBCT – Stryker brigade combat team
SGL – small-group leader
SQDN – squadron
TLP – troop-leading procedures
TNG – training
UCMJ – Uniform Code of Military Justice
UTM – unit-training management
VBS2 – Virtual Battlespace 2
VBS3 – Virtual Battlespace 3
WK(s) – week(s)

Armored Forces: An Indispensable Component of Strategic Deterrence

by MAJ Nathan A. Jennings

Armored ground forces have long been a central component of America's land-power dominance. Despite a decade of predominantly light, motorized and decentralized security operations in Southwest Asia, Russian aggression in eastern Europe has again reminded the world that combined-arms teams of mechanized infantry, Armor, Cavalry, artillery, engineers and air-defense assets – and associated support systems – will remain a decisive factor in shaping the 21st Century geopolitical landscape.

Coalition efforts in defeating the Islamic State in the Middle East, which will undoubtedly include robust ground offensives to retake fortified cities like

Fallujah and Mosul, will likewise emphasize armored primacy. This focus on concentrated maneuver and joint synergy, incorporating the dynamic confluence of mobility, survivability and lethality found in armored brigade combat teams (ABCTs), finds greatest relevance in the irreplaceable strategic deterrence that only a robust mechanized force can provide.

Unified land operations of this scope consequently requires capabilities specific to ABCTs, complementing those of equally crucial infantry and Stryker formations, to allow multi-faceted scalability in nation-state deterrence. In the context of joint operations, this utility emerges prominently along two important dimensions of expeditionary power: combined-arms maneuver (CAM) by networked formations to defeat or neutralize opponents, and the projection of ground presence to serve as scalable instruments of national in-

fluence – both tangibly and symbolically to bolster allies or intimidate opponents.

While arguments against reduction of the army's mechanized corps, which is planned to comprise 30 combined-arms battalions (CABs) across 10 armored brigades by 2017, often emphasize historical necessity, the unrivaled shock effect of mobile protected firepower, and the recently proven value of heavy platforms in wide-area security operations, the greater imperative of strategic deterrence and the armored force's singular role in unleashing it, offers the most compelling of justifications.

Deterrence through CAM

The first and most dynamic aspect of armored deterrence, often culminating in decisive action, allows the United States to wield the ultimate expression of land dominance against intolerable organizations and nation-states. While



the American defense arsenal contains a customizable panoply of threatening instruments, ranging from devastating air power to cyber warfare and Special Operations Forces interference, the Army's wide range of combined arms and joint potential remains the most comprehensive and irresistible means for definitively shaping security environments. Though hostile and rogue leaders stand acutely aware of the United States' multi-faceted capacity to destabilize and degrade their standing with rapid attacks by aerial and motorized formations, it is the potential of forcible entry by the Army's III Corps, now the greatest concentration of mechanized forces in the free world, that focuses attention on the realistic possibilities of regime change in many contested regions.

Influence of this scope, unchanged in its effect since the eras of Caesar, Napoleon and Eisenhower, and now confirmed again by Russian positioning and provocations in the Ukraine, remains the most compelling instrument for coercing nation-state behavior. It is the expeditionary invasion – which must usually contain large-scale ground formations to deploy, close with and destroy the enemy through both physical and psychological shock effect – that allows joint forces the ability to prosecute limited offensives against specific structures or comprehensive campaigns against unstable regimes. While the 1991 Gulf War – where an American-led coalition destroyed the Iraqi army with sweeping CAM – exemplifies the former, the 2003 opening phase of Operation Iraqi Freedom – where the United States and its allies invaded Iraq with unprecedented joint synchronization and synergy – provides a conditional example of the latter.

Just as the very existence of a robust armored force allowed the United States to forcefully conduct the decisive phases of these land wars, and the same prowess has facilitated coercive leverage against belligerent opponents since World War II, the absence of such strength would result in a conversely proportional weakening of influence. No longer able to threaten atrocious regimes in appropriately maneuverable regions with the imminent potential of mechanized invasion – as



Figure 1. An M1A2 Abrams Main Battle Tank from 2nd Armored Brigade Combat Team, 4th Infantry Division, encounters a camel during a weeklong bilateral exercise in February 2014. (Photo by SGT Marcus Fichtl)



Figure 2. SPC Cody Winder, an M1A2 System-Enhancement Program Abrams loader for 2nd ABCT, 3rd Infantry Division, conducts bore-sighting procedures during live-fire accuracy screening. (Photo by SGT Richard Wrigley)

opposed to the often unrealistic option of massively destructive bombardment and the more conditional impacts of precision strikes and lighter ground attacks – the nation would eventually forfeit a significant measure of its global leadership status. This possibility alone, in addition to the diminishment of high-intensity tactical dominance that would ensue, is reason enough to argue for the preservation of an impactful quantity of heavy brigades. For evidence of this reality, observers need look no further than East Europe and Mesopotamia, where military advances by belligerent powers have directly benefited from reduction in American presence.

Deterrence through armored presence

A second aspect of strategic utility

unique to armored forces is the option of forward-posturing ground formations in targeted locations to allow preemptive deterrence. Serving as a more graduated and passive measure than the finality of offensive operations, the positioning of armored brigades in appropriately maneuverable regions offers both a psychological and physical presence that no other BCT or military asset can match. While naval and air components generally influence with stand-off effects, and light, Airborne and Stryker organizations lack commensurate implications of permanency, penetrating operational reach and survivability, the heavy formations communicate a definitive statement of national resolve that cannot be ignored.

Even within the ABCTs themselves the deterring effect is adjustable, as



Figure 3. A Soldier assigned to 3rd Armored Brigade, 1st Infantry Division, pulls security next to an M-2 Bradley Infantry Fighting Vehicle during a training rotation at the National Training Center, Fort Irwin, CA. (Photo by SGT Eric M. Garland II)

various task organizations can offer greater or less degrees of intimidation and support. While main battle tanks – such as the M1A2 Abrams with its inherent implications of maximum lethality – serve as universal symbols of aggression and offensive capability, more versatile platforms, such as the M2A2 Bradley Infantry Fighting Vehicle and other armored personnel carriers (APCs) reveal a moderated posture that allows more nuanced communication of American intent. Taking the organizational customization further, maneuver brigades can be readily empowered with greater ranges of internal combined-arms potency by task-organizing light, aerial, motorized and mechanized battalions under single commands. In this manner, the graduated utility of projecting heavy assets to buttress diplomatic endeavors, scaled to convey specific levels of preparedness, can produce a multiplying effect.

The positioning of armor-centric forces with combined-arms potential can thus be highly effective in bolstering allies in contentious regions. In long-term security agreements, like those the United States has maintained with South Korea, Germany and Middle East allies, the enduring presence of survivable and lethal ground formations transmits

the depth of American commitment. In other situations where rapid deterrence is needed on behalf of a threatened partner, as exemplified by the developing crises in Ukraine and Iraq, the positioning of armored brigades or more diverse task organizations for allied training and readiness operations can have a powerful stabilizing effect. Going forward, this type of support will

be extremely beneficial under Brigade Regional Alignment, as the deployment of CABs with tanks and APCs will contribute an empowering impact on relations with partnered relations.

If the bolstering of host and allied nations is beneficial to American alliances, then the conditional intimidation factor of armored forces is equally valuable. The sheer presence of formations with superior survivability, mobility and lethality in density across trafficable landscapes carries a degree of passive military and political intimidation that cannot be replicated by any other national asset and severely limits a belligerent state's offensive options. Once in position, even if aggressive maneuver operations are not militarily or diplomatically viable, the mechanized combined-arms force becomes a capital asset that cannot be attacked without risk of massive retaliation by superior American strike power. Consequently, the forward placement of heavy formations in maneuver proximity to hostile or rogue regimes allows a potent and coercive effect without resorting directly to kinetic action. The North Atlantic Treaty Organization's Operation Atlantic Resolve, which is intended to establish a strategic cordon against Russian influence in 2015, perfectly represents such limiting endeavors.



Figure 4. PFC Adrian Echeverria, an indirect-fire infantryman with 2nd ABCT, 4th Infantry Division, prepares to load a 120mm mortar round during gunnery qualification near Camp Buehring, Kuwait. (Photo by SSG Andrew Porch)

Conclusion

The Army Chief of Staff recently stated definitively that the U.S. Army's mission is "about deterrence and compelling others not to do things." To achieve this value, the nation's premier land-power service must be composed with enough armored density to support American interests in unified land operations across diverse environments. Following the Army's restructuring, one-third of its planned 32 maneuver brigades will remain mechanized across 1st Armored, 1st Cavalry and 1st, 3rd and 4th Infantry Divisions, reflecting a 21-percent reduction in ABCTs since 2012. Given the need to maintain a balanced force amid competing fiscal priorities, while still recognizing the irreplaceable versatility that infantry and Stryker BCTs provide in topographically restrictive regions and urban settings, the Army must resist the temptation to further downsize the heavy force from this historically low stature. To do so would not only restrict America's strategic options but also place its capability to dynamically influence populations and resource initiatives in jeopardy.

In the final analysis, the imperative of American expeditionary land dominance will always fall to the national

army. In pursuit of this mission, the ground force needs to maintain a robust armored corps that amplifies joint capabilities and is capable of meaningfully shaping operational conditions and outcomes through strategic deterrence. In the dimension of combined-arms warfare, the nation must have a maneuver component that can unleash shock effects against opponents with the highest intensity of mobile protected firepower. In the more graduated realm of strategic posturing, it requires an arsenal of mechanized brigades to serve as impactful instruments for bolstering allies and intimidating opponents. Given the potential damage that attrition to the remaining heavy formations would have on the nation's strategic and tactical capabilities, the imperative is clear: the Army must maintain a decisively capable armored force, and it must be sized to meet the security challenges of the 21st Century.

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Acronym Quick-Scan

ABCT – armored brigade combat team

APC – armored personnel carrier

BCT – brigade combat team

CAB – combined-arms battalion

CAM – combined-arms maneuver

Tank Master Gunner Course 40 Years Later — What's Next?

by retired 1SG Jack Cooper

Forty years ago, GEN Donn A. Starry, then commander of the Armor Center at Fort Knox, KY, decided the Tank Corps needed some expertise to take it to the next level and so he created the Tank Master Gunner Course (mainly due to lessons-learned in the 1973 Yom Kippur conflict). The first class graduated in May 1975 with 15 graduates and never looked back. Now, 40 years and 4,080 graduates later, the course still continues to put out the best master gunners in the world. But is it enough? Are we giving the force what it needs? In this article, we will look at where the course came from, where it is now and explore ideas for where it needs to go to continue to produce the quality master gunners the force needs.

The Tank Master Gunner Course started with the M60A1 platform and progressed through the M551, M60A2, M60A3, M1, M1A1, M1A2 and Mobile Gun System (MGS) platforms. Many of the graduates returned to attend some of the other courses as the Army continued to equip units with updated vehicles. Master gunners quickly built a reputation as the “go-to” guys for all things gunnery and turret-maintenance related. As we moved into different conflicts, the role expanded further to advising the commander on enemy capabilities vs. U.S. capabilities, employment and battlefield training and sustainment. Master gunners soon permeated the Army structure from company level through corps and major commands (MACOMs).

The reputation tank master gunners enjoy spread throughout the Army. In the 1980s, the Bradley community climbed on board and started a Bradley Master Gunner Course. (In the early 2000s, the artillery and aviation communities also started their version of the Master Gunner Course.) This emulation has continued to expand, and there are different courses offered throughout the Army that have a connotation of being a master gunner for

their specific career field (digital master gunner, for instance).

The one thing these courses have in common is that they all have their roots in the Tank Master Gunner Course. Commanders throughout the Army have been influenced by working with and observing tank master gunners during their early formative years (i.e., branch-detailed officers) and have taken this vision of mastery and pushed to create that type of expertise within their career fields.

Qualifications

Over the last 40 years, the Tank Master Gunner Course has changed, but not significantly. We have updated classes to reflect the platforms and incorporated lessons-learned from combat. What we haven't changed are the core precepts of the course.

For those of you not familiar with what the course teaches, here is a brief overview of the path to becoming a tank master gunner.

A Soldier must:

- **Have a 19K military-occupation specialty (MOS).** Pretty self-explanatory. Only tankers are allowed to attend the course designed for tanks. Makes good sense.
- **Be a promotable sergeant to sergeant first class.** Experience is definitely an indicator of success. Could someone pass the course as a specialist? Possibly, but the application of skills leans heavily on a person's experience level.
- **Have a general-technical score of 105 and combat-operations score of 110 on the Armed Service Vocational Aptitude Battery (ASVAB).** These dictate the Soldier's ability to achieve the course standards. It's a tough course, and information is given at a fast and furious pace. Those with scores below the requirement may not be able to keep up. There are always exceptions, and the best

indicator for someone who doesn't have the requisite score is the Test of Adult Basic Education (TABE) test. If a Soldier scores at a 12.9 level on the TABE, he should be able to keep up with the course. (This also is an indicator that he could probably raise his ASVAB scores if he retested. Sometimes high-school ASVAB scores are not a good indicator of what a Soldier can achieve.)

- **Possess one year of tank/MGS commander time.** See Bullet 2. Experience helps.
- **Have qualified as a tank/MGS vehicle commander (VC).** VC duties are different than gunner duties, and the experience is necessary.
- **Complete the Gunnery Skills Test within the last three months.** These are skills we build from and having them down cold is important.
- **The Soldier must volunteer for the course.** It can be a thankless job, and if you don't want to be there, the odds of your passing are greatly diminished.
- **The Soldier must have a remaining service obligation (RSO) of at least 10 months.** The Army has a right to get a return on its investment. Personally, I think it should be 24 months.
- **The Soldier must be personally interviewed and recommended by the battalion commander.** This is probably the single most important interview you should have. Some commanders have the command sergeant major do the interviews, and in some cases, it isn't done in person but on the recommendation of the current master gunner. Commanders at all levels should interview the candidates, and the commanders and Soldiers should both understand what being a master gunner entails.

Training phases

OK, a Soldier has been interviewed, meets all the prerequisites and reports to Fort Benning, GA, for training. The training follows three basic phases: maintenance, advanced gunnery methodology and training management. (See Figure 1.)

Maintenance. When I was the Tank Master Gunner Branch chief, I was asked many times why we train maintenance first in the course, or heck, why at all. It's simple, really. To effectively understand the system and how to best use it, you have to know how it works. A NASCAR crew chief is responsible for training his entire maintenance crew, prepping and preparing the car, and adjusting it to meet the driver's needs. He does this by understanding the complete system – similar to our mechanics who work on our equipment. The driver has to understand how the adjustments the crew chief makes affect the car and works with the mechanics to get the best performance out of his car. The driver is not a mechanic but knows enough about the mechanics of the car to advise the crew chief when something is

wrong or is potentially going wrong. The Tank Master Gunner Course follows the same principle: you can't effectively train or advise a crew to perform to the highest possible standard unless you know how things work.

This does not mean we train the candidates on everything mechanical; we have proficient mechanics, and a master gunner is not a replacement for them – not even close. We teach them about the systems that impact the crew's ability to effectively fight and maintain their vehicles in combat and training. If a system breaks in combat or training, the master gunner, often over the radio, may be able to troubleshoot or provide workarounds a mechanic may not know (like a driver telling his crew chief about a vibration caused by a loose lugnut). The mechanic is concerned, rightfully, about the *mechanics*, of the platform, while the master gunner is concerned about the *overall performance* of the vehicle and crew.

Many times I have witnessed (or have been) the master gunner talking crews through issues from the tower, finding the fault or a workaround that allowed

the crew to continue the mission without getting maintenance involved. The time it would have taken the crew to go to maintenance, have the problem diagnosed, repaired and then return to training can be the difference in mission success or failure. This is especially true if the problem is something that could have been dealt with by the knowledge and experience of the master gunner (i.e., incorrect input into the computer, having the sight in the wrong power, etc.).

These solutions and workarounds the master gunner uses are direct impacts of understanding the way the system works and what the likely problems are. Not all problems can be fixed; many are beyond the scope of the master gunner to fix or diagnose, and that is where maintenance personnel come in.

The Tank Master Gunner Course's maintenance phase has classes like basic electricity, fire-control system, power and data management, turret electrical and hydraulic system maintenance, armament-system maintenance, turret electrical and hydraulic system maintenance, armament-accuracy checks or gun-tube technology. The maintenance phase is

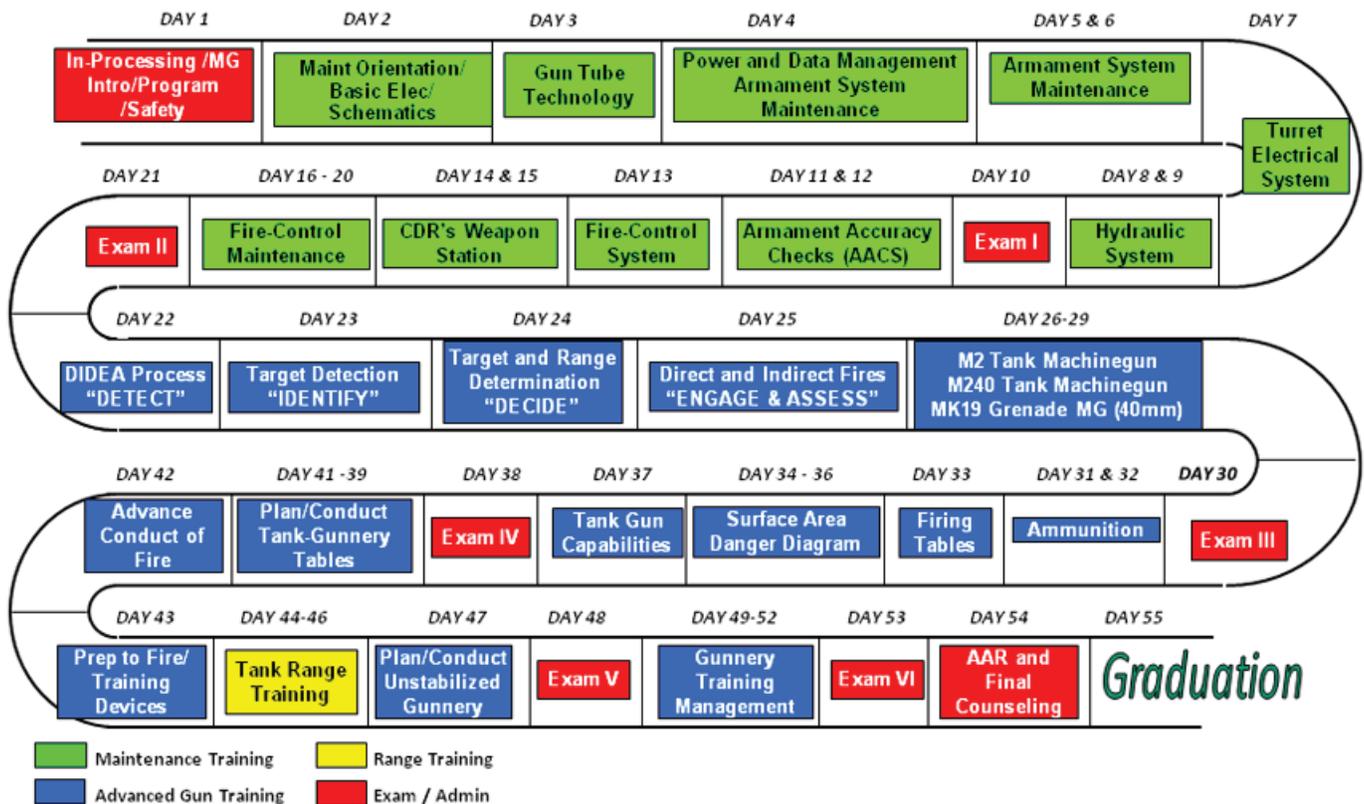


Figure 1. The M1A2 System Enhancement Program master-gunner course is 11 weeks/55 days.

the foundation for everything else the master gunner will learn in the coming weeks and is probably the most important aspect of the course.

Advanced gunnery methodology.

Once a candidate successfully completes the maintenance phase, he moves into the advance gunnery methodology phase. This phase builds on the maintenance phase and on the individual's experience. This is where tanking becomes a science. Candidates learn the entire *detect* (target detection), *identify* (target and range determination), *decide* (direct and indirect fires), *engage* (fire commands) and *assess* (DIDEA) process; how DIDEA works; and how to train crews in the DIDEA process. They learn the finer points of machineguns, how to build surface-danger zones (SDZs) and how to understand firing tables. They receive detailed knowledge on ammunition from 7.62mm through 120mm, training devices, environmental factors that impact tank capabilities, and how to plan and conduct training ranges.

The advanced gunnery methodology phase creates the detailed knowledge master gunners are known for having at their fingertips. Most crews understand that we give fire commands, load ammunition and shoot targets. They don't know how all of it interrelates or why. The master gunner does. He uses this knowledge to increase the capabilities of the crew, making them more knowledgeable and, more importantly, more lethal on a field of combat.

This phase culminates with the candidates building a live-fire range, conducting range preparation and vehicle preparation, and conducting a live-fire training event. The candidates are evaluated on all aspects of the range and are given opportunities to serve in every range position from master gunner to safety to RSO to officer in charge. This gives them a good understanding of the total range process and not just the targetry or tower aspect. Candidates are evaluated on inspecting ammunition and determining computer-correction factors, and are given an in-depth understanding of how the different inputs to the computer system can impact the round's strike.

The candidates also serve as the crews

for the vehicles on the range, so they have to prepare them, boresight them, load them and shoot them. After all the shooting is done, candidates are also responsible for clearing and turning in the range.

Training management. Finally the candidate enters the training-management phase. This phase takes all the knowledge the candidate has received, leverages his experience and teaches him how to put it all together into a cohesive training plan for the commander. This phase also teaches a candidate how to present the data; explain development of the program, the program's goals and assessments; and be able to validate the program's objectives if necessary. A good gunnery plan is not built in a vacuum and is designed with the commander's intent in mind at all times. If we fail to build a program that allows the commander to achieve his goals, we have failed in our mission.

We don't lose too many people in this phase, but generally, the ones we do lose are unable to coherently present their plan and respond to direct questions involving the plan's detail. The instructors delve deep into the candidates' knowledge base and use that as a final check on training.

The instructors will not allow a Soldier to graduate the course who is not able to represent the quality of the master gunner we have developed over the last 40 years. We owe it to commanders and to the Army to only graduate the best master gunner we can train. In the last 40 years, that has worked out to around 100 per year. That may sound like a lot, but in reality, it is less than 1 percent of the Armor force.

Testing and attrition rate

Every few years the Master Gunner Branch gets asked to look at our grading criteria and attrition rates and find ways to reduce the failures. I understand the reasoning perfectly, and we have had studies done to assist us in doing so. Bottom line up front: the course is operating the way it should be, testing the way it should be and providing the candidates with all the needed information to pass the course.

I have been asked why the Tank Master

Gunner Course has a 90 percent grading criteria on written tests and a 100 percent criteria on hands-on testing. Simple answer is we do not train or graduate the average Soldier. We call them *master gunners* for a reason. The Army has always set 70 percent as the requirement to graduate from any basic-level Army course. That is perfectly acceptable for the average Soldier and average course. It is not acceptable for a master of a craft. My analogy is that 70 percent = average, 80 percent = expert and 90 percent = master.

Does this mean the other courses that do not have 90-percent-or-better criteria are not putting out quality master gunners? No. It means they determined what was best for them. We are not in a competition. Our standard is what it is because that is what the tank community has said it wants, and we have striven to ensure we have continued to maintain the standard GEN Starry demanded from the course's inception. Every master gunner who has ever graduated from the course will defend the 90-percent standard. Even candidates who did not graduate would tell you they were given all the necessary information they needed to pass the exam, and it usually is a dumb mistake that causes them to fail the test.

There have also been suggestions made to retain the Soldier in the course even if he fails because something is better than nothing. I couldn't disagree more. As I mentioned above, 90 percent has always been the standard, and it is a standard that *has* to be maintained. If it is not, the knowledge base of the master gunner is compromised. There was an Army Research Institute study a few years back that specified that the course standards should not change, yet this issue raises its head again and again.

Our current testing cycle goes like this:

- Candidates are given an in-depth review the day before the exam.
- The next morning they take the initial test. Normally this covers four to six subject areas.
- Should a candidate fail an area, he is counseled by the team chief and is then retrained by the primary

instructor of that block of instruction. That afternoon, after retraining, the candidate is given a retest of the failed areas only.

- Should the candidate fail a second time, he is then counseled by the dismissal authority (currently the battalion commander), retrained again and then given overnight to prepare. The next morning, the candidate meets with the primary instructor to review once again. After the review, the third retest is administered.
- If the candidate fails, his time at the course is over. If he passes, he joins the other candidates for the next block of instruction. This allows candidates to focus only on those areas they were deficient in.
- During the review process of each step of the exam, the instructor is required to show the branch chief and then the dismissal authority how, where and when the candidate was instructed on missed material. This is our system of checks and balances that ensures the candidate was given all the necessary material during the course.

Should there be any question about the presentation of the material (either in how the instructor presented it or in the reference itself), the benefit of the doubt is given to the candidate. The instructors are there to help the candidates and are required to make themselves available to the student 24/7. We have never “taught the test” – i.e., given oral or physical cues on “testable information.” It is all testable, and candidates need to place the same emphasis on all aspects of the course.

The attrition rate is the number looked at after a candidate fails the course. The number varies from year to year and class to class. But, after 40 years, our overall average is right at 20.8 percent. That is comparable to most Army courses and better than quite a few. We have had classes reach 60 percent attrition or higher, and we have had classes with a zero-percent attrition rate.

Some of our highest attrition rates occurred during the last decade or so. This was mainly due to a loss of focus

on the course. Soldiers were coming straight from combat deployments to the course (some literally straight out of combat) and had not been on tanks for a while. We granted a lot of waivers for qualification and tank-commander position-time requirements. This got worse as the Iraq and Afghanistan deployments continued over the years. It was tough on candidates who had been deployed for nine to 12 months or more to come to Fort Knox (or Fort Benning, GA) to attend the Tank Master Gunner Course for three months. They wanted to see their families and decompress. At the beginning, many deployed again within months of returning to their units. Not anyone’s fault; it was just the way things were at the time.

Unit leadership was hesitant to send Soldiers right after deployments and asked us to put together mobile training teams (MTTs), which we did. They were not the resounding success we had hoped for. Why? There are many distractors at home station: candidates were still on the duty roster, had hey-you appointments or details, wanted family time, etc. ... the normal things that impact Soldiers at home station. The MTTs had some of the highest attrition rates we ever had. Soldiers who physically come to the course tend to be more focused, and the distractions are at a minimum.

So why do people fail the course? There are a multitude of reasons, but the two most common are failure to meet course prerequisites and improper study habits. Why do we allow Soldiers to attend who fail to meet course prerequisites? Commanders can and do request waivers to some of the prerequisites, which are generally granted. Commanders know their Soldiers better than we do, and usually they do pretty well. But, by and large, the ones who did not succeed did not meet one or more of the prerequisites.

The other major cause is improper study habits. This is a demanding course, and working as part of a study group is critical. Candidates who attempt to go it alone are rarely successful. Candidates are in class eight hours a day and usually have two to four hours of homework and study groups nightly. The dedication required

is prodigious, to say the least. The candidates are informed upfront about the study requirements and necessity of study groups. But, periodically, some try to go it alone. They are rarely successful.

Recycling

As I mentioned, the attrition rate is always a concern – not just to units, but also to the schoolhouse and U.S. Army Training and Doctrine Command (TRADOC). We have had many studies done on the course over the years, and the most recent one reversed some of the changes we had made in the last seven to eight years. Why? Our attrition rate had gone up as a result of the changes, and the information was not being retained as well as it should be. Once the course realigned the classes and duration, the attrition rate decreased. At this point, the schoolhouse has done as much as it can to minimize attrition rates at its level.

Are there other ways to mitigate the attrition rate? One issue that gets raised a lot is recycling candidates. Currently, if a candidate fails to meet course standards in any week, whether it is Week 1 or Week 10, they have to start the entire course over. Units have been hesitant to send a Soldier back to the course if they drop for academics. Their reasoning is twofold and justified:

- *Cost* – The unit does not receive a return on investment from the Soldier, and they do not know if the cost to send him back is worth it.
- *Unit mission requirements* – This has been the most likely reason. Once a Soldier returns to his unit, mission requirements take precedent, and the unit cannot afford to lose the Soldier for a second time.

How can we fix this? There are two ways to do it fairly easily. One is to have a candidate recycle to the start of the phase (maintenance, advanced gunnery or training management) he failed. This would help keep the Soldier focused on the task or tasks he failed and give a refresher on the classes he may have passed within that phase. The negative to this one is the time-frame he would wait for the next class to catch up. It could be a week, or it

could be a month, depending on how many classes are taught each year.

The other option is to recycle him to the last successfully completed test point. This would allow him to pick up where he left off and would reduce the amount of time he would spend at the course on his recycle return. This is the better of the two options, in my opinion, but still has the same problem of how long it will be before the next class reaches that point. If the courses are overlapped the entire year, it is pretty easy and manageable. If they are staggered, it is likely the candidate would return to his unit and be recycled to a later class.

This has several pitfalls that would have to be tracked closely. If a candidate is dismissed for academics, he needs to return to the course while the information is still foremost on his mind. Anything over three months will likely result in a candidate failing again on information given in the course's early weeks. Unit mission definitely has a major impact on recycling a candidate.

Either of these methods will help mitigate the attrition rate, but the biggest reducer of the attrition rate will come from ensuring we are sending the most qualified candidates to the course and minimizing areas to be waived.

Looking to future

There have been a lot of changes going on at Fort Benning in the last few years to better streamline the training base. One of those changes placed the Tank and Bradley Master Gunner Courses into the same company; another moved the MGS Master Gunner Course into a different company that was Stryker-Course-pure.

There are ongoing discussions on how the courses may change and what the future holds. I have heard people talk about combining all the master-gunner courses into one course. Another course of action (CoA) was deleting the maintenance phase and creating a "system" master gunner. Another CoA has all courses consolidated into one school while maintaining platform proficiency, and another has the courses remaining as they are.

Change is inevitable, and we need to

ensure that the change in the master-gunner courses is viable and maintains the standard set for the last 40 years.

Path forward

In the last 14 years, we have been fighting the war on terror continuously and doing it in ways we had not projected. There was no doubt that times had changed. Gone was the Cold War mentality, and terms such as *HIC*, *MIC* and *LIC* went by the wayside. Now that things have toned down in the Middle East and we have returned most of the force to the training base, we are starting to discover that a lot of historical knowledge on how and why we train has been lost. As we are starting to re-engage in decisive-action training, we are finding out the master gunners who were building and running training 14 years ago are by and large gone – lost to retirement or promoted to positions that take them away from the Soldier's daily training. This has created a knowledge deficit that will take time from which to recover.

The Tank Master Gunner Course provides the basic knowledge for a master gunner to train his unit proficiently. We took a downturn in graduates during the war on terror due to mission requirements, and we are only now starting to recover from that. But there are other changes affecting the force we need to address as well. These include the emergence of the Stryker Brigade Combat Team (BCT), the realignment of heavy BCTs to armored BCTs and a myriad of other changes that have impacted Army units. Pure Armor brigades and battalions are gone; the armored Cavalry regiment has been reborn in a new image; and the National Guard has restructured as well.

All this has helped commanders identify the need for master gunners of various types at various levels of command. The ability for a tank or Bradley platoon to operate as a small unit drives the need for a master gunner at platoon level. In a company/battalion/brigade (troop/squadron/regiment) team, we may need a tank master gunner and a Bradley master gunner. What about in a Stryker brigade/regiment? MGS, anti-tank guided missile (ATGM), infantry combat vehicle (ICV), reconnaissance vehicles (RVs) ... do we need a master gunner for them all?

What about the skills at the different levels? Are the skills at platoon level the same as at battalion / brigade / division / corps / U.S. Army Forces Command etc.? I can tell you from experience they are not. The skillset you develop in the Master Gunner Course prepares you to be a company-level master gunner. It basically gives you a bachelor's-level degree as a master gunner. You get a few classes to clue you in to some of the higher-level requirements, but we currently don't take it to a master's or doctorate level. Having served from company up through corps level, the skillset required to function at the higher levels is much different than at company level.

So how do we overcome these problems? To state them again, we need master gunners at company level with a standard skillset, and we need master gunners at higher-level positions with an advanced skillset. Why haven't we done this before? Well, before the war on terror, we did a lot of on-the-job training and mentorship. However, as stated, over the last 13-plus years, our focus changed. We were focusing on the skills needed in Iraq and Afghanistan ... and they weren't high-intensity-conflict focused. The master gunners who filled the upper-level positions and mentored the young, upcoming master gunners have retired or were promoted out of the master-gunner realm. We have lost a ton of experience, and the only way we can get it back quickly is to train it.

Proposal (one potential path)

In 2001, the then-U.S. Army Europe master gunner, Steve Krivitsky, and myself as the V Corps master gunner started bouncing around concepts of how we could better train our master gunners for higher-level positions.

Over the intervening years, we have continued to collaborate our ideas, and we have come up with "Master Gunner University." Our biggest issue right now is everyone wants a master gunner, but the instruction is held in two different companies and some MOSs are not involved. This does not facilitate getting the right person to the right place with the right training. We fix

this by combining the tank, Bradley and MGS courses into one school and adding another course for Stryker platforms. This would allow us to train the right master gunner and would also allow for the course's future growth. This "university" should be a standalone school that teaches the bachelor's-level, master's-level and doctorate-level courses.

- **Manning.** The university should fall under a Noncommissioned Officers (NCO) Academy-type of construct with a sergeant major (or civilian equivalent) as the chief/commandant/director. The chief would preside over the university, with the assistance of branch chiefs for each course. Also, the instructor teams would be broken down into maintenance, ammunition, safety, direct-fire and training-development teams consisting of instructors for each course. These instructors would become the subject-matter experts (SMEs) for their area – not only for instruction, but for doctrine and training development as well. The organization would look something like Figure 2.
- **Command group.** The command group would consist of the chief/commandant/director, an operations NCO and an administrative assistant (course developer?). The operations NCO would be an instructor-qualified NCO, and the administrative assistant would be a GS-12 position.
- **Basic instructor qualifications.** The university chief/commandant/director must be a master gunner (sergeant major) (or a civilian-equivalent position) and must have served as an upper-level master gunner during his career. The length of position would vary

depending on how it is manned.

- **Branch chiefs** – Each course should be managed by a branch chief (first sergeant). The branch chiefs should be branch-qualified (*key developmental* (KD) in today's language) and have served previously as an instructor and preferably in a higher-level master-gunner position. They should serve for 12 months' minimum to 24 months' maximum.
- **Instructors** – Instructors should be in the rank of sergeant first class, be branch-qualified (KD) and have served at company level as a master gunner for at least 12 months. Higher-level positions are desired but not required. Instructors should serve for no less than 24 months and no more than 36 months.
- **Course organization.** The courses would be organized so they all begin and end at the same time. Candidates would attend core classes and platform-specific classes.
- **Core classes** – Core classes are those classes that transition platforms. This would include things like DIDEA, SDZs, basic electricity, technical manuals and training management. All candidates regardless of MOS would attend all the common-core training and only be split out to their individual platform as required.
- **Platform-specific** – As the name alludes to, these classes would focus on specific platform training from whichever course the candidate was enrolled for. This would include tank, Bradley, MGS or Stryker platforms. This is the maintenance-intensive

aspect of the course. Candidates will learn the ins and outs of their platform and how best to use, troubleshoot and train crews on their specific platform.

Check-out. Once instructor-candidates are assigned to the schoolhouse, they are given the subjects they will instruct. They are then given time to familiarize themselves with the material and become the SME on the subject. They are assigned a mentor to assist them in the process, and they are given dates to prepare for check-out.

Check-outs begin with peer reviews and "murder boards." The harshest graders are the instructors themselves. They do not want someone to teach a subject until they are sure they have it down cold.

After the peer review, candidates present their class to all the instructors, including the team chiefs and the course developer. If the team chiefs and course developer feel the instructor has mastered the subject matter, he is certified to teach. He will then be assigned as an assistant instructor initially and evaluated in front of actual students.

Over the years, the Tank Master Gunner Branch has been evaluated multiple times on instructor check-out, and we have always had the highest scores for training instructors.

Should a candidate fail any part of the check-out, he is granted another look. If the team chiefs and course developer do not pass the instructor-candidate, he is given a final opportunity to present his class to the branch chiefs and commandant. Should the candidate fail to achieve the standard to be an instructor (rare), he would be reassigned out of Master Gunner University. We have always had the best

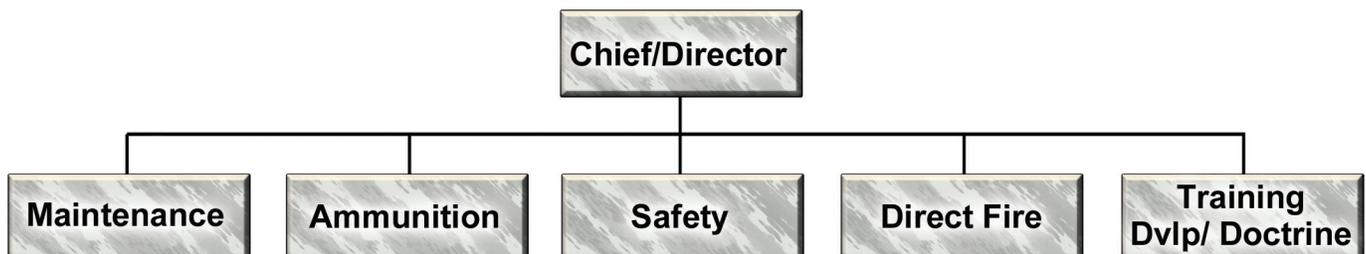


Figure 2. Proposed organization of Master Gunner University staff.

instructors in the Army, and that is a standard that must be maintained. A non-master gunner cannot evaluate the standards of our instructors since they do not know or understand the level of detail we require of our instructors.

- **Maintenance team.** The maintenance team would consist of an overall team chief (normally filled by the senior instructor). Each course would provide instructors to this team, who specialize in the maintenance instruction of their platform. There are several core classes that would be taught to all students, and all instructors on the maintenance team would check-out on the core classes.
- **Ammunition team.** The ammunition team would follow the same structure as the maintenance team – with the exception that all instructors would be checked-out on common ammunition classes and specialize in their specific platform’s primary munitions.
- **Safety team.** Once again, the same structure would be used. The difference here is all instructors would be trained on all safety aspects. This includes surface-danger zones and firing tables.
- **Direct-fire team.** This would follow the same structure as the rest but would follow the basics of the current advanced gunnery methodology training currently taught. Instructors will be checked-out on all common-core classes but will focus on their specific platforms for Range Week.
- **Training development/doctrine team.** Personnel on this team would come to the team after first serving on one of the other teams. These instructors would augment the other teams and be the primary training developers for all courses and the primary instructors for the advanced courses. Also, they would be the primary writers of gunnery doctrine for their specific platforms.

Bachelor-level courses

The bachelor-level course would be

structured similar to today’s master-gunner courses. The concept would follow the maintenance ([Figure 1 on linked Excel file in our on-line version](#)), advanced gunnery methodology ([Figure 2 on linked Excel file](#)) and training-management standard ([Figure 3 on linked Excel file](#)). The main changes are that students would be consolidated for core classes where appropriate and separated for platform-specific classes.

Also, a new course, Stryker Master Gunner, would be introduced. This course would focus on the ICV, RV and ATGM platforms and systems.

This concept is not completely new. We have been discussing similar concepts for a while now. What is completely new is creating this concept under its own leadership. It is time for this mature course to truly stand alone.

Master’s-level course

The master’s-level course would be taught by the same instructors as the basic course, but instruction would focus on battalion-level master-gunner training. Classes would include such things as safety-of-use messages, ammunition information notices, Range Facilities Management Scheduling System, Total Ammunition Management Information System, composite SDZs, TRADOC Range Safety Level II, combined-arms live-fire exercise development, collective-training exercises, battalion gunnery training, ammunition and the Training Aids, Devices, Simulation and Simulators system.

This course of instruction would take about three to four weeks and could be taught as a resident course or via video teleconference (VTC). This course would be platform-immaterial and would provide the master gunner with the information he needs to succeed at battalion level.

Criteria for attendance would be 12 months served at company level and hand-picked by their battalion commander.

Doctorate-level course

Doctorate-level classes would be taught by existing instructors as well as assigned mentors from like positions or higher. Classes would include range design; range design (deployed); joint

and/or international gunnery and training exercises; planning and conducting exercises at the joint and/or international level; simulation and constructive exercises; gunnery standard-operations-procedures development; doctrine development; and training development.

This course of instruction would last about two to three weeks and would be taught as a resident course or via VTC. This course would be platform-immaterial and would provide the master gunner with the information he needs to succeed as a brigade, division, corps or MACOM master gunner. This would also include combat training center (CTC) master gunners.

Criteria for attendance would be 12 months as a battalion master gunner and selected by the position commander (i.e., brigade, division, CTC, installation, corps or MACOM commander). Normally, a brigade-experienced master gunner would take a position at the higher levels.

Summation

There is no doubt we are still producing quality master gunners and will continue to do so. The question is whether we are fully meeting the force’s needs. It is apparent we need to adjust our thinking in light of the changes made within the combat force, and we need to ensure master gunners remain relevant and viable within that force.

Attrition rates are always a concern,

Web special! Please see Excel file linked from our on-line version, [Cooper-MG_Course_tracks.xls](#), to see specific proposed Tank Master Gunner Course tracks.

(Key for the color coding on the linked Excel file: light green equals core classes; yellow means exams; and other colors signify platform-specific courses. These are just examples – actual task selections would determine the specific courses – but it is pretty close!)

but they can continue to be mitigated or potentially even reversed by selecting the right candidates, ensuring prerequisites are met and using a pre-course. The course as a whole is still viable and continues to graduate quality master gunners.

What we are lacking is experience within the master-gunner realm. Master Gunner University helps close that gap and provides a repository for knowledge. We need to continue to leverage whatever master gunner experience is still available, and we need to document and maintain that information within the university.

If we do not move forward with a concept like I outlined, we will lose the battle for experienced master gunners, and the entire Armor force will be neglected because of it. The time is here. To wait is to stagnate and lose what little knowledge we have.

Retired 1SG Jack Cooper is a lethality consultant and liaison for the Program Manager-Maneuver Ammunition Systems (Large Caliber) to the TRADOC Capability Manager for the Stryker BCT, where he is the SME for 105mm ammunition. Assignments while on active duty included Master Gunner Branch

chief and commandant, 2-16 Cavalry, Fort Knox, KY; first sergeant, Coalition Joint Task Force-7 Joint Operations Center, Baghdad, Iraq; master gunner and Tactical-Actions Center NCO in charge, V Corps, Heidelberg, Germany; observer/controller and live-fire master gunner, Joint Readiness Training Center, Fort Polk, LA; and tank commander, company master gunner and tank-platoon sergeant, Companies B and D, 3/8 Cavalry, 1st Cavalry Division, Fort Hood, TX. While with V Corps, he deployed in support of Operation Iraqi Freedom and was part of the advance team planning the Iraq invasion. His military schooling includes Abrams Master Gunner Course, M1A2 New Equipment Training, M1/M1A1 Tank Commander Certification Course, Operator Countermine Equipment Course, Advanced Gunnery Training System Senior Instructor-Operator Course, basic and advanced NCO courses, U.S. Army Recruiter's Course, Joint Firepower Controller Course, First Sergeant's Course, Commander's Course and Master Fitness Trainer Course. His awards and decorations include the Bronze Star Medal, two awards of the Meritorious Service Medal and the Audie Murphy Club.

Acronym Quick-Scan

ASVAB – Armed Service Vocational Aptitude Battery
ATGM – anti-tank guided missile
BCT – brigade combat team
CoA – course of action
CTC – combat training center
IDEA – detect, identify, decide, engage and assess
ICV – infantry combat vehicle
KD – key developmental
MACOM – major command
MG – master gunner
MGS – Mobile Gun System
MOS – military-occupation specialty
MTT – mobile training team
NCO – noncommissioned officer
RSO – remaining service obligation
RV – reconnaissance vehicle
SDZ – surface-danger zone
SME – subject-matter expert
TABE – Test of Adult Basic Education
TRADOC – (U.S. Army) Training and Doctrine Command
VC – vehicle commander
VTC – video teleconference

Train As We Fight: Training for Multinational Interoperability

by LTC Paul B. Gunnison, MAJ Chris Manglicmot, CPT Jonathan Proctor and 1LT David M. Collins

The 3rd Armored Brigade Combat Team (ABCT), 3rd Infantry Division, assumed the U.S. Northern Command (NORTHCOM) regionally-aligned-force (RAF) mission March 1, 2014. NORTHCOM RAF consisted of operating as the quick-reaction force/rapid-response force for homeland defense and natural-disaster response, and theater-security cooperation (TSC) with our Mexican and Canadian partners. This article describes TSC support provided for Canada's Exercise Maple Resolve 2014 by 3rd Squadron, 1st Cavalry Regiment.

Exercise Maple Resolve was a major Canadian training exercise that took place in late May 2014 at the Canadian Maneuver Training Center, Canadian Forces Base Wainwright in Alberta, Canada. The purpose of this article is to provide a perspective on training for interoperability through training centers and share lessons-learned from 3-1 Cavalry to man, train and equip a scout platoon to operate as the contemporary-operating-environment force (COEFOR).

Interoperability through training centers

"Units should train in peacetime as they will fight in war." –Field Manual (FM) 25-101, Battle-Focused Training, September 1990

The U.S. Army continues to operate under the principle of "train as you fight" spelled out in FM 25-101. Leaders use realistic training and incorporate training aids to give their Soldiers the closest experience of fighting in combat as possible. As the Army continues to transition from counterinsurgency-focused combat training center (CTC) rotations to the decisive-action training environment, units must continue to incorporate training with coalition partners.

The Army's CTC program is the paramount training event for units preparing for deployment and is most often the means for leaders to validate that a unit is fully trained. It is during a CTC rotation that Soldiers should receive the most realistic training possible, truly heeding to the "train as you fight" mantra. Currently, Army Regulation 350-50 defines the CTC program's mission as "providing realistic joint and combined-arms training, according to Army and Joint doctrine, approximating actual combat."

This mission statement is to be achieved through the following objectives:

- Focus on a mission-essential task list with training for combat operations as part of the joint team.
- Train for unified land operations and decisive-action missions, including offense, defense, stability and defense support of civil authorities.
- Stress realistic, sustained, multi-echelon and fully integrated collective combat training for brigade combat teams (BCTs), multifunctional support brigades, functional support brigades, division and corps headquarters, Army service-component commands and operational headquarters so these units can fulfill missions as joint-force land-component commands or joint task forces.
- Focus on performance-oriented training in a realistic tactical or operational environment assessed against established tasks, conditions and standards.
- Support achieving and sustaining leader development and unit-warfighting readiness using a combination of integrated live, virtual and constructive simulations.
- Facilitate commander's readiness assessments through live-fire, force-on-force and computer-simulated exercises that integrate all

aspects of lethal and nonlethal effects, tailored to the operational environment from platoon to corps level and based on unit-warfighting focus and CTC capabilities.

- Include instrumented urban-operations training experience during the rotation.
- Incorporate reception, staging, onward movement and integration operations, regeneration and deployment training.
- Fully integrate decisive actions.
- Execute mission-rehearsal exercises for brigades and below and mission-readiness exercises for divisions and above, as required.

While the CTC program's mission statement ensures that units train for actual combat as much as possible, the objectives should increase frequency to incorporate operations with other coalition partners. The program should include an additional objective for an interoperability training experience with a coalition force during the rotation. Interoperability is the measure of the degree to which various organizations or individuals are able to operate together to achieve a common goal. Interoperability is an excellent measure of performance to ensure units are prepared to fight as a part of a coalition force.

Similar to our own CTC rotations, Canada conducts Exercise Maple Resolve annually to validate its task forces' readiness for deployment. As Canada's largest annual exercise, Exercise Maple Resolve 2014 incorporated some 5,000 Soldiers from Canada, the United Kingdom and the United States (including active-duty, Reserve and National Guard units). The focus of this exercise ensures that the rotational unit is prepared to deploy in support of a coalition unit and accomplish the three mandates of the Canadian armed forces:

- Protect Canada and defend its sovereignty;

- Defend North America in cooperation with the United States; and
- Contribute to international peace and security through operations around the world, most often in partnership with allies from other countries.

Training for Maple Resolve

The variation between U.S. CTC and Canada's combat maneuver training center (CMTC) objectives poses several challenges in interoperability. The differences between traditional U.S. training objectives and those seen in Exercise Maple Resolve 2014 brought into focus some disparity in U.S. forces' communication abilities, planning processes and tactics.

The differing training objectives between the United States and Canada

created several challenges such as degraded communication abilities, differing planning processes and differing tactics. Although the planning and deployment for Exercise Maple Resolve identified several lessons to increase interoperability, the opportunity for United States to train in Canada in Exercise Maple Resolve further strengthened the military-to-military partnership.

The 3-1 Cavalry planned and executed a high-operational-tempo training timeline to train a wheeled scout platoon. The training consisted of the doctrinal training for a scout platoon, with more training to increase interoperability. The training timeline (Figure 1) describes training for 1/C/3-1 Cavalry's scout platoon at Fort Benning, GA.

The 3-1 Cavalry's training approach:

- Maximize training through

force-on-force. The 3-1 Cavalry leveraged section vs. section scenarios to create a force-on-force exercise achieving realistic training at the section level while training both sections simultaneously. This allowed the scouts to have an opposing enemy force working against them at all times, which increased the importance of mastering their fieldcraft as well as developing internal standard operating procedures (SOP) within their sections. Although efficient, this required external support for training support and validation to allow the entire platoon to be dedicated to the training event. Therefore, the platoon vs. platoon training not only supported the deploying unit but also was an opportunity to train sister platoons.

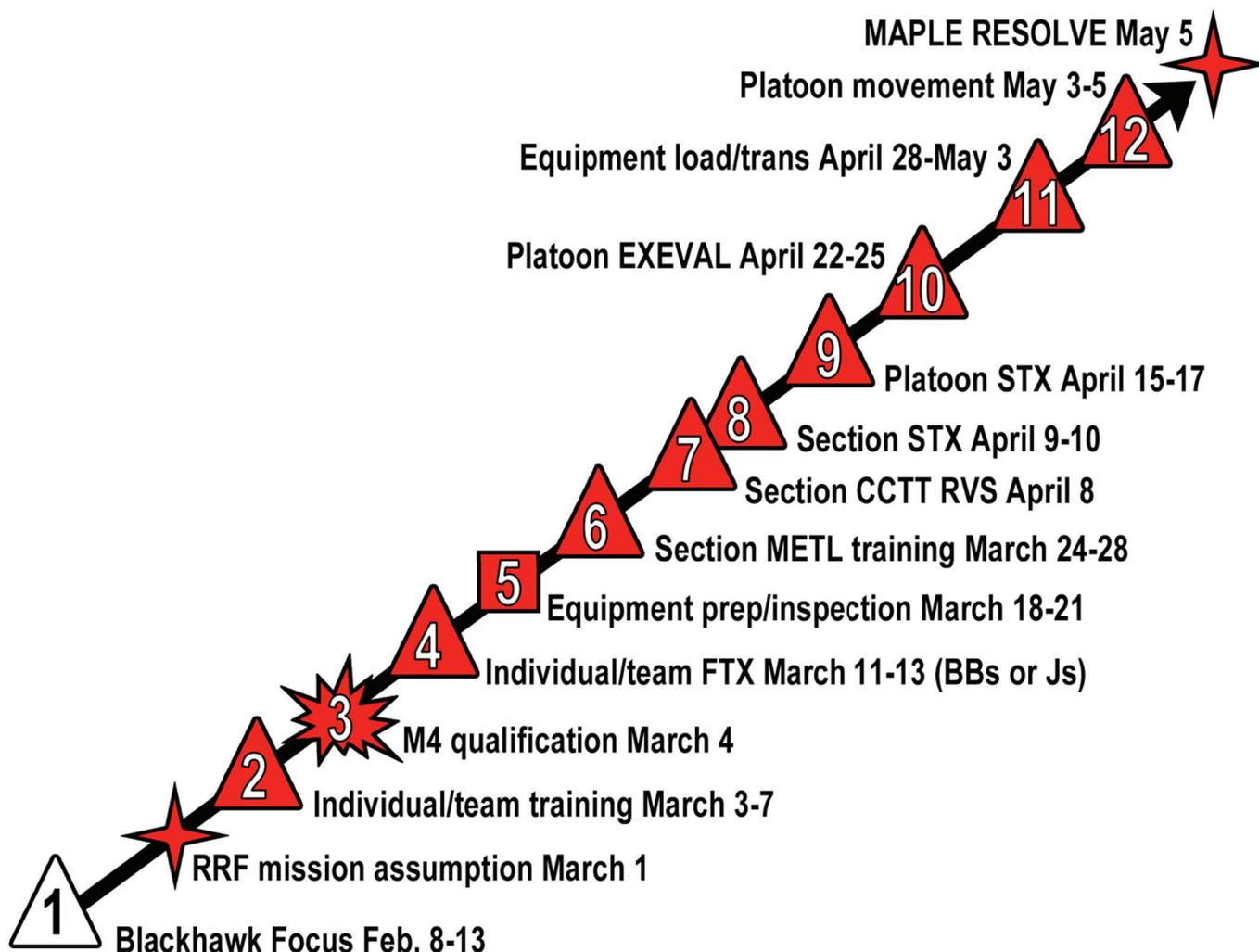


Figure 1. Training glidepath to Exercise Maple Resolve 2014.

For units selected to train in support of TSC missions, force-on-force training provides opportunities to train multiple units, especially under a constrained timeline.

- **Training in Canada.** The time planned for 1/C/3-1 Cavalry to deploy early to Canada allowed the platoon a training opportunity and familiarization with Canada's CMTC terrain. Also, the platoon integrated to the Canadian element they augmented into and presented an opportunity to conduct formal training to learn their SOPs and how they maneuvered.
- **Mounted/dismounted.** The 1/C/3-1 Cavalry deployed to primarily support as a mounted scout platoon, but the advantages of focusing both mounted/dismounted capabilities paid dividends in providing a larger capability set for the Canadians. During Exercise Maple Resolve, the platoon required enough parts for each vehicle to be on hand and easily accessible, so maintenance crews had to be on standby for mechanical issues and to ensure all vehicles stayed running and well maintained. Moreover, during the rotation, 1/C/3-1 Cavalry increased dismounted operations to further support their Canadian counterparts. The platoon conducted 26 missions and accrued a battle-damage assessment of 37 vehicles, seven helicopters and 289 dismounts – the highest throughout the exercise. Most of the damage the platoon was able to inflict was through limited mounted operations, with extensive dismounted tasks to establish observation posts (OPs) unobserved by the enemy. With the help of the Canadian fire-support cell, the platoon accurately delivered fires onto targets of opportunity, which aided in the prevention of enemy maneuver to the flanks, drawing them into key engagement areas. The platoon's ability to understand and leverage the Canadians' combat power was critical to their achievement.
- **Training aids.** U.S. training centers maintain their rank as among the

best training centers in the world because they use training aids such as the Multiple Integrated Laser-Engagement System (MILES). To maintain training aids' advantages, the platoon required the installation of the Canadians' Weapons-Effects Simulation (WES) system, similar to the U.S.-equivalent MILES. However, interoperability to install the WES system to 1/C/3-1 Cavalry weapon systems created challenges. As a result, the Canadians creatively adapted the WES system to limit the amount of firepower the platoon was able to engage enemy forces with due to the weapon's smaller caliber. Therefore, future deploying U.S. forces at the Canadian CMTC must allot planning time to deconflict training-aid compatibility.

- **Vehicle identification.** The Soldiers of 1/C/3-1 Cavalry required more vehicle-identification training. Upon arrival, the platoon leadership requested from their Canadian counterparts training on vehicle identification. The Canadians trained them on identifying enemy from friendly vehicles and understanding their weaknesses to destroy threats. For units attending the training held at Canada's CMTC, a vehicle study guide should be published and easily assessable for nation participation. These units should be tested on their knowledge, similar to the U.S. version of the gunnery-skills test, before they attend training.



Figure 2. The 1st Platoon built multiple OPs throughout Exercise Maple Resolve to observe significant information on named areas of interest, which contributed to the COE-FOR mission's overall success. Maple Resolve was held at Fort Wainwright, Alberta, Canada, in late May 2014. (Photo by SPC Kyle Olson)

- **Communication.** The lack of interoperability among coalition forces created setbacks in the exercise's initial phases. Communication devices were not compatible, causing difficulties in reporting, limiting the amount of information obtained from the battlefield that could be passed to higher. Dismounted Harris AN/PRC-150 radios had to be used to establish a line of communications. Although the AN/PRC-150 allowed for an established communication line, it could not be encrypted, which left the platoon's transmissions open to interception by electronic-warfare elements roaming the battlefield. The platoon countered this through the use of the terrain index-reference system and grid index-reference system, which allowed the platoon to operate in an unsecure net without compromising operational security. During their training, the platoon incorporated these methods during their section and platoon situational-training exercise lanes.

Conclusion

The objective of Exercise Maple Resolve 2014 compared to a U.S. CTC rotation is that the unit is prepared to deploy as a coalition force, not as a stand-alone unit. TSC missions such as 3-1 Cavalry's participation in Maple Resolve provide an opportunity to increase interoperability with Canada due to the divergence between U.S. and Canadian training-center objectives. In preparation for future TSC missions, deploying units should train to provide a range of capabilities from dismounted/mounted, in degraded conditions and, if possible, under a replicated environment similar to their partnered unit/roleplayers. The 3-1 Cavalry's support of Exercise Maple Resolve 2014 identified several lessons-learned to assist in future TSC mission planning and preparation to support our Canadian military partners.

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Acronym Quick-Scan

ABCT – armored brigade combat team
ACR – armored Cavalry regiment
BCT – brigade combat team
CMTC – combat maneuver training center
COEFOR – contemporary-operating-environment force
CTC – combat training center
FM – field manual
MILES – Multiple Integrated Laser Engagement System
NORTHCOM – (U.S.) Northern Command
OP – observation post
RAF – regionally aligned forces
SOP – standard operating procedure
TSC – theater-security cooperation
WES – Weapons-Effects Simulation (system)

REVIEWS

Shiloh: Conquer or Perish by Timothy B. Smith, Lawrence, KS: University Press of Kansas, 2014, 600+ pages, \$34.95.

Shiloh's 150th anniversary sort of came and went in 2012. Many shy away from it historically for a variety of reasons. It's not sexy like battles in the east (read: easily accessible). It didn't have the drama of Robert E. Lee (drama with Burnside?). The Army of Northern Virginia wasn't involved. It wasn't even Chickamauga, where you had Longstreet and his corps and Thomas, replicating Stonewall Jackson and becoming the Rock of Chickamauga. Those are all silly reasons. After reading Timothy B. Smith's ***Shiloh: Conquer or Perish***, you will wonder why you never paid Shiloh its due.

Smith sets the stage for Shiloh well in the American Civil War universe as being more than the West's version of First Bull Run, a disorganized brawl between two mobs. Grant's campaigns in Fall 1861 and the riverine campaigns of early 1862 meant the Union forces were truly no longer green. But for both sides, leadership in terms of handling the vast amount of men, compounded by the terrain of Shiloh, made this a complicated battle. This is where Smith's knowledge of Shiloh, based on his time and experience as a park ranger there, allows him to see the terrain vividly. What sets Smith's book apart is Shiloh was like Gettysburg and the Wilderness, a multiday battle. With Shiloh, however, the other works on it seem to find a Union victory a foregone conclusion and skim right past it. What this does is give you a *very* false picture of the battle. Smith corrects this and perhaps gives us a fresh interpretation – the best other book I've seen giving the second day its due was Jeff Shaara's ***A Blaze of Glory***.

Smith tends to look with a fresh eye on certain aspects of the battle that are well-known historical "facts." He gives Beauregard more credit for his efforts and believes the halting of the first-day

attack was both sensible and done due to poor battlefield intelligence. As well, we see that Lew Wallace, later to be the hero of the Monocracy, did not deserve to be pilloried here as he was, fighting his division well and being critical to success on the second day. I was quite surprised. I was more surprised that the man who grew to be Grant's greatest nemesis due to his political intrigues, GEN John A. McClernand, showed himself to be competent and then some. Smith portrays nicely the growth of Sherman as a battlefield commander over the two days. However, Smith perhaps lets Sherman off a little easy for his lack of a meaningful picket line.

Maps? You want maps? ***Shiloh*** has 20 maps, and I found them quite helpful in moving and aiding the telling of the battle.

Smith does something else many books writing about battles fail to do: deal with the after-effects for the area and local economy. Shiloh, unlike Gettysburg, was in a more rural, less-developed area that had to deal with the impact of both the battle and the dead and wounded. Moreover, not only the battlefield itself but also the approach marches and line of retreat had a huge impact on the local habitat far beyond the immediate battlespace.

I will note Smith seems perplexed on how to assess the criticality of the Hornet's Nest. Historians are literally all over the battlefield in assessing its importance to the fight. I think Smith is perhaps unsure and straddles both camps. However, the Hornet's Nest sucked in Confederate brigade after brigade due to the importance of its terrain, though perhaps it could have been screened and bypassed.

Smith does simply a first-rate job, enough so you will want to find his other books on the Civil War's Western Theater. What ***Shiloh: Conquer or Perish*** did for me was rewrite in my mind the history of the battle and filled in the gaps. I knew the battle went on for hours the second day, but other sources have glossed over it. For that reason

alone, ***Shiloh*** needs to be read by any student of military history. The only negative of the work is that the endnotes offer no explanation or explore other material; instead, they just cite sources. That's a small quibble when the work is slightly more than 600 pages. With that very small aside, Smith has written the new standard on Shiloh.

LTC (DR.) ROBERT G. SMITH

Defending Fortress Europe: The War Diary of the German 7th Army in Normandy, 6 June to 26 July 1944; edited by Mark J. Reardon, Bedford, PA: Aberjona Press, 2012, 344 pages, \$24.95.

For the many of us who served on Army staff or other military staff, one of the critical elements in any unit was keeping the journal, the daily staff log. This staff log served as a historical record of everything the unit did and the actions it took. I recall days and late nights in an M111 Personnel Carrier in the tactical-operations center compiling my portion of this. Many young Armor lieutenants "back in the day" cut their professional-staff-work teeth on this task. So with great interest I reviewed this war diary of the 7th Army. The 7th Army was the major German combat formation from D-Day until the breakout with Operation Cobra across France in July 1944. What makes this fresh and useful is the editor is both a retired Armor officer as well as a very knowledgeable current military historian with extensive experience with the war on terror.

Reardon introduces the reader to the broad picture of the German army in the West prior to D-Day with two concise chapters. The two chapters setting the stage for the reader are both on how to prepare for the invasion – one on strategy and tactics, and the other on men and material. Reardon introduces each time period of the journal with editor notes that often puts the chapter in perspective,

as well as including its place in the wider context of the struggle for Europe.

Defending Fortress Europe is not a reprise of the tactics and battles for control of Normandy. It is instead truly a view from the other side of the hill, written for the most part dispassionately about the ever-growing crisis facing the German army in the West. If there is any time the veneer of professionalism slips, it is usually about the lack of Luftwaffe support and some occasional sniping at the navy. What comes across time and time again in the pages is that the German army knew it was facing a point of no return in logistical matters. For a more modern comparison, in the invasion of Iraq in 2003, the Army was constrained in terms of repair parts since the “bean counters” had severely curtailed the amount of lines of repair parts that could go forward. In a conflict where

more equipment was written off due to this and battle damage, this could have had tragic consequences.

Multiply this small item by 100 – the German army was hemorrhaging combat soldiers with a *de minimis* influx of trained replacements, fuel, equipment and ammunition. It is still rumored that V Corps went black in terms of ammo supplies at the Karbala Gap in 2003. Imagine the issue for the Germans: you had retooled Soviet, Yugoslavia and French artillery pieces. You had some arms from all over Europe. Your wheeled-vehicle fleet suffered likewise, as it was requisitioned from civilian economies all over Europe, presenting a nightmare for repair parts. If the reader somehow missed the importance of this, Reardon several times redirects them back to understanding this huge constraint on German offensive operations.

Two small caveats with the book. First, I know Reardon both personally and professionally, having worked with him at the U.S. Army Center of Military History. I was able to put aside any favoritism in reading and judging the book objectively. My second caveat was the book suffered not from a lack of maps but from referencing the reader back to the proper map in the front of the book. A good editor should have been on top of that omission.

Reardon stays focused on his topic with his commentary and, unlike many current history books, does not stretch teaching points by bandying about whatever is the current flavor of military buzzwords or concepts. For both the combat leader and the logistician, Reardon’s book is highly recommended.

LTC (DR.) ROBERT G. SMITH

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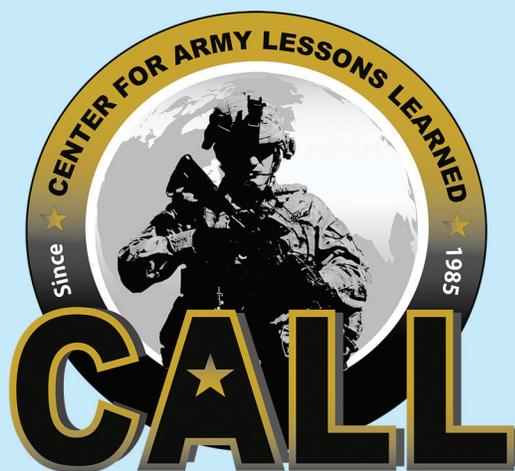
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12TH CAVALRY REGIMENT



The distinctive unit insignia was approved Oct. 22, 1957. This regiment was organized at Fort Sam Houston, TX, in 1901 and spent its first two years at that post. The cactus shows the birthplace of this regiment as well as its service on the Mexican border. The motto translates to "Always Ready."

